

PLAINTIFF'S  
EXHIBIT

ETCO-118

ETHEL NEWS

1958

ETC 30777

# ETHYL NEWS INDEX—1958

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 Electronic Eyes on Traffic (Modern controls) . . . . . January-February  
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## ETHYL CORPORATION

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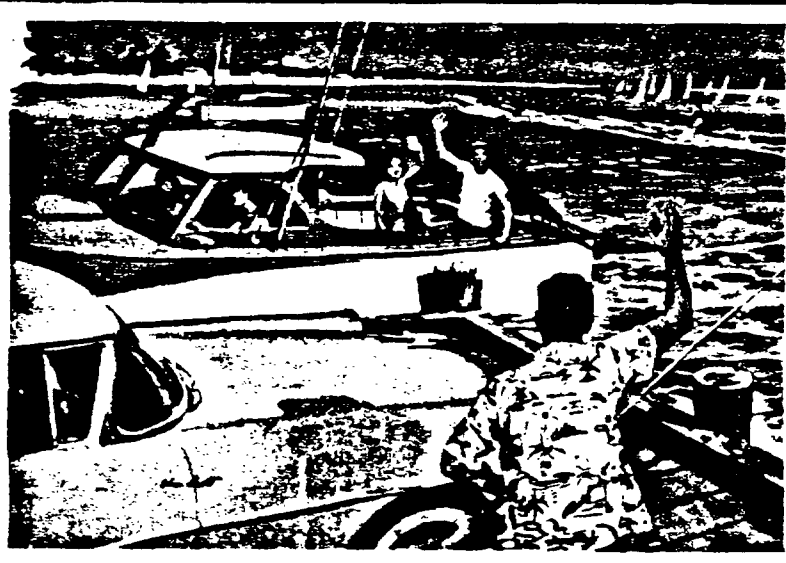
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# ETHYL NEWS

JANUARY-FEBRUARY 1958



ETC 30780

# ETHYL NEWS

JANUARY-FEBRUARY 1958



THE COVER: From the snow-covered North to the palm-fringed South, there's no limit to the places you can go and the fun you can have in the family automobile. That's the message of the Magic Circle promotion (See pages 1-3), which is designed to increase the sale of service station products.

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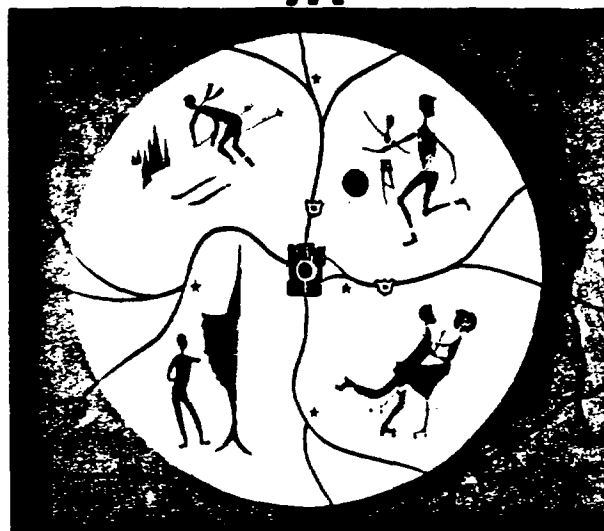
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ETC 30781



**ETHYL  
CORPORATION  
PRESENTS**

## **The Magic Circle**

**New promotion is designed to increase sale of service station products**

*By Harry McGraugh*

**A** DRAMATIC NEW PROMOTION to help increase the sales of all products at the service station level has been launched by Ethyl Corporation. Called "The Magic Circle," it is designed to stimulate motorists all across the nation to drive more for pleasure.

The campaign, which began early in January, marks the fourth consecutive year Ethyl has embarked on a nation-wide market expansion program for the oil industry.

The essence of the Magic Circle idea is that around everyone there is a magic circle of wonderful and interesting things to do and see by automobile. It may be a trip to a scenic or historic place, a week-end vacation to view one of the many natural or man-made wonders that mark

our land, or a long overdue trip to visit old friends and share old memories—and create some new ones. No matter where you happen to be, the promotion tells motorists, your car makes it possible to enjoy a magic circle filled with adventure, beauty and fun.

The Magic Circle promotion is based on research which indicates that one-half of the car-owning families in the United States rarely or seldom uses their automobiles for pleasure or leisure driving. Changing this situation is one of the major objectives of the campaign. If these motorists can be induced to use their automobiles for pleasure more frequently, it will be the same as acquiring new customers for the oil industry.

A second major objective is to increase driving



for pleasure by those people who now use their automobiles moderately for leisure time activities. A third objective is to maintain the "psychology" of pleasure driving in the minds of those who use their cars extensively for this purpose.

The campaign will be promoted in two separate but interrelated ways. One is through the Magic Circle Travel Clinic and the other by a series of color advertisements in leading national magazines.

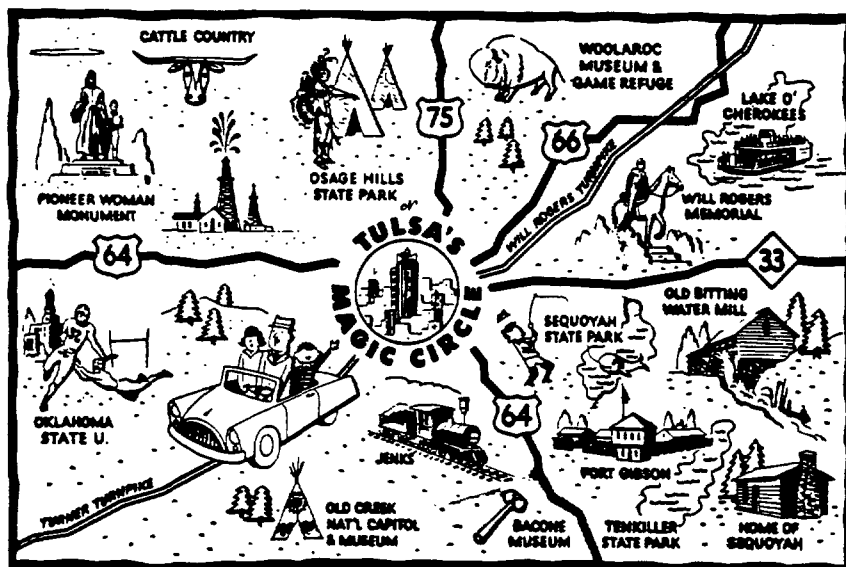
### News and Feature Service

The Magic Circle Travel Clinic is a unique weekly news and feature service which is sent to a leading newspaper in each of 220 cities throughout the United States. This service is designed to bring to people all across the country through the columns of local newspapers news of places and events that can be reached easily by the family car. It carries notes on travel trends and innovations; new highways; motels and hotels catering to motorists; up to the minute news of festivals, fairs, rodeos, sports events, concerts and features on magnificent scenic and historic attractions. It also is devoted to the fun and advantages of off-season travel.

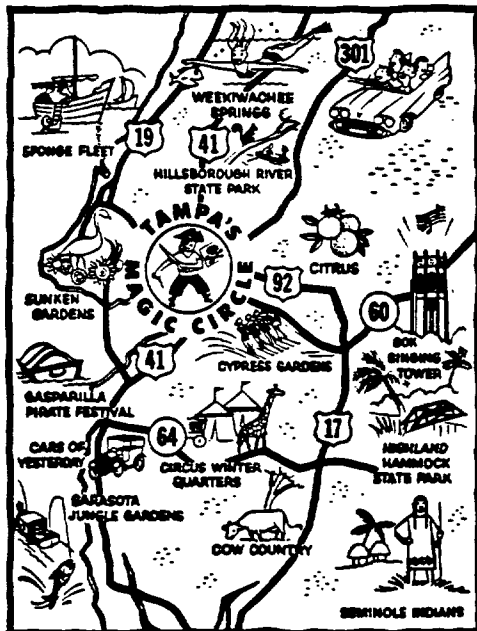
Part of each week's feature is a Magic Circle

tour around a different United States city. Specially prepared maps or illustrations accompany each article. No mention of Ethyl Corporation or any product is made in this news service. It is a feature solely to promote travel by automobile.

Ethyl's advertising on the Magic Circle theme, which started this January, appears in *Life*, *Look*, *Saturday Evening Post* and *Sunset* magazines. An advertisement will run in each publication every four weeks through November. The ads colorfully and dramatically point up the many exciting things to do by automobile. They feature everything from long vacation trips to short pleasure drives and touch on the hundreds of ways a car can provide a mapful of fun.



Typical of the materials circulated to newspapers throughout the country each week by the Magic Circle Travel Clinic are this picture map of the Tulsa area and photograph of visitors inspecting exhibits at the Serra Museum in San Diego, Cal.



Other Magic Circles spotlighted by the Ethyl-sponsored Clinic include those surrounding Tampa, Fla., above, and Palm Springs, Calif., right. Pictured below is the fascinating botanical building in Balboa Park, another of San Diego's travelers' attractions.



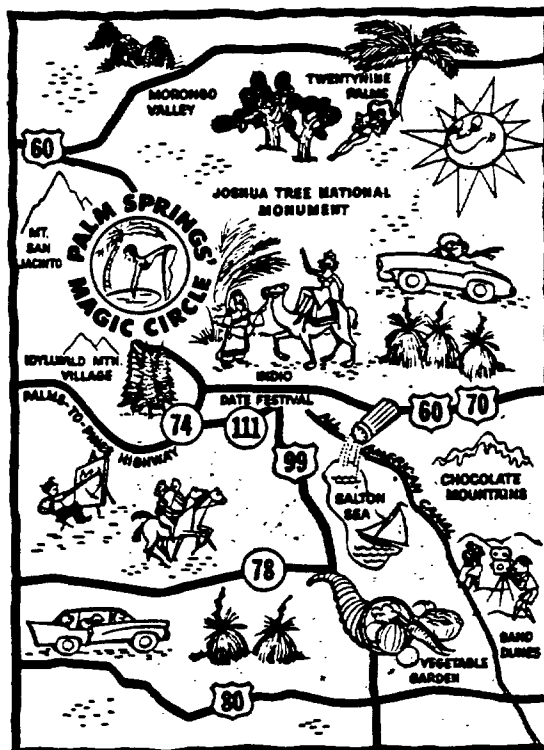
The combined monthly audience of the four publications carrying Magic Circle advertising is estimated at 65,249,000. Coupled with this are the many newspapers featuring the Magic Circle Travel Clinic. It can be seen easily that in the course of a year, Ethyl will tell the Magic Circle story to a high percentage of the motoring public.

The promotion is designed to provide profits for both the motorist and the oil industry.

### Wonderful Way of Life

The motorist can find in his automobile a wonderful way of life with a multitude of wonderful things to do. And seeing America by automobile can combine the pleasure of travel with the deeper reward gained from a better understanding of the priceless heritage each of us shares.

The oil industry can profit in increased sales at the service station level. For of course, as people drive more for pleasure, they will use more of everything sold at service stations. The Magic Circle is a powerful and impelling idea to help obtain this objective. #



## SEE NO, HEAR NO

### Producers in California develop ingenious ways to disguise operations on valuable residential property

By Jack B. Kemmerer

CAMOUFLAGE, a familiar wartime sight on the Pacific coast, has returned to the Los Angeles area. Oil companies have brought it back. Disguising their drilling and pumping operations are among the many forward steps taken by producers active in residential districts.

Oilmen whose companies are engaged in finding and producing petroleum in heavily populated areas know that one of the major problems is public relations. To many people unfamiliar with modern advances, an oil field means a forest of dirty derricks, noisy drilling equipment, the incessant clanking and creaking of pumps, and worst of all, odors.

#### Need All Crude

But with every source of crude oil important to the national economy, oil companies are working hard to tap underground reserves in built-up neighborhoods with a minimum of inconvenience to property owners.

A few years ago, any oil producer faced with the problem of quieting and camouflaging his operations might have thrown up his hands in despair. More recently, however, extensive research and development work have pointed the way toward "noiseless, odorless and invisible" oil fields. Today,

Enclosing a derrick in soundproof material was a pioneering step in quiet operation:



the great strides that have been made are incorporated in daily production practices.

First step was the soundproofing of derricks. This was accomplished by enclosing the entire structure in a specially developed fire resistant soundproofing material—vinyl-coated cloth containing a filler of 1½-inch-thick spun glass. Electric drilling equipment was substituted for noisy engines and oil-type pumps were eliminated by putting the pump and its hydraulic engine below the surface of the ground.

Despite these precautions, there still was some noise noticeable by people living in the drilling areas. These led to a concentrated noise-measuring research program. The results were startling.

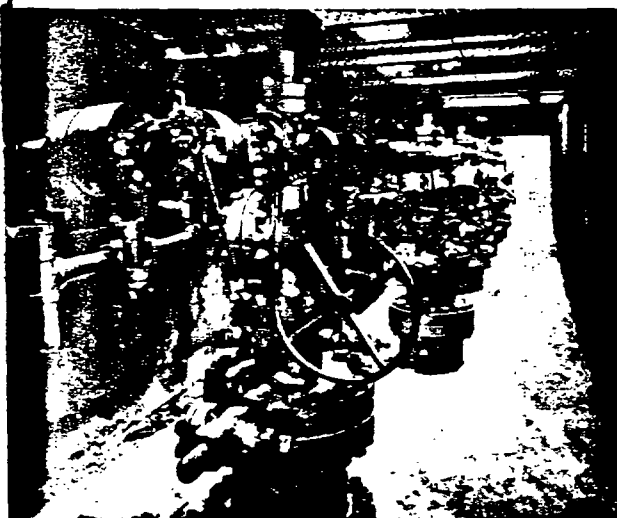
The major offender was found not to be noise at all but vibration created by the heavy drilling

# SMELL NO Oil Wells

Producing quietly and unseen, 29 oil wells lie beneath the fairways and greens of the Hacienda Country Club.



Only this covered trench shows where a battery of wells is hidden at the big Sansinena field.



Pumping from underground wells never disturbs anyone living near them in the suburbs of Los Angeles.

equipment. This vibration was measurable at a distance of two miles and was strong enough to rattle dishes and windows. Placing the derricks and pumps on rubber cushions successfully eliminated it, however.

Sound studies also disclosed that at a distance of only 300 feet from an operating derrick, noise of overhead airplanes, barking dogs, or singing crickets drowned out the slight noises coming from the drilling site. They discovered that it was the unusual noise that caused the most distraction—noises such as the dropping of a lunch box or metal hitting metal. This was especially true late at night when normal city noises had quieted down.

These noises were eliminated by installing rubber bumpers on any equipment such as elevators and

tongs which might make metal to metal contact. "We haven't bought our men rubber lunch boxes yet, but we will if we have to," quipped one foreman.

When the drilling phase of oil production is complete, derricks are removed and the oil fields are made virtually invisible.

Typical of an "invisible" oil field and one that has become a model for the industry is Sansinena development in La Habra Heights, Calif.

There, expensive homes, surrounded by lush foliage of citrus and avocado trees, dot the hillside. In a rolling valley below the homes, golfers play on a verdant 18-hole course and children splash in the community swimming pool.

This is an oil field?

Yes, it is one of the major oil fields in California, producing nearly 11,000 barrels daily from 150 wells. And there isn't a well in the field that can be heard, seen or smelled.

The field has become an integral part of the community and plays an important role. To date, Sansinena development has paid \$2,300,000 in

taxes. In the local school district, its owners pay 61 percent of the taxes.

There are about 500 homes in the oil field, and since 1953 property owners have received \$4,-549,434 in royalties. These payments, combined with the camouflage and silencing operations, more than offset any annoyances from the oil field.

If you were to look for the field, you probably wouldn't be able to find it. But there, scattered through the three-mile-long stretch, are 12 drilling and pumping sites. Each, however, is a flat, concrete-topped area, hidden by landscaping.

In the center of each area is a length of steel grating. Beneath this grating, completely underground and reached by stairs, are the well heads. There are from two to 30 at each site.

### Only Needles Move

No noises escape the gratings, for hydraulic deep-well pumping systems have replaced the conventional rods with walking beams. The only moving thing visible is the needle of a dial at each well.

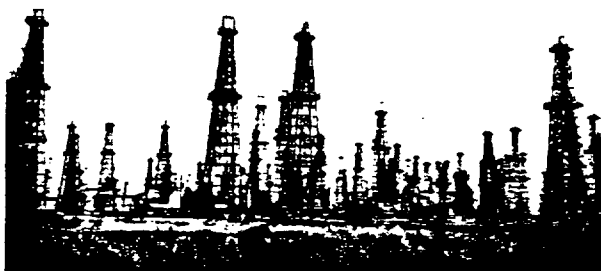
At one of the sites, tucked away in a canyon and well screened from residences, a bank of muffled internal combustion engines pumps power oil for the hydraulic systems. The oil cleaning systems are also here, in sound-insulated buildings.

Oil fields in other built-up areas incorporate the type of developments found in this progressive field.

The feelings of the oil industry with regard to urban operations were expressed recently by a ranking executive: "We feel our responsibility. As a member of the oil industry on the Pacific coast, we have the obligation to furnish our customers with high quality petroleum products. With the ever decreasing supply of crude oil and the ever increasing market for refined products, this is becoming a more and more difficult job. We feel strongly that every source of crude oil must be utilized if the demands of the consuming public are to be met."

It is for these reasons that oil companies are spending huge sums of money to drill wells even in residential areas and to camouflage and quiet them. It has been money well spent.

"After the first well is drilled, our opposition usually melts," one official pointed out. "One woman looking down on our well from her expensive home wanted to know when we were going to start drilling. She didn't know we had drilled the first well and were nearly finished with the second!"#



A forest of derricks, above, is in sharp contrast with the pumping station, below, in a residential neighborhood. Shrubbery and vines hide the inconspicuous units.



# PATENT FOR PROGRESS

Ethyl obtains rights to promising  
new antiknock agent for gasolines

PATENT COVERAGE has been obtained on AK-33X, the new gasoline antiknock compound originated by Ethyl Corporation and announced last June. The product has potential use as a supplement to tetraethyl lead or by itself to increase fuel antiknock quality.

An organic compound of manganese, AK-33X is the first antiknock agent with promising commercial applications to be developed since the discovery of tetraethyl lead's knock-inhibiting properties in 1921.

For the new product, United States patents 2,818,416 and 2,818,417 have been issued to Jerome E. Brown, Earl G. DeWitt and Hymin Shapiro of the Ethyl Research and Development department, and assigned to the Corporation. The patents cover the specific new antiknock additive and the class of chemical compounds to which it belongs.

Generally speaking, the class of chemicals is one where a cyclopentadienyl group is attached to a

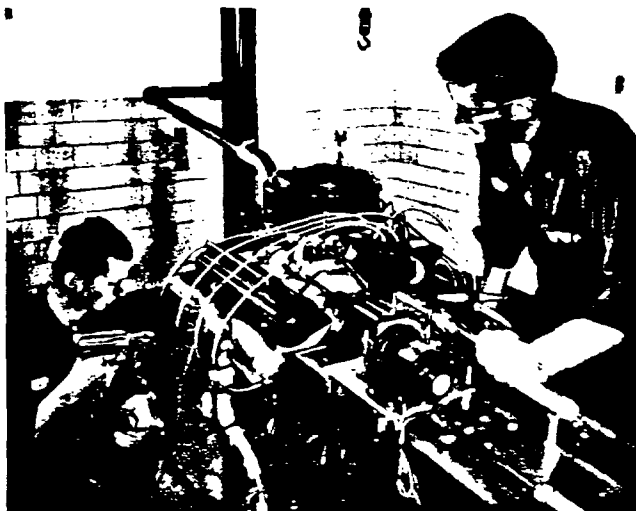
metal, which is also attached to other organic and inorganic groups. The specific antiknock compound is a derivative of cyclopentadienyl manganese carbonyl.

Samples of AK-33X have been made available to several hundred oil and other companies here and abroad for evaluation. Meanwhile, the Ethyl Research and Development department is also conducting evaluation and related studies in a comprehensive laboratory and road test program, especially on the new compound's possible utilization in automotive fuels.

The initial announcement of the product's potentials followed completion of preliminary tests on the effectiveness of AK-33X as a supplement to tetraethyl lead in aviation gasolines.

These tests showed power gains of up to 20 per cent and indicated that with improved piston engines, aircraft may be able to fly higher, cruise faster, carry larger payloads and operate with increased gasoline economy. #

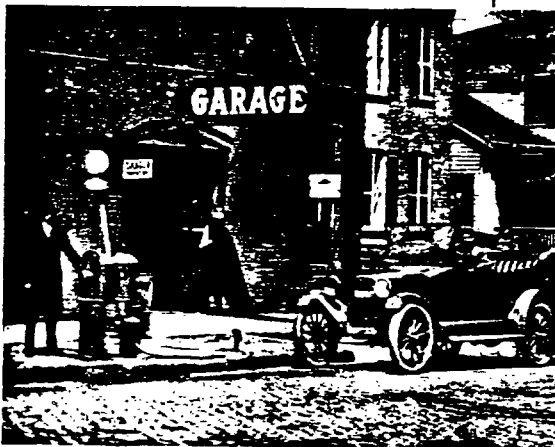
The new antiknock compound is being evaluated in engine tests in the laboratory and on the road.



# STYLED FOR SERVICE

Today's retail gasoline outlets  
feature the "wide-open" look

*By Vartanig G. Vartan*



The modernity of today's service stations makes it hard to believe that gasoline was once dispensed from curbside pumps like the one pictured above . . . Right, small suspended pumps and attractive TBA displays inside the lube room are features of an up-to-the-minute station across from Disneyland in Anaheim, Calif.

8





Modern designing trends at these service stations are seen in the clean building lines and easy company identification.



The end of World War II flashed the green light to service station construction and modernization after a five-year lull. But before the oil companies set a single tile they studied the situation from hose nozzle to lubrication room. They inspected pump island layouts, motoring habits, color schemes, tire displays and office blueprints.

Although companies conducted their research and arrived at their decisions independently, a uniform conclusion was to avoid the hodgepodge of ornament that blossomed in the Twenties. At the start of that decade many stations were little more than roadside shanties. But by 1929 the number of stations had jumped from 15,000 to 121,000 as an entire nation seemed to take to auto wheels.

This ushered in the grand age of service station gingerbread. Some dealers thought nothing of set-

ting up a \$300 granite vase simply for decoration. In the Far West stations sprouted as adobe huts or white-bricked missions complete with bell tower. In the Northeast stations looking like lighthouses rose five stories high in concrete splendor. Elsewhere motorists bought their gasoline at structures built to resemble Chinese pagodas or log cabins. On Long Island one station proudly offered a Greek Revival facade next to its pumps.

#### Designed for Convenience

The new emphasis is to tailor stations to motoring needs and to the public's convenience. Gingerbread styling and gasoline sales, it seems, don't necessarily mix.

Besides clean modern lines, each company also concentrates on standardizing service station design to permit ready identification, as well as economy of construction. One company reports that an average two-bay station, exclusive of land, now costs around \$20,000, or triple the price tag in the late 1930's.

The sales building, no longer doubling as a signpost, has been moved back in the lot. The spruced-up lots have grown bigger, too. This boosts visibility and moves more autos onto the property for a cheery, "Fill 'er up!"

Esso Standard Oil says that 20 years ago a lot 100 by 100 might have been suitable for a station site. "Today we would want a lot 50 to 100 per cent larger," Esso says.



Cities Service hired industrial designer Henry Dreyfuss to revamp its stations. He set architects to work at drawing boards and, to back them up, put two assistants into uniform to gain first-hand knowledge in servicing cars.

The resulting stations feature a green pylon with the company emblem rising boldly from the center of a trim, glass-fronted building. At night the inside lighting is calculated to attract the eye. Every inch of the station, from glass expanses and ceramic tile to slim brick siding, connotes cleanliness.

#### Company Emblems Important

Shell Oil Company assigned Raymond Loewy the job of redesigning its emblem, an important identification at any service station. He elongated the sign slightly, flattened out the lettering and switched the coloring from an orange yellow to a lemon yellow.

Many companies found a friend in porcelain enamel. It comes in any color. It's fused to sturdy steel panels. And it never needs painting. The post-war search for better stations also led to plastics and prefabricated buildings, most popular in the West.

In the Midwest a canopy made of plastic—high, light and airy—arches over the pumps of a Continental Oil Company station. Another canopy, shaped like an airplane wing, soars above an Oklahoma City station of Champlin Oil and Refining



Towering concrete lighthouses were typical of the gingerbread era of service station design.

Company. This prefab unit alternates glass with porcelain enamel sections in blue, white and red.

This expansion of facilities called for huge outlays. One major marketer, for example, says it spent \$27 million during 1946-50 for building 300 new stations and modernizing other units. Today, a single restroom, gleaming with tile and full-length mirrors, can cost more than an entire station did 35 years ago.

Station designs themselves come in family groups. A dealer may select one of three or more layouts, varying in cost but using the same basic plan, to suit his gallonage volume.

Mr. Leppin, who uses scale models to help dealers visualize a future station, emphasizes that "pump islands are the focal point of a station."

It was the pump that launched the service station. Fifty years ago, the pump stood as a lonely sentinel on the curb in front of a general store. Today, thanks to the pump and related services, some 182,000 stations ring up sales of more than \$13 billion annually.

#### Easy Access and Exit

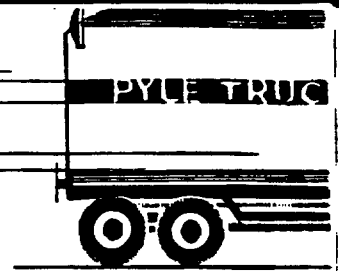
Pump islands are placed to permit easy access and exit for the motorist. Some designers envisage pumps of the future as no more than small units suspended from posts.

A turnpike station, geared primarily to gasoline volume, may contain as many as 20 pumps and only two bays. These stations, often linked with restaurants, present extensive frontages along the highway. Their design usually is decided by the turnpike authorities.

The growing importance of auto accessories is seen in the interior design of many stations. One company, for example, found that shadow box shelving tripled its sales in wrench sets. Stations even utilize the walls of the lube room for displays.

The service station, true to its name, has offered an extra inducement to the driving public from the start. Back in 1912 a 13-pump station complete with a maid who served ice water to dusty travelers opened in Memphis. In the spring of 1957, one company decorated the property of its stations in the Miami area with orange chrysanthemums and fire-cracker-red salvias. Customers approved heartily. So did local garden groups, which combined to present the company with an award of merit, the first of its kind. #

# Better Truck Performance



## Ethyl study shows fleets doing more work better and at less cost

**T**HE EFFICIENT COMBINATION of improved petroleum products and better engines is enabling motor trucks to carry heavier loads, travel greater distances and achieve more fuel economy. At the same time, these trucks are maintaining an increasingly high level of engine durability.

These are among the latest findings of the continuing selective study of fleets conducted by the Ethyl Corporation Research Laboratories. They are reported in a new edition of the booklet "Trends in Heavy-Duty Fleet Operations."

Started in 1949 to provide helpful information for petroleum refiners, engine manufacturers and for Ethyl Corporation research projects, the Company's fleet studies provide an authoritative picture of heavy-duty truck performance and an insight into the purchasing, servicing and maintenance practices of fleet operators. The current report presents data for the year 1956 and compares it to those developed since 1949.

### Intercity Operations

The 1956 study involved 187 fleets with 5,526 vehicles and 19 engine models. These represented nearly 2.5 percent of all heavy-duty truck fleets in the United States and 2.7 percent of the total mileage covered by the nation's intercity heavy-duty trucking operations.

For purposes of the survey the vehicles used by the various fleets were divided into two broad categories—those using engines originally designed for heavy-duty fleet operation, and those with smaller engines, which are generally modifications of existing passenger car designs.

Reviewing performance over the 1951-1956 period, it is found that the smaller engines are now hauling 21 percent heavier gross loads and the larger engines are hauling 20 percent heavier gross loads. Despite these operating increases, trucks enjoyed an overall average improvement in fuel economy of some 15 percent.

Particularly interesting to petroleum marketers, engine manufacturers and Ethyl Corporation are reported trends in gasoline purchasing, lubricant selection and lubricating practices. In response to requests from the petroleum industry, the new report, for the first time, gives details on types of crankcase oil used, mileages between crankcase drainings, frequency of chassis lubrication and intervals at which differential lube oils are changed.

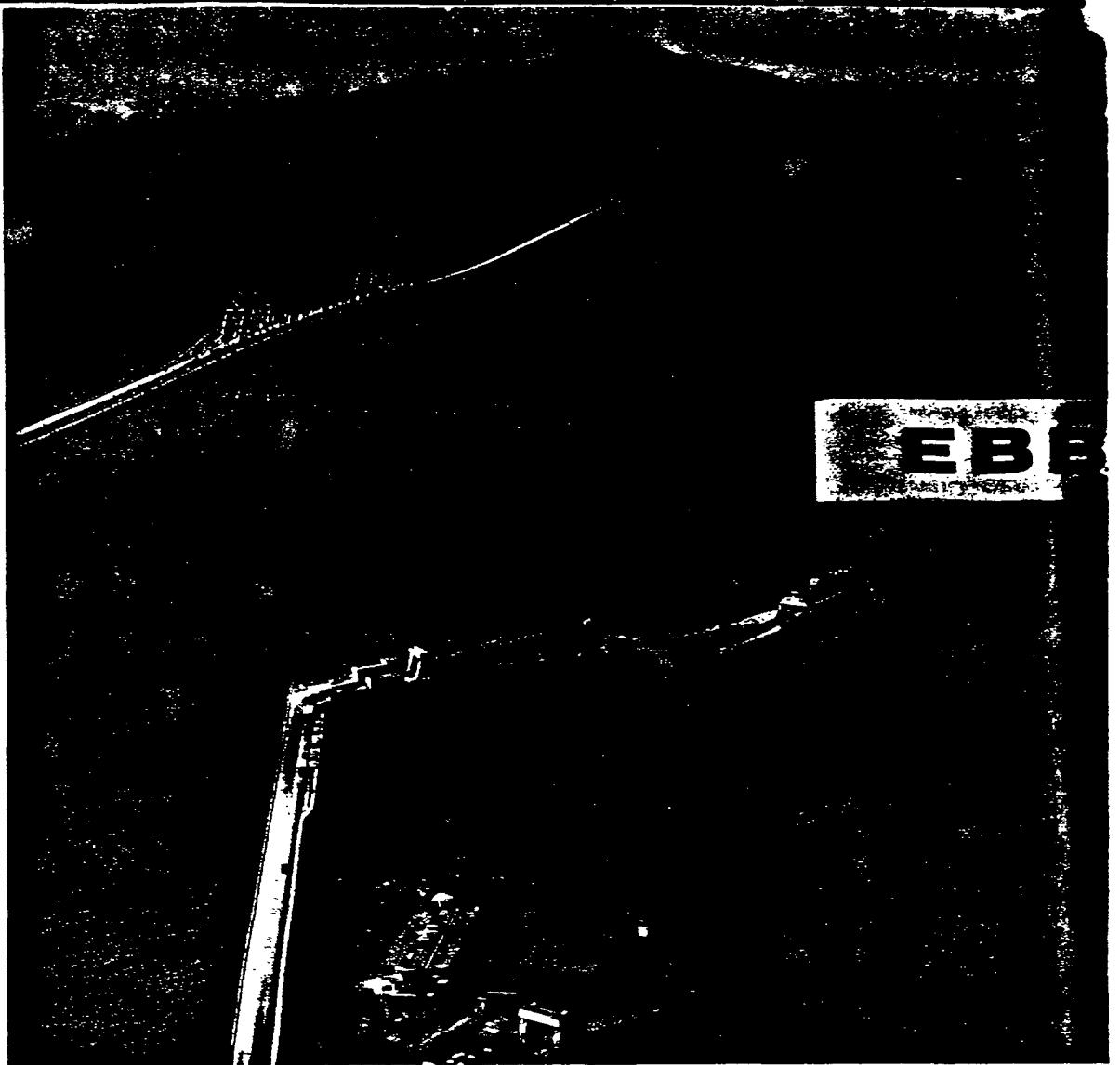
In discussing engine durability, the report points out that while intercity truck fleets hauled heavier loads over greater distances, the overall durability of the engines was improved or maintained at a high level.

Generally speaking, in the case of five critical engine parts—valves, connecting rod and main bearings, piston rings and cylinder bore wear—larger engines have a better durability record. This is often traceable to the practice of some fleets in which more small units are used for services to which other operators frequently assign heavier vehicles.

Engine durability studies also explored thoroughly the effect of the tetraethyl lead content in the widely-used regular grade of gasoline, which has been higher in recent years. No change was found in the relative durability of light or heavy-duty truck engines which can be traced to fuels.

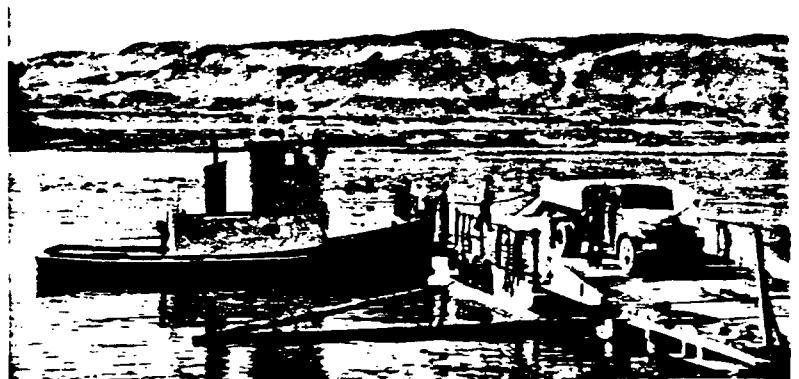
Overall, the latest report from Ethyl's selective study of fleets shows that because of better fuels, better lubricants and more efficient engines, the nation's heavy-duty truck fleets are able to carry heavier loads greater distances and at the same time they have fewer maintenance and repair problems. Specifically, it presents detailed statistics covering each of the areas of truck operation studied — maintenance, servicing and durability — and shows improvement trends over the years.

Copies of "Trends in Heavy-Duty Fleet Operation" are available through Ethyl Corporation representatives across the country. #

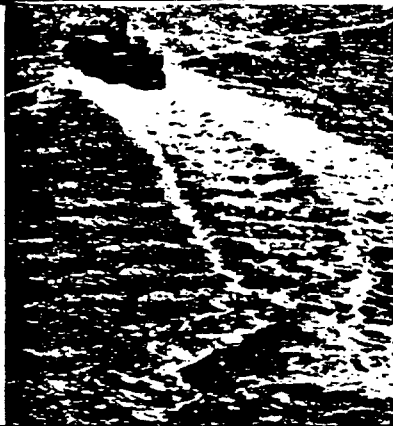


The Richmond-San Rafael bridge is among the modern spans that have caused the eclipse of San Francisco Bay ferries.

The Columbia River ferry between Roosevelt, Wash., and Arlington, Ore., one barge and a tugboat, is operated 15 hours a day—mostly by owner J. B. Flippin. In the last five years, two ferries on each side of it have been scrapped.



North, south, east and west,  
new bridges and tunnels are  
relegating ferryboats to a  
lesser transportation role



## TIDE FOR FERRIES

By S. H. Scheibla

FERRYBOATS are rapidly joining showboats and the horse and buggy as vanishing bits of Americana.

Once used by travelers to cross everything from bays to bayous, ferries are giving way to bridges, tunnels and causeways.

The World Book Encyclopedia sums up the situation this way: "Ferries were formerly used at most large river crossings, but bridges have now taken their place almost everywhere."

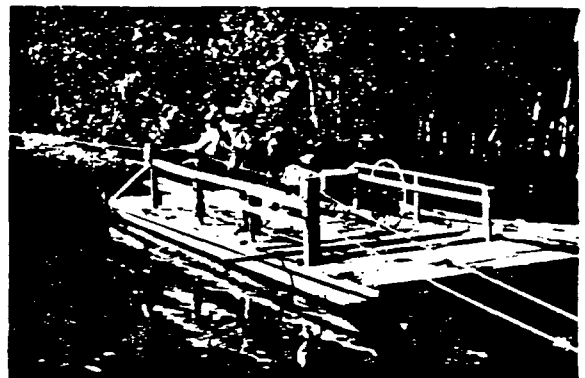
Though no one debates the greater efficiency of bridges, still it is with a bit of nostalgia that ferries are passing. They have provided many a young-

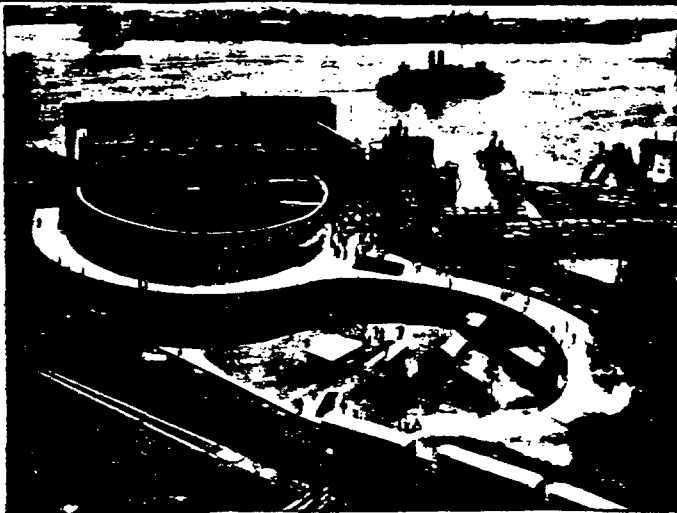
ster his first trip on the water. Because they give an inexpensive and short ride, ferries have been for many their only chance to feed seagulls, to sit on deck and inhale a tangy breeze, to idly watch the wake, to inspect the engines and to watch the skipper navigate.

Ferries are truly unique boats—the only ones the same forward and aft. This gives them the ability to go back and forth from shore to shore without turning around. Because they are built for utilitarian rather than aesthetic purposes, ferries to some folks look ugly as they chug past sleek ocean liners. But chug past they do, for most of them are faster than many of the big ocean-going vessels.

Despite a combination railroad-vehicular bridge a few miles upstream, this ferry still crisscrosses the broad waters of the Mississippi River between downtown Baton Rouge and Port Allen, La.

In a bygone era, this rope-guided and muscle-powered ferry connected opposite banks of Florida's Oklawaha River.





Above, a boat approaches the Manhattan terminal of New York's famed Staten Island ferry after its 25-minute run . . . Right, Queen Elizabeth and Prince Philip on the deck of an Army ferry in New York harbor.

What happens to these remarkable boats and their captains when the bridges and tunnels take over? Some typical answers are found in Maryland, where the miles-long Chesapeake Bay bridge opened a few years ago. A couple of the boats were purchased by the Washington Toll Bridge Authority of Seattle. Another was sold to Compania Anonima De Transportes La Translacustre of Maracaibo, Venezuela. The "Gov. Emerson C. Harrington II" is shuttling across Lake Champlain for the Lake Champlain Transportation Company of Burlington, Vt.

Of the 10 skippers who lost their ferries because of the new bridge at Sandy Point, Md., only three have retired. One of the other seven is maintenance foreman for the new bridge, five are working on fire boats, tankers and steamers, and one is operating a boat yard.

### Staten Island Ferry Survives

All ferries have not disappeared, however. In many places, they still are vital links for travelers and commuters.

The most famous one in the world, the Staten Island Ferry, is still doing a thriving business across the Upper Bay in New York harbor. It is estimated that it transports over 23 million passengers and 1,500,000 vehicles annually—everything from trailer trucks to baby carriages.

The Staten Island Ferry (actually 10 boats) still offers one of the world's cheapest voyages.



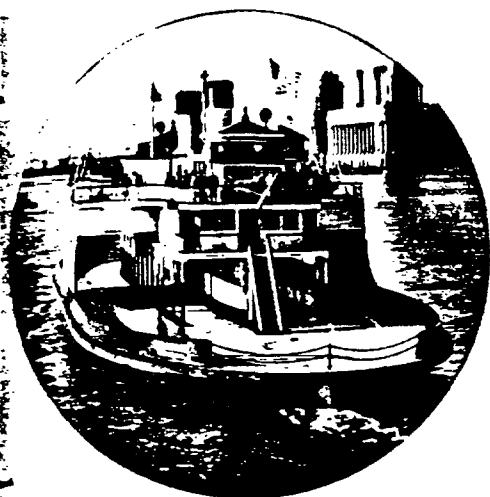
One of the Hampton Roads (Va.) ferries that was put out of business by the opening of a bridge-tunnel system.

The price remains at five cents for a 25-minute ride.

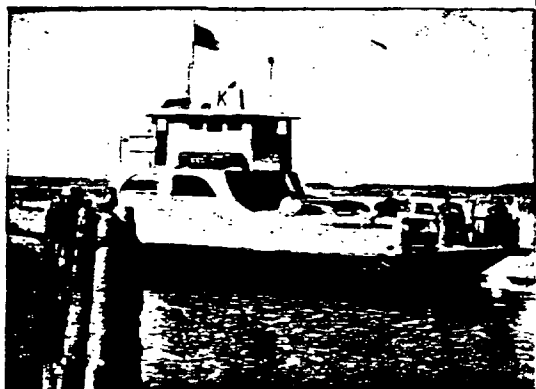
Last fall, Queen Elizabeth and Prince Philip paralleled the route of the Staten Island Ferry when they rode on a new diesel-powered Army ferryboat, en route from Washington, D. C., to New York City.

That famous lazy river, the Mississippi, still is crossed by a number of ferries including the ones which run between Baton Rouge and Port Allen, La.; Canton, Mo. and Meyer, Ill.; and New Orleans and Algiers, La.

Far to the north, travelers can now cross the Straits of Mackinac in 10 minutes over the new bridge between Mackinaw City and St. Ignace, Mich., which opened last November. The trip by



The Chester (Pa.) ferry across the Delaware River is the only one still in operation between New York City and Cape Charles, Va.



This modern craft of the Fort Myers-Sanibel ferry is successfully bucking the tide that is running against many Florida ferryboats.

boat used to take at least 40 minutes. Then too, schedules were subject to the conditions.

That's not unusual in northern ferryland. Great Lakes ferries usually suspend service from November to May because they can't navigate the frozen waters. So, not only are bridges faster than ferries, they are more dependable in frigid northern winters.

One startling exception to this rule occurred recently with the collapse of the Peace River Bridge on the Alaskan Highway. When shifting ground caused the destruction of the north end of the bridge in October 1957, traffic was shifted to the ferry at Clayhurst, B. C.



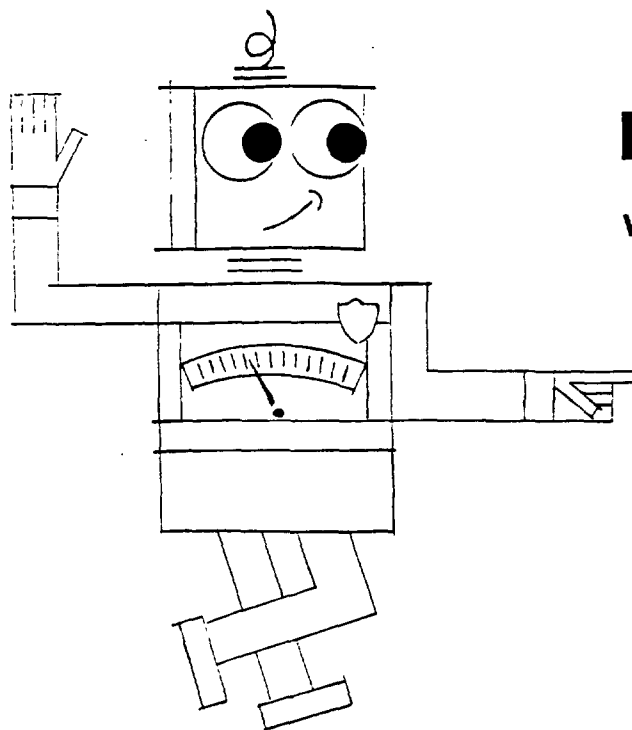
Looming up out of the mists, the new Mackinac bridge spelled the demise of the ferry when it was opened to traffic last November. It links the wilds of Michigan's Upper Peninsula with the industrial Lower Peninsula.

Bridges don't collapse often enough, however, to reverse the current trend. Ferries seem to have a better chance of staying in business where there is not enough traffic to warrant the erection of a bridge.

Miss Lucile Taylor is typical of many surviving small ferry owners. For 104 years her family has been operating a ferry which crosses the Black River five miles southeast of Cord, Ark. "I am the captain of the ferry with my name stenciled on the steel frame," she says, "and have two brothers operating it seven days a week, also nights."

One of the last remaining one-man ferries of the horse and buggy era is a rustic two-car ferry which crosses the Suwannee River about 14 miles from Fannin Springs, Fla. The captain lives high on the east bank of the river and waits patiently on his front porch for customers.

Ferries also seem to have a better chance of staying in business where the body of water is too big to be crossed by a bridge. As bridges get longer and longer, however, the life expectancy of ferries gets shorter and shorter. #



By Mark Metcalf

**N**ESTLED IN THE SHENANDOAH VALLEY of Virginia is a village whose main street is part of busy U. S. Highway 11. Viewed from a nearby hillside, it looks like a toy town whose tiny cars and trucks are driven by some hidden mechanism.

Visitors looking down on this scene notice a curious phenomenon: traffic moving into town from both north and south zips swiftly along the highway up to a quarter of a mile from the village limits. Suddenly it slows as if by magic, and the cars and trucks move ahead at a sedate pace.

A hillside spectator is a bit too far away to see the reason. But drivers along the road spot it quickly enough. The secret lies in a few modest roadside signs: SLOW DOWN! SPEED CHECKED BY RADAR.

On more and more highways throughout the country, "electronic policemen" like those outside the rural Virginia community are keeping tabs on motorists' driving speeds.

Radar devices, and electrical traffic timers, are in use now in some 3,000 locations in each of the 48 states. An increasing number of traffic authorities are relying on these devices in enforcement efforts. The robot timers have proved effective in

# ELECTRONIC

When used to promote highway safety, radar



This policeman is using his radar and recording apparatus to check traffic, as he looks for law-breakers.

two ways: by helping nail violators of speed laws, and by discouraging many motorists from driving too fast in the first place.

As the use of radar in traffic control becomes more widespread, many people are wondering about these devices—how they work, why their use is growing so rapidly and if their evidence provides legal grounds for speeding convictions.

Basically, of course, the purpose of any electronic timer is to cut down on illegal speeding. In almost one-third of all fatal highway accidents, drivers were going too fast. "Radar devices, when used properly, make law enforcement personnel more efficient," says Daniel G. Reynolds, director of the National Safety Council's traffic division.

Radar sets, as they are now used, are primarily for making spot checks along a particular stretch of roadway. Usually, such a stretch is one where excessive speeding has been observed, or where there is a special traffic hazard. Often a radar device will be operated only a few hours a week,

# EYES ON TRAFFIC

and timing devices discourage speeders and trap careless violators

but the very fact that motorists are warned that it may be clocking them is a deterrent.

The radar set itself is a deceptively simple piece of equipment. It's a sort of radio transmitter that sends a beam of radio waves down a highway. The transmitter may be set up at the rear of a parked policeman's car, or on a stand beside it.

When an auto coming down the road gets within 150 feet or so from the radar transmitter, it intercepts the radio beams and bounces them back to the receiving part of the set. The receiver automatically measures the length of the returning waves, to determine how fast the car is traveling.

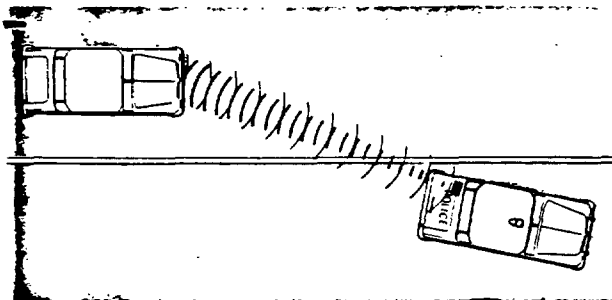
Information on a motorist's speed is measured

automatically inside the parked patrol car. A sensitive meter, scaled from zero to 120, shows how fast the oncoming driver is moving. Many sets also have attachments for making a permanent recording of a car's speed on a strip of paper.

When an officer on duty at the business end of the radar set notes a speeding auto, he picks up his radio-telephone and calls a fellow officer stationed perhaps a quarter of a mile away. The color, description and license number of the speeding vehicle are reported. The second patrolman then can give chase and catch the speeder.

Unlike radar, which uses invisible radio beams to trap the unwary motorist, the electrical timer has triggering devices which can be seen—but usually too late for the speeder to escape detection. These triggers are in rubber tubes stretched across the road, about 130 feet apart.

An electrical timer works like this: if an officer spots a car that seems to be exceeding the speed limit, he flicks a switch activating the timer. When the car's front wheels cross the first tube, a stopwatch is turned on in a little box connected to the tubes by wires. The watch stops when the car crosses the second tube.



Above, a diagram showing how highway police direct radar beams to measure an approaching car's speed . . . Right, similar equipment can be set up to keep an alert eye on how fast the traffic is moving along a busy parkway.



The face of the timer shows the car's speed, as well as the number of elapsed seconds. A car going 30 miles an hour, for example, will cross both tubes in three seconds. A car going 90 will take only one second to cover the same distance.

Drivers who protest they weren't speeding often are shown the stop-watch "frozen" at the speed they were traveling.

Electrical timers can clock only one car at a time. Occasionally an irate victim, getting a ticket, sees another car zoom by at an even faster rate than he was going. The second driver gets away with it, because the speed of other cars can't be measured until the timer is reset. In general, highways on which these "electrical tattletails" are used are marked with warning signs that speed is electrically timed.

### Allow Margin

Most traffic authorities, where electronic detectors are in use, allow drivers a prudent margin over posted limits. That variation may be five or ten miles an hour above the legal maximum. Traffic officers ordinarily use common-sense rules for determining when speed is excessive.

Court records show that the great majority of motorists seem convinced of the accuracy of radar and electronic speed detectors. "You can't argue with a machine" is the way many of these autoists express themselves. Barely one person in 100 escapes when a "mechanical policeman" has tagged him as guilty. Most courts are upholding the accuracy of speed measurements made electronically.

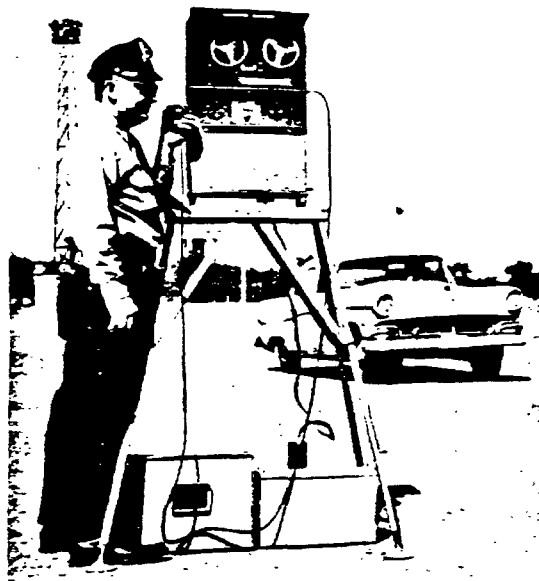
In a few instances, drivers clocked by radar have escaped fines because of legal technicalities. In one case, a woman motorist in New York state won an appeal from her conviction on a speeding charge based on radar evidence. She contended, successfully, that the officer brought in to testify on the accuracy of the radar set was not qualified as an expert. But on a second trial, when a radar specialist was brought in to give evidence, the driver was found guilty.

Perhaps the best indication of the merits of the robot timers, in the eyes of law enforcement men, is the increasing number of areas where they are being introduced. One authority estimates that 50 new radar sets and timing devices are going into use each month, on a country-wide basis.

One thing is clear: radar is making motorists increasingly conscious of the wide variations in speed limits from state to state, and community to community. Legal maximums range from a low of 40 miles an hour to a high of 70. The American Automobile Association feels that there should be a nationwide overhauling of speed limits to make them more uniform and more reasonable. The New England Council is studying a proposal for a uniform set of speed laws in all six New England states.

Meanwhile, the electronic telltales are having an effect, both directly and psychologically, in reducing hazardous speeding. The next time you're on the road yourself, watch your reaction to the sign, **SPEED CHECKED BY RADAR**. If you're like nine out of ten typical drivers, you'll let up on the gas and proceed with a bit more caution. #

Some radar instruments, like this one, not only record speeds but take pictures of offending motorists' cars.



### VALID EVIDENCE

Today's driver who tries to challenge the accuracy of radar evidence of speeding isn't blazing a new trail. Even in the days before cars had speedometers as standard equipment, lawyers were arguing against scientific speed detectors.

Back in 1910, for example, a New England traffic policeman hauled in a man for speeding. The officer had obtained his evidence by a camera and stop-watch device which mathematically calculated the rate at which the accused driver was going.

The defendant was found guilty, so he appealed what he felt was an improper conviction.

Massachusetts' Supreme Judicial Court, however, upheld the trustworthiness of the camera stop-watch detector. It was found that the device depended upon "the immutable working of natural laws," which were "likely to be more reliable as to the speed of the automobile than the conjectural statement of an eye witness or the interested statement of a chauffeur."

In more recent years, several state supreme courts have upheld the validity of radar evidence of excessive speeds.



ABOUT  
THE  
AUTHOR

Thirty-five years ago this February 2, at a service station in Dayton, Ohio, gasoline containing "Ethyl" antiknock compound went on sale for the first time. Less than four months later, a spectacular public demonstration of the new additive's effectiveness took place when it was used in the fuel that carried Thomas W. "Tommy" Milton to victory in the 500-mile Memorial Day race at Indianapolis.

In the accompanying article, Mr. Milton tells how "Ethyl" antiknock compound helped him win that thrilling contest.

Tommy Milton is one of the world's great racing drivers. In three of six polls conducted in recent years he was named the No. 1 all-time driver, and in the other three he was ranked second.

Born in St. Paul, Minn., Mr. Milton began motorcycle racing in 1909 at the age of 16. Four years later, he launched his fabulous automobile racing career. In winning the Memorial Day event at Indianapolis in 1923, he became the first two-time victor in that sports classic.

Mr. Milton retired from racing in 1925 and became associated with the Packard Motor Car Company, where he held several positions. In 1938, he formed the Milton Engineering Company which he still owns and directs, besides serving as a manufacturer's agent. His office and home are in Mt. Clemens, Mich., about 25 miles northeast of Detroit.

A great racing driver recalls how  
"Ethyl" fluid helped him to victory  
in its first spectacular public display

By Thomas W. Milton

WELL—AND FONDLY—do I remember my role in the introduction of "Ethyl" gasoline. I was one of the first people to drive a motor vehicle powered by fuel improved by "Ethyl" antiknock compound. I drove my car to victory in the 1923 500-mile race at Indianapolis with "Ethyl" fluid.

It was 35 years ago now—and time can play tricks on the memory—but I think that my entry in the 1922 race also ran on fuel containing "Ethyl" fluid. If that is right, I was perhaps the first person outside the laboratory ever to drive a car—racing or otherwise—on "Ethyl" gasoline.

I seem to recall that sometime shortly before the 1922 Memorial Day race, Charles F. Kettering came down to the track at Indianapolis. ("Ket" was no stranger to me, even then—I had known him for about ten years. We had met through Carl Fisher, who built the Indianapolis Speedway.)

"Ket" had two containers with him. In one was tetraethyl lead and in the other was another anti-

knock agent—I don't recall what—that he and Tom Midgley had developed in Kettering's laboratory in Dayton, Ohio, during the search for a successful antiknock compound.

As I say, I believe that I used "Ethyl" antiknock compound in my fuel in the 1922 Indianapolis event. But I can say definitely that it was in the fuel that powered my 1923 race car.

Maybe the people at Ethyl are just as happy that I can't remember 1922 very well, because I had no opportunity in that race to show just how much their product improved vehicle performance.

I had won the 1921 race with a 183-cubic-inch Frontenac engine designed by the noted Louis Chevrolet and C. W. Van Runst. But the 1922 race was an entirely different story.

Hoping to repeat my victory of the preceding year, I had a new car built in California. But after less than 100 miles, the gasoline tank shook loose. We managed to keep it in place by strapping it to the car, but I never had a chance after that. Although I continued in competition for several laps before dropping out, it was only to experiment with my car.

Things looked brighter as I prepared for the 1923 Indianapolis 500. I was to drive an H. C. S. Special, named for the builder, Harry C. Stutz of the famous Stutz automobile manufacturing family. The engine had only a 122-cubic-inch displacement.

### One-Man Cars

This was the first year that race rules called for one-man cars. Previously, most racing cars were equipped with seats for both the driver and his mechanic. The latter rode along as a "pumper"—to maintain oil pressure and air pressure in the fuel tank—and to convey information to the driver.

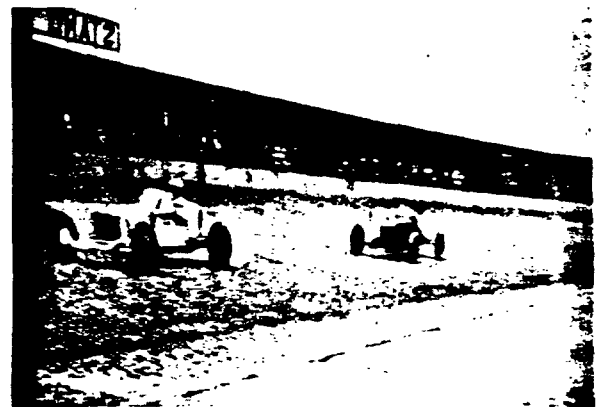
But by 1923, the oil and air pressure were handled mechanically. About the only function a riding mechanic then served was to be a lookout to tell his driver what other cars in the race were doing. It was an added penalty to make the cars carry the weight of the mechanic-lookout when a rear-view mirror would do almost as well.

Several weeks before the 1923 race, Kettering visited the track with some black metal containers. They contained "Ethyl" antiknock compound, the product that was being used with commercial success in gasoline on sale at several service stations in Ohio. Would I, Ket wanted to know, like

to try the additive in my fuel? He felt certain it would be to my advantage to do so.

He was so right! In the qualifying heats for the 1923 race, I used a fuel containing "Ethyl" antiknock compound and set a new track record. Then I won the race itself, turning in the second fastest average speed in the track's history—90.95 miles an hour.

That's considered slow on the track today, of course, in view of the 135 mph average that won the 1957 Indianapolis event. But 34 years ago 90 miles an hour was really burning up the track. —

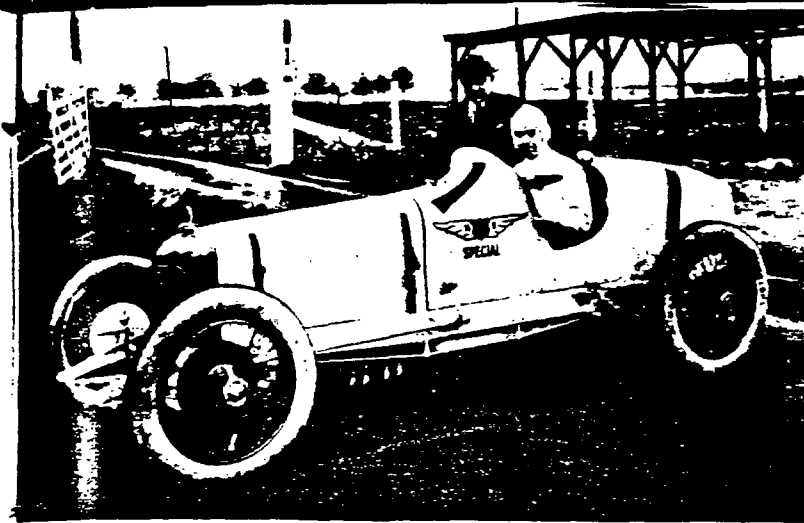


Hard pressed by another contestant, the author flashes past the grandstand at the Indianapolis Speedway.

I'm sure that my 1923 entry realized greater power and performance than it would have if "Ethyl" fluid hadn't been in the fuel. But the big plus factor of the antiknock compound was that it enabled us to jack up the compression ratio of my racing car. I don't remember the figures exactly, but I'd say the compression ratio of my ill-fated 1922 car was about 6 to 1. Certainly it was no more than 6.5 to 1.

With "Ethyl" fluid added to the fuel, we were able to go up to 7.5 to 1 with my 1923 engine. We increased the compression ratio a full number after our experience in the qualifying heats demonstrated that "Ethyl" fluid in the fuel made this possible.

The fuel I used in 1923 was a special blend of gasoline and benzol, either in a 50-50 proportion



Before the start of the 1923 Memorial Day race in which he demonstrated the effectiveness of "Ethyl" fluid, Tommy Milton poses at the wheel of his H. C. S. Special with Harry C. Stutz, the car's builder.



or two-thirds gasoline and one-third benzol. The Richfield Oil people did the blending, but I added the "Ethyl" fluid to the fuel myself right at the track.

As it turned out, my car needed all the extra help it could get in that 1923 race. I don't know whether any of the other drivers had the benefit of "Ethyl" fluid or not, but three or four of them sure pressed me in the competition. (EDITOR'S NOTE: *Ethyl Corporation believes that the drivers of at least the cars that finished second and third behind Milton also used fuel improved by the antiknock compound.*)

#### A Real Battle

For the first 150 miles, it was a real ding-dong battle between Jimmy Murphy, Howdy Wilcox and me, with the lead changing hands 11 times. Wilcox was eventually forced out by a broken clutch and Harry Hartz finally passed Murphy to finish second. Murphy ended up in third place.

In winning the 1923 event, I became the first

driver to take the Indianapolis 500 crown more than once. But then, the combination of an excellent engine, as well designed car and the best in fuel (EDITOR'S NOTE: *And an experienced driver*) is hard to beat any time.

Naturally, I wanted to win the Indianapolis race a third time if I could, so I tried again in 1924. But it just wasn't to be. I had to quit the race after 110 laps because of a broken valve spring. Not only did that spell the end of the race for me, but it also signalled the end of my automobile racing career. I decided to call it quits after some 15 years of top-notch competition in both the United States and Europe and settle down to a career in industry.

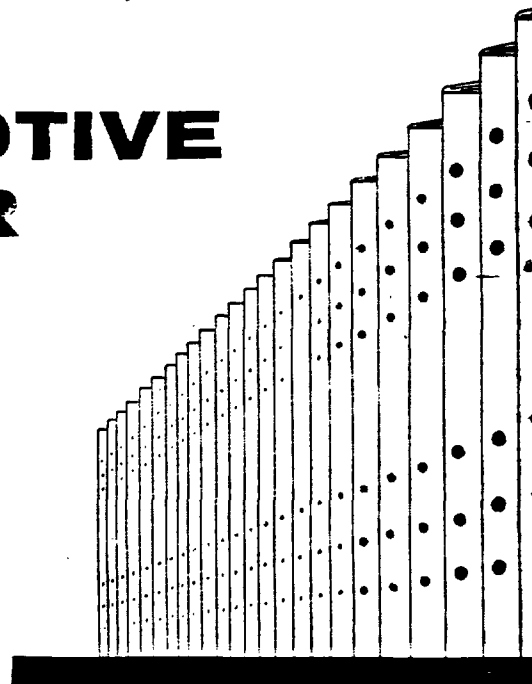
I had more than my share of thrills and honors in the racing world, and for them I am grateful. I also am grateful for the opportunity I had to share in several developments on the track—especially the introduction of fuel improved with "Ethyl" anti-knock compound. #



"You're now leading the field by two minutes and five seconds," Milton's pit crew tells him at one point in the thrilling contest.

Marking its silver anniversary, this publication is a widely used . . .

# AUTOMOTIVE ANSWER BOOK



**T**WENTY-SEVEN YEARS AGO in 1931, a small booklet containing information on engine specifications and characteristics of then current passenger cars, rolled off the presses in Detroit. Designed solely for use by Ethyl Corporation personnel, only 500 copies of the first edition of "Brief Passenger Car Data" were printed.

This February the twenty-fifth edition of the booklet (none were issued in the war years of 1943-44-45 when no new models were manufactured) is being published. More than 250,000 copies are being made available as a service publication to people in the oil and automotive industries. To mark its quarter-century anniversary, the booklet's cover will be silver instead of the usual light gray.

## Packed with Information

The popularity of the publication is easily explained. Presented in a handy pocket size, it is packed with a wealth of factual material about automobiles that is readily available in no other single source. It is of value as a reference book to sales, service, marketing and research personnel of the oil and automotive industries.

Contained in the booklet is basic information on every make and model of U. S. passenger car in

production. It gives such facts as AMA horsepower, compression ratio, spark plug gap and firing order, and oil, water and gasoline capacity. In all, some 40 vital details are enumerated for every model.

"Brief Passenger Car Data" is prepared by the Ethyl Corporation Research Laboratories in Detroit, the automobile capital of the world.

More than 100 calls and visits to manufacturers are made by Ethyl representatives during the course of a year to obtain information and to keep up to date on last-minute changes in engine design or structure. The high degree of accuracy maintained through the years in this booklet is a tribute to these men and the cooperation of the sales, service and engineering personnel of automobile manufacturing companies.

The booklet has served as a brief chronicle of many remarkable accomplishments in the field of fuel and automotive progress. One of the most striking advances is found in the rise of average compression ratios of engines along with a corresponding increase in the antiknock quality of gaso-



line. In 1931, the average compression ratio was 5.23; in 1958 it is about 9.47. In the same period the average research octane number of regular gasoline rose from 63 to 91 and that of premium grade from 75 to 98, with several grades of premium available at 100 octane number or higher.

#### Cars Come and Go

Looking back over the history of the booklet it is interesting to note how many automobiles have come and gone from its pages—and from the American scene.

Seventeen of the 30 makes of cars which were included in the first issue have since been discontinued by their manufacturers—the *Auburn*, *Cord*, *Dusenber*, *Cunningham*, *Durant*, *Essex*, *Franklin*, *Graham*, *Hupmobile*, *Jordan*, *Marmon*, *Oakland*, *Peerless*, *Pierce*, *Reo*, *Stutz*, and *Willys-Overland*.

Since 1931, manufacturers have introduced 13 new makes of cars. They are the *Terraplane*, *Lafayette*, *Austin* (American), *La Salle*, *Rockne*, *Continental* (offered in 1933 by Continental Motors

Corporation) *Kaiser*, *Henry J*, *Continental* (by the Ford Motor Company), *Mercury*, *Edsel* and *Rambler*. Of these cars, only the last four listed are in production today.

"Brief Passenger Car Data" has undergone many changes since its inception. New sections added to it through the years include one on spark plug heat ranges; charts showing trend in antiknock quality for premium and regular gasoline; and descriptions of the various automatic and semi-automatic transmissions available in late model cars.

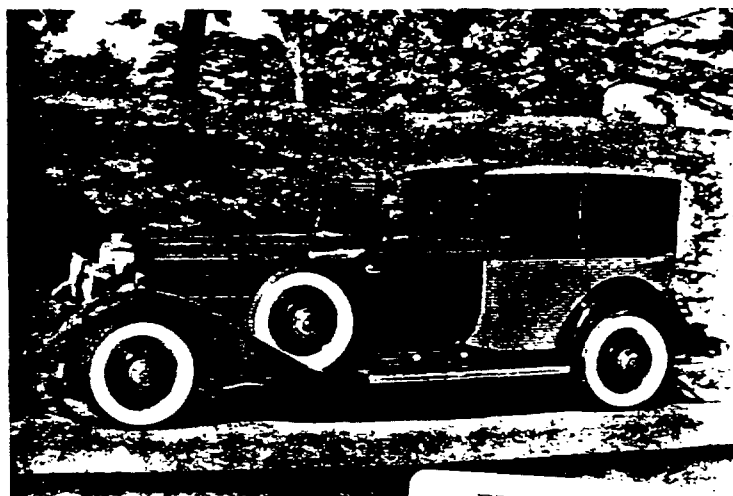
Originally the booklet was titled "Passenger Car Specifications and Adjustments," and later "Passenger Cars, Brief Specifications and Adjustments." It was given its present name in 1937.

In 1947, a new cover design was adopted and 135,000 copies were printed that year. Previous printings had never exceeded some 50,000.

Subsequent increases in circulation have been due primarily to increased use of the booklet by oil companies. #



Changes in automotive styling over the years that "Brief Passenger Car Data" has been published are seen in these photos of 1958 and 1931 models.



## B. B. Turner, Company President, Now Chief Executive Officer

B. B. TURNER, president of Ethyl Corporation, has been designated chief executive officer of the Company effective January 1. Edward L. Shea, who formerly was chief executive officer, continues as chairman of the board of directors.

Mr. Turner has been president of Ethyl since 1956, before which he was executive vice president. Mr. Shea was named chairman of the board in 1956, after serving as president since 1947.

Since joining Ethyl in 1946, Mr. Turner has directed much of the Company's expansion of facilities. After serving in the Manufacturing department from 1946 to 1951, he was appointed vice president in charge of research and engineering, a post he held until his promotion to executive vice president in 1955.

Mr. Turner is a native of Angleton, Texas, and a graduate of Rice Institute.



B. B. Turner

## O. B. Lewis and H. J. Philp Named to New Ethyl of Canada Posts



Oscar B. Lewis

OSCAR B. LEWIS, vice president of Ethyl Corporation of Canada Limited, has been named to the newly created position of assistant to the president of that Company and H. J. Philp has been elected the Company's vice president in charge of sales. Both promotions were effective January 1.

In addition to his new responsibilities, Mr. Lewis will continue as vice president, a position he has held since the firm's formation in mid-1955.

Mr. Philp, who has been sales manager of Ethyl of Canada since July 1956, succeeds Mr. Lewis in the sales vice presidency.



H. J. Philp

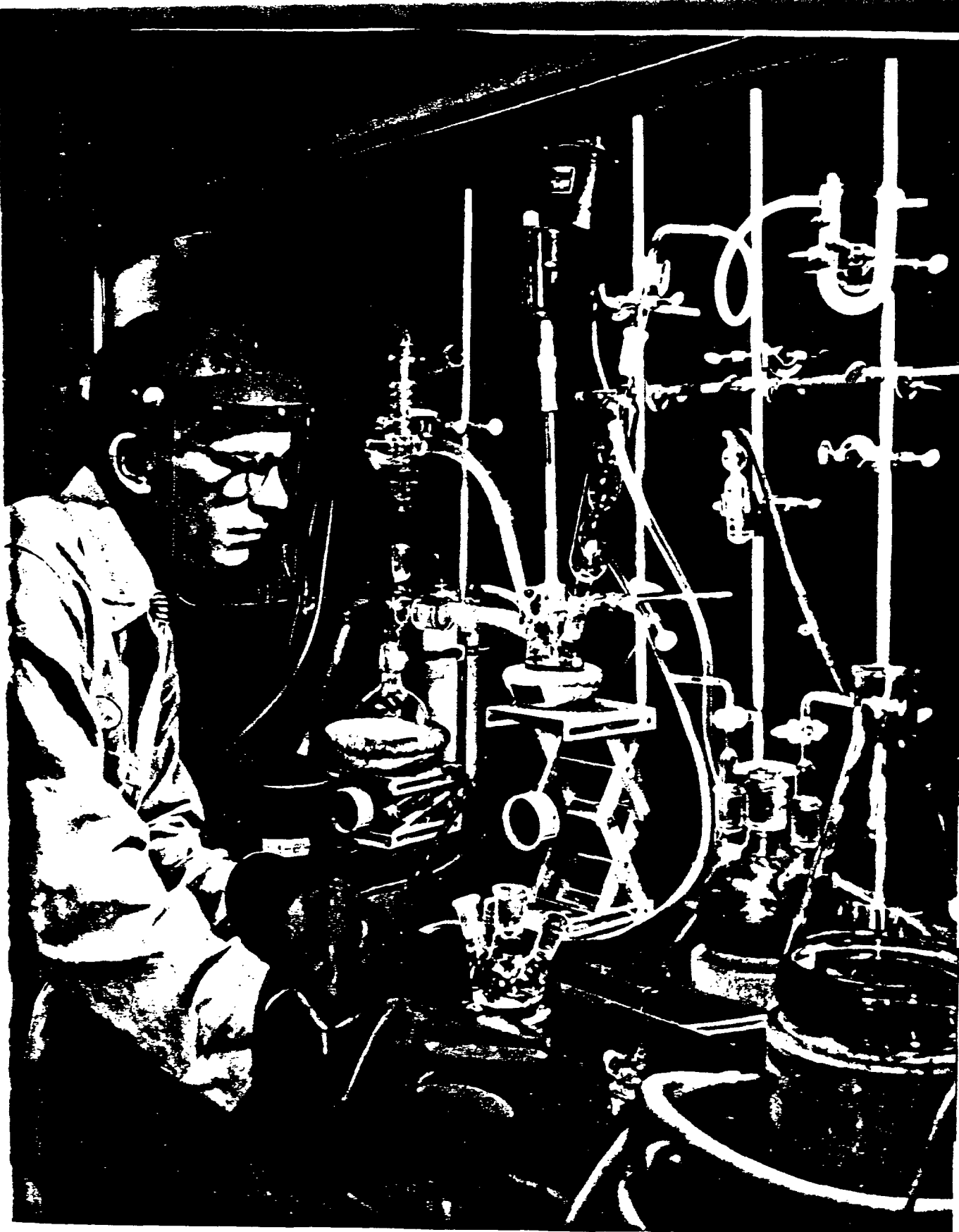
## W. K. McCulloch Fills Newly-Created Sales Position

W. K. MCCULLOCH, assistant manager of advertising and sales promotion, has been promoted to the newly-created position of assistant to Ethyl Corporation's vice president in charge of sales. In his new capacity, Mr. McCulloch will be responsible for the planning and development of future sales programs for existing as well as potential new products. His duties will also be to coordinate this long-range sales planning with other departments of the company.

Mr. McCulloch has been engaged in sales, advertising and sales promotion activities since joining Ethyl in 1932. He was named sales promotion manager in 1948 and assistant manager of advertising and sales promotion in 1952.



W. K. McCulloch



With so many Ethyl contributions to better fuels and engines originating from research, this Company chemist at work symbolizes continuing progress.

ETC 30806

# Your car makes this a Magic Circle

Discover the mapful of fun that's around  
you anywhere you live (and drive) ...  
just set your course by car



**Swing a partner.** Swing out of your driveway and you'll find your Magic Circle is full of many kinds of fun like this, just a few, quick, comfortable car miles away.



**Good eating, too,** starts with your car. Sit back and enjoy the chef's specialty at your favorite country inn. Or simply set out to discover the undiscovered.



**Renew old friendships.** Your car can be your way to warm hospitality. Make that long-overdue date to share old memories or to create a few for the future.



**Discover the rich experience** a winter sunset can be. Get out and enjoy the beauty winter brings to so many scenes, any day in your Magic Circle.



DRIVE MORE ...  
IT'S FUN TO EXPLORE  
YOUR MAGIC CIRCLE



**ETHYL CORPORATION**  
New York 17, New York

Manufacturers of "Ethyl" antiknock compounds ... used by oil companies everywhere to improve their gasolines and your driving pleasure

ETC 30807

# ETHYL NEWS

MARCH-APRIL 1958



In this issue: **A New Concept of  
GASOLINE PROGRESS**

ETC 30808

# ETHYL NEWS

MARCH-APRIL 1958

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ETHYL NEWS



A New Concept of  
GASOLINE PROGRESS

**THE COVER:** The efficiency and comfort of the cars traveling this Massachusetts highway, like those everywhere, are a tribute to the oil and automotive industries. A realistic and meaningful standard for evaluating their performance is presented in "A New Concept of Gasoline Progress," starting on page 1.

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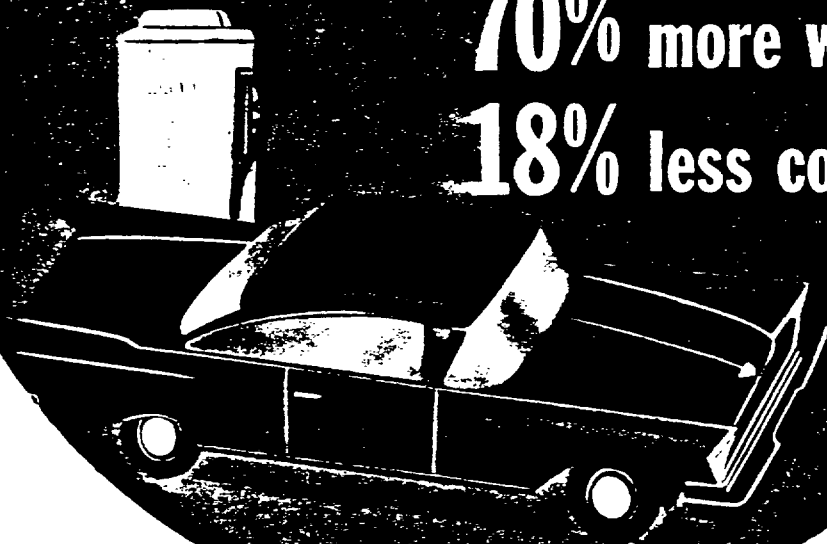
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# A NEW CONCEPT OF GASOLINE PROGRESS

70% more work  
18% less cost



**The ton-miles yardstick provides a realistic measurement of fuel performance**

**D**ESPITE WHAT THE OIL INDUSTRY KNOWS is tremendous progress in the quality and performance of all of its products, one of the industry's big problems is to explain in terms that are meaningful to the motorist the real value of modern gasoline.

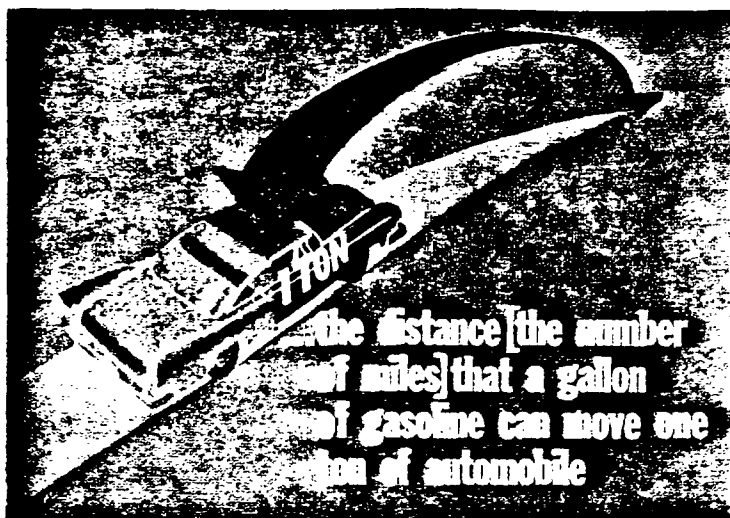
The seriousness of the problem is pointed up by the findings of a recent survey. Over 50 percent of the people interviewed in the survey stated that they were not aware that any improvements had been made in the quality of gasoline over the last five years. Even more startling was the observation by 74 percent who felt that the price of gasoline had

risen more in the last year or two than any other widely used item—except haircuts and hairdos.

Here is what happens. The average motorist buys a modern motor fuel, puts it in a modern car, and sometimes gets less mileage than he expected. The true value of modern gasoline is not apparent under these circumstances.

For years the public has measured the performance of gasoline in miles per gallon. Only rarely is it measured accurately or with real meaning in relation to other cars.

Gasoline mileage in any car depends on the car's



Definition of a ton-mile.

design, its maintenance and where or how it is operated. Driving at very high speeds or under poor road conditions can reduce mileage just as can driving in mountainous country or the stop-and-go conditions of suburban traffic.

To measure fuel and engine progress fairly and present it to the motoring public in readily understandable terms, a realistic yardstick is needed. One such yardstick is "ton-miles per gallon."

#### Allows for Weight Differences

"Ton-miles per gallon" is the distance—the number of miles—that one gallon of gasoline can move one ton of automobile.

This yardstick makes allowances—as it should—for differences in weight between various contemporary automobiles, as well as allowances for the great increases in weight that have occurred over the years since the public has demanded heavier, more luxurious cars.

The Model T Ford, for example, weighed less than 1,700 pounds. Its 1958 counterpart weighs 3,400 pounds—twice as much. Even among current models, there are wide variations in weight. This is why a standard such as ton-miles per gallon is needed to compare fairly one car's mileage performance with another's, and to measure gasoline performance realistically.

Each year since 1930, various automobiles of all makes have been tested and the average number

of miles that one gallon of gasoline could move one ton of automobile has been determined accurately.

There are many periods over which progress could be measured, but 1930 was the first year for which complete mileage data were obtained for all cars.

Back in 1930, one gallon of gasoline could move one ton of 1930 automobile an average of 29 miles at 40 mph. By 1957, one gallon of gasoline could move one ton of automobile nearly 44 miles at the same speed. That is a 52 percent improvement—due largely to efficient high compression engines made possible by improvements in gasoline quality.

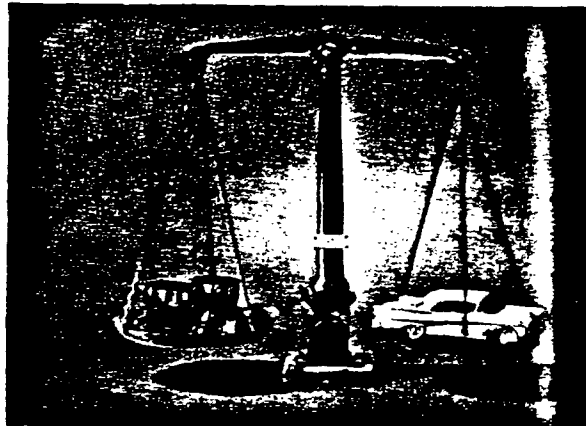
#### More Impressive Story

When the ton-mile principle is applied, not to new cars built in 1930 and 1957, but to the average car on the road during those years, the story becomes even more impressive. After all, gasoline consumption is determined by its use in all cars—not just the new models of any one year.

It is estimated that the average car in use in 1930 provided about 25 ton-miles per gallon. Today, the average car on the road gets an average of 43 ton-miles per gallon—an improvement of 70 percent!

Of course, no one drives at a constant speed of 40 mph, and the ton-miles per gallon performance of an individual car in over-the-road driving is usually less than that at a constant speed of 40 mph. However, the percentage improvement in over-the-road mileage since 1930, when adjusted

The ton-miles yardstick makes allowances for increases in car weights over the years.

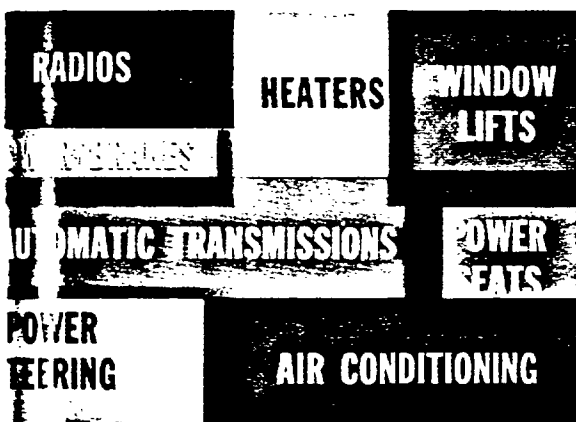


for weight, correlates within one percent with the 40 mph data. Therefore, no matter what mileage the individual driver now enjoys in his own car, it is proportionately better than it would be had this progress never occurred.

A 70 percent improvement is real progress and a great tribute to the oil and automotive industries.

It is particularly impressive when it is realized that the available horsepower of passenger cars has more than doubled just since 1952. This has given the American public a new level of safety for meeting the conditions of modern driving.

Besides, gasoline now provides energy for so many convenience accessories, such as automatic transmissions, power brakes, power steering, air conditioning and super generators. Some of these accessories were not even available ten years ago.



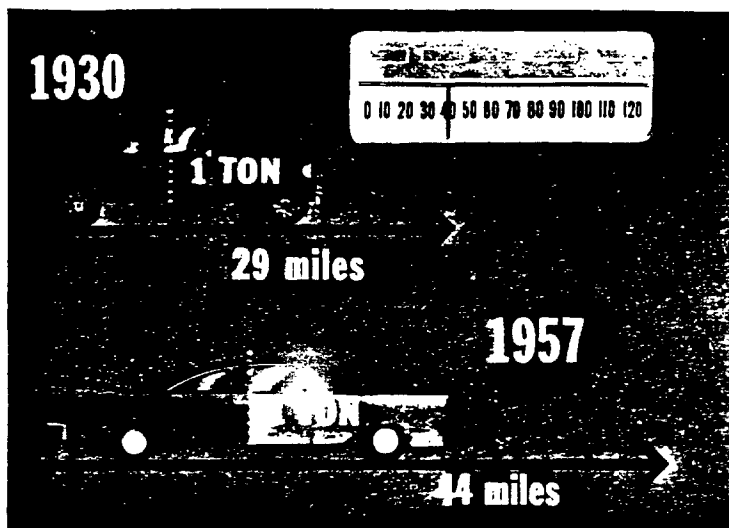
Besides powering the car, gasoline now also provides energy for many accessories.

Yet every one of them operates indirectly from the gasoline tank.

Since 1930, the oil industry has had to earn or borrow tremendous sums of money for equipment to increase both the quality and quantity of gasoline. And in back of this progress is competition—more than 200 gasoline manufacturers striving for more business by trying to provide the best possible quality at the lowest possible price.

With 1930 as a starting point, it is revealing to look at the change in the quality of gasoline as indicated by its octane number.

This was the gasoline market in 1930: About 88 percent regular at 63 Research octane number and 12 percent premium at 73 octane. Combined on a

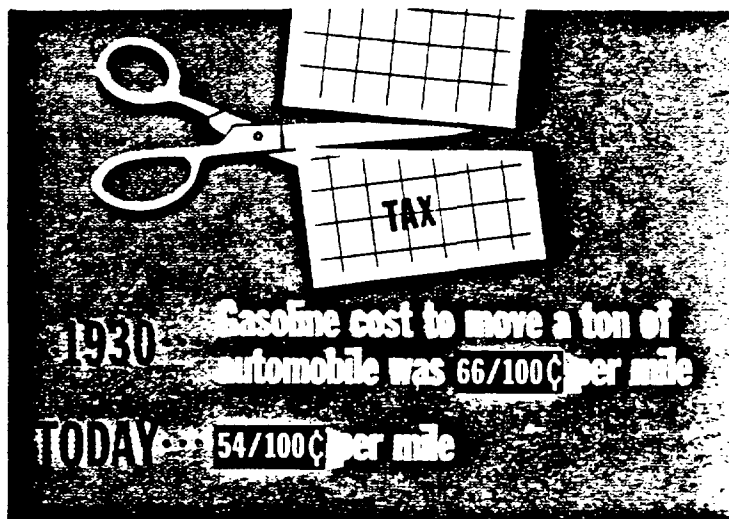


The ton-mile performance of gasoline has risen sharply over a 27-year period.

weighted basis they produced an "average" gasoline of 64 octane number.

Today the gasoline market consists of about 68 percent regular gasoline at 91 octane number and about 32 percent premium gasoline with an octane number of about 98. Combined, the resulting "average" gasoline is over 93 octane. This is an improvement of 29 octane numbers over the average gasoline of 1930, and octane number is only one of the ways gasoline has been improved.

Now consider gasoline prices in this same period. Back in 1930, regular grade gasoline sold for 16.2





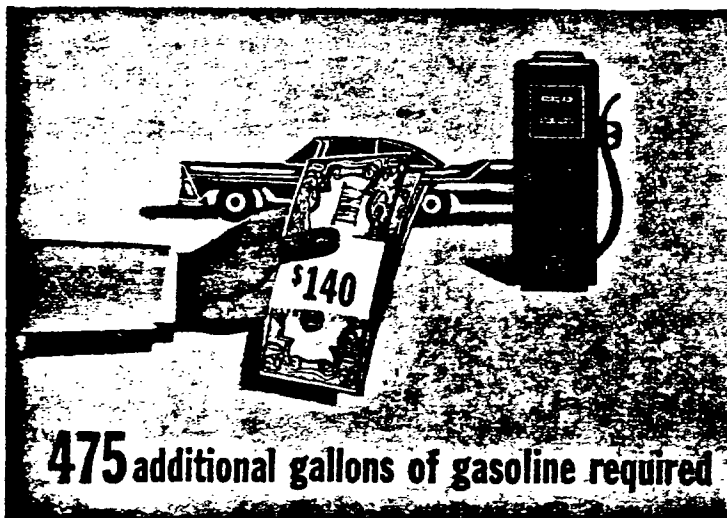
**OCTANE IMPROVEMENT represents conservation of 1½ billion barrels of petroleum per year**

cents a gallon. There was an average tax of 3.8 cents a gallon, resulting in a retail selling price of 20 cents a gallon. Premium gasoline averaged about 3 cents a gallon more.

Today, regular gasoline sells in a normal market at a nation-wide average price of about 22.2 cents a gallon, with premium estimated to average about 2 to 4 cents more. However, gasoline taxes now add nearly 9 cents a gallon.

Performance-wise, modern gasoline in modern cars does at least 70 percent more work than 1930 gasoline did in the average car on the road in 1930. So an allowance should be made for the increased

Without engine and octane improvements, fuel requirements would be much higher.



efficiency of engines by expressing the cost of gasoline on a ton-mile basis.

When gasoline taxes are excluded, the cost for the gasoline to move a ton of automobile one mile in 1930 was about 66/100 of a cent. Today, the fuel cost for recent model cars averages about 54/100 cents per mile. Therefore, gasoline is actually 18 percent cheaper today than it was in 1930—in terms of the work it is doing.

Even when gasoline taxes are included, the cost per ton-mile is still less than it was in 1930—76/100 of a cent today in contrast to 81/100 of a cent in 1930, and this despite a 132 percent increase in gasoline taxes.

With today's high octane gasolines and high compression engines teaming up to provide a 70 percent increase in ton-miles per gallon, they also are conserving gasoline. For without the improvements made since 1930, 25 billion more gallons of gasoline would be required to drive the nation's passenger cars the distance they now are traveling each year. Proportional savings in buses, trucks and gasoline powered tractors could bring the total to 30 or 35 billion gallons a year.

#### Conservation of Petroleum

Since it takes about two barrels of crude oil to produce a barrel of gasoline, it can be said that engine and gasoline improvements annually account for the conservation of more than 1.5 billion barrels of petroleum—one of the nation's vital resources.

At the consumer level, the savings are equally impressive. Without the octane and engine improvements since 1930, the motorist would have to buy about 475 additional gallons of gasoline each year. At present gasoline prices, it would cost him at least \$140 a year more than at present. This is enough of a saving to provide free gasoline for a trip from Portland, Me., to Portland, Ore., and back again.

Here then, is the new concept of gasoline progress: The ability of gasoline to do 70 percent more work at a saving of 18 percent in cost for the American public. It is a concept that might be adapted in a variety of ways to explain the value of modern gasoline to employees, to dealers and possibly to the general public. #

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# New Life for the Navajos

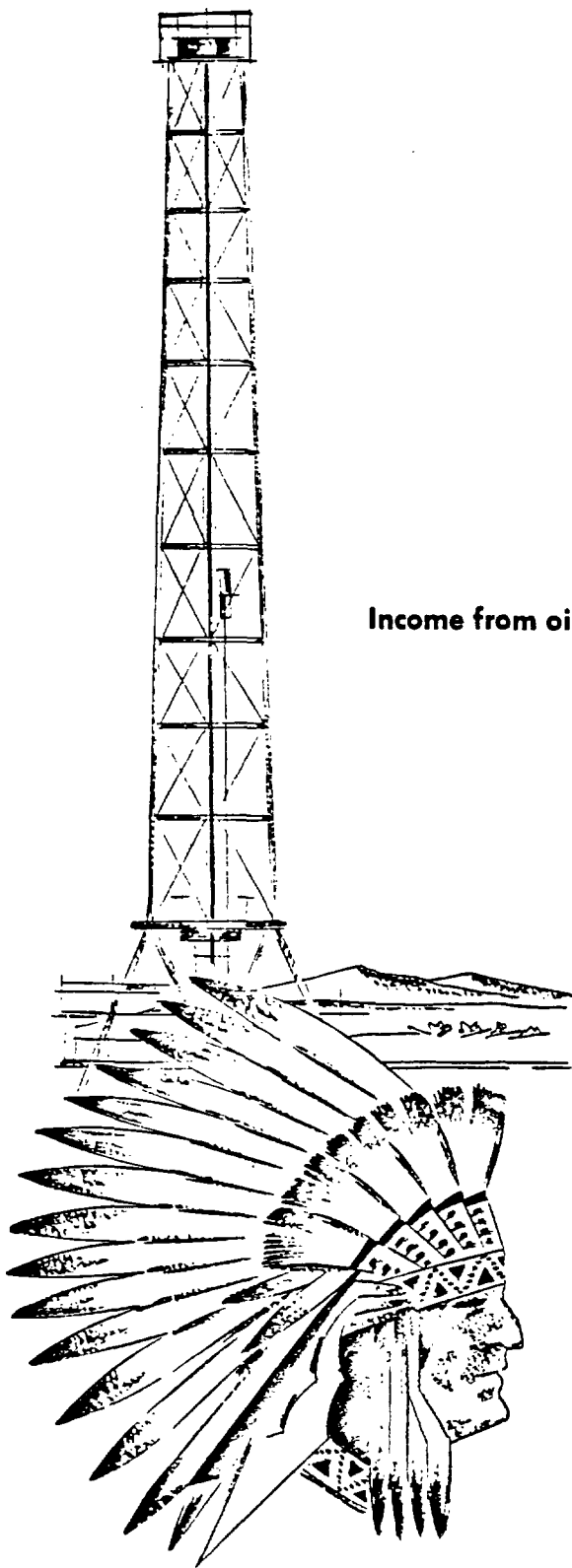
Income from oil production is making great contributions  
to the betterment of this Indian tribe

*By Henry F. Unger*

CONVERSATION THESE DAYS at Navajo Indian powwows has swerved from recounting the deeds of great warriors of the past and reliving yesteryear's hunting expeditions. Today a new theme is uppermost and is being discussed with fervent excitement—oil!

In almost every part of the 16-million-acre Navajo reservation, extending from northeastern Arizona into adjoining parts of New Mexico, Utah and Colorado, native drums seem to be thumping out an optimistic rhythm. Enthusiasm emanating from the well-ordered headquarters of the governing Navajo Tribal Council in Window Rock, Ariz., is rolling like tumbleweed, touching practically all of the 83,000 reservation-based residents.

The reason for this joyful interest is the way in which major oil discoveries underlying this rugged Indian terrain are contributing to tribal coffers. Crude began flowing this winter through the new 600-mile Four Corners Pipe Line from Aneth, Utah, to Los Angeles, financed by Shell, Standard of California, Gulf, Continental, Superior and Richfield. Gulf coast refiners are being supplied by the older Texas-New Mexico line, also fed from reser-



vation wells. It is owned by Texaco, Sinclair, Tide-water and Empire Gas and Fuel.

Although revenue from lease bonuses, rentals, royalties and payments for rights-of-way are increasing reserves in the council's treasury, individual Navajos are not making frenzied treks to Window Rock for personal shares in this bonanza.

Thirsty drills puncturing the scrubby land occupied by the nation's largest surviving Indian tribe are making it possible for the council to provide a \$5 million scholarship fund, \$3 million for water drilling and development and money for road repairs, fencing and a host of other badly needed services and facilities provided by the council for everyone's betterment.

### Additional Income

Lease sales and bids since last December, for oil rights on tribal territory, represent some of the largest negotiations of their kind in recent years. They involved some 370,000 acres. One contract alone has added more than \$2 million to council resources. It has raised Navajo income from oil to more than \$70 million since 1951.

If Congress approves, Navajo oil money will turn into priceless water in the form of a 110,000 acre irrigation project near Farmington, N. M. The tribal council already has taken \$100,000 from its treasury for a six month development effort on 40,000 acres already being irrigated. Oil funds

applied to water improvements are providing employment for thousands of Navajos.

Contributing to the security of many Indians is the quasi Navajo CCC setup made possible by oil revenues. A million dollar appropriation from council funds has put tribesmen to work repairing washed-out highways, building fences and expanding conservation projects.

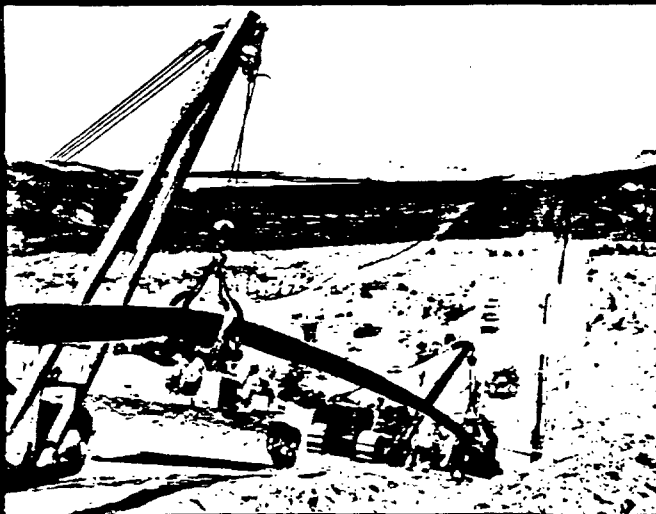
Oil on the Navajo reservation is not entirely new, even if more recent developments promise to eclipse earlier ones. In the early 1920's geologists lured oil out of the ground in the Shiprock area.

Compared with the small flow of petroleum money in those days, however, the tribe's present leaders are assured of a far more substantial income from 43 wells producing as of late last year, plus additional revenue as more successful ones are completed in an area with unknown but potentially enormous reserves.

When Paul Jones, Navajo Tribal Council chairman, considers additional income accruing from oil companies' investments for tapping the reservation's crude, he predicts still more significant benefits for all members of the tribe, long on the verge of poverty.

Greater opportunities for employment, better housing, an influx of new business, new roads and further improvements in tribal agricultural programs are foreseen. As oil revenue increases, some of it may become available to individuals through

The Four Corners Pipe Line, shown here under construction, is now carrying crude from Navajo wells.



All families are expected to benefit from tribal improvements made possible by income from oil.

per capita distribution. But major reservation-wide projects which will contribute to the best interests of all Navajos are first on the tribal council's docket.

That oil bounty will raise the Indians' living standards in a slow but steady manner is evident from what the Navajos are doing to improve their educational stature.

Determined to foster enlightenment and progress in social, political, scientific and humanitarian areas as well as in economic ways, tribal leaders have allocated college and university scholarships to some 250 promising youths for the current academic year. All awards are outright gifts, so that all graduates will leave college free of debt.

### Take Part in Fair

Million dollar smiles were on the faces of council members recently as thousands of Navajos took part in the annual tribal fair. They came in modern cars and school buses, as well as in pickup trucks and wagons. The new oil discoveries and pipelines were uppermost in all minds, as fascinated crowds listened to accounts of recent developments and inspected new machinery which will help bring more prosperity to the reservation.

Before oil companies could penetrate the earth, the tribal council had to grant rights-of-way across reservation lands for pipeline construction. United States government regulations designed to protect the resources had to be met. Studies by the Bureau

of Indian Affairs were completed, as well as related efforts by Navajo attorneys, mining engineers, oil and gas consultants and others. The final step was tribal council approval.

Surveys involved in building the new Four Corners Pipe Line were started more than a year ago. The potential capacity of this feeder to Los Angeles is estimated at 170,000 barrels per day, with all pumping stations installed and operating. Geologists predict that reserves in the Four Corners area should yield at least some 250 million barrels.

In consideration of the tribe's historic past, oil companies building the new pipeline assigned two archeologists to accompany construction crews, so that remains from forgotten villages and camping sites could be recovered and preserved.

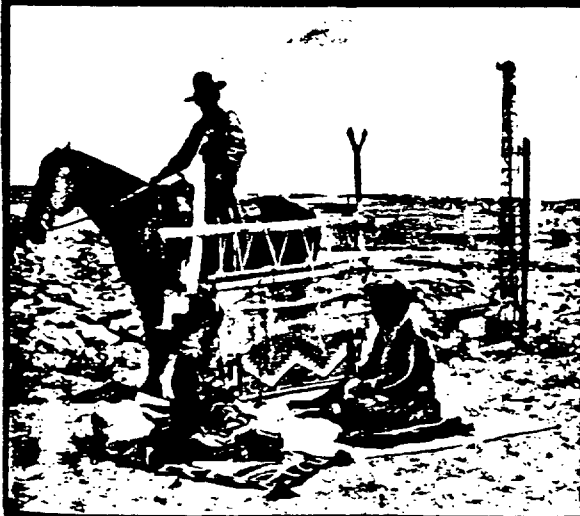
Most Navajos are still occupying earth-covered lodges known as hogans, tending their sheep, riding horses, cultivating the soil, weaving colorful blankets and making hammered silverware, but increasing numbers of them are adopting modern and progressive living and working patterns.

What cheers and comforts this once prosperous tribe even more than initial bounties from its underground assets are the messages of courage and hope coming over the Navajo grapevine—promises of still better living just ahead.

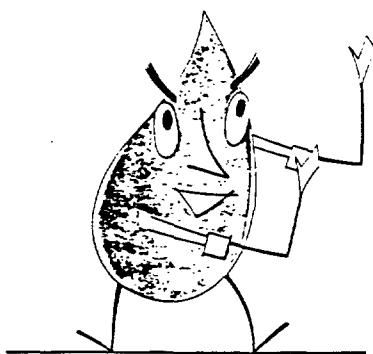
It's all happening because these hardy original Americans are sharing the rewards of a precious black substance—oil! #

An oil derrick, symbol of the new industry, looks down on a mounted Navajo and his family of rug weavers.

Disposition of oil revenues is discussed at well-ordered tribal council sessions held at Window Rock, Ariz.



# Undercover



**New antioxidants work behind the scenes  
to improve engine performance and durability  
by stabilizing fuels and lubricants**

*By J. D. Bartleson and W. H. Hubner  
Business Research, Ethyl Corporation*

**N**EW ADDITIVES for fuels and lubricants, which will help preserve their properties and contribute to better performance and engine durability, are being introduced by Ethyl Corporation.

Classified as antioxidants, the additives are highly aggressive agents for controlling undesirable oxygen accumulations in petroleum and related synthetic products. Reactions of this kind interfere with the maximum effectiveness of fuels and lubricants, since they cause corrosion and excessive wear.

Ethyl's new additives are useful in motor and aviation gasolines, jet fuels, motor oils, automatic transmission fluids and industrial lubricants. Each new product is based on ortho-alkylation, a process discovered and developed by Company scientists.

This approach to the improvement of fuels and lubricants, hinging upon the new Ethyl process, is responsible for the first commercial development of many reactive derivatives of phenol and aniline. These two compounds may become starting materials or building blocks for a huge number of industrial chemicals with many different uses.

## **Six Additives Available**

Six of the additives are available from Ethyl at the present time. Still more are under investigation. Designated as "Ethyl" antioxidants, they each have different but related applications.

"Ethyl" Antioxidant 701, for example, reduces gum formation during the storage of gasoline and jet fuel. By comparative tests, it retards gum accumulation more effectively than certain other antioxidants. It also inhibits decomposition in most kinds of gasoline. Cleanliness is more pronounced in engines using gasolines containing Ethyl's 701.

Most members of Ethyl's antioxidant family are derivatives of this parent product, known chemically as 2,6-di-*tert* butylphenol. Of these additives, "Ethyl" Antioxidant 702 offers particular promise in helping familiar lubricants retain their desired properties. Some 40 oil companies are joining Ethyl in evaluating it.

Because of highly successful preliminary investigations, Ethyl expects that the most widespread use for 702 will be in crankcase oils. As a controlling agent, scuffing-type piston wear is minimized when the product is used alone in lubricating oils or in combination with sulfonate or phenate detergents.

A particularly advantageous property, unequalled by other antioxidants, is the way 702 withstands high temperatures. It has low volatility, does not

Simultaneous study of 12 oil and additive blends is possible with this tester in Ethyl's laboratories.



# Agents

create sludge or varnish, and is remarkably stable.

Striking results similar to those occurring with 702 in lubricating oils have been found when the compound is added to automatic transmission fluids. Here, besides inhibiting oxidation, "Ethyl" 702 not only prevents excessive viscosity, but improves the cleanliness of transmission parts.

Other uses for the additive are seen in railroad diesel lubricants and in oils for heavy mechanized equipment like steam turbines, bulldozers, cranes, drilling rigs and circulating systems.

An additional "Ethyl" antioxidant is 703, effective under moderate temperature conditions, specifically in greases for machinery operating at comparatively slow speeds. It reduces changes in chemical and physical properties during storage and use and acts as an anti-rust and anti-wear agent.

Under extreme temperatures and more severe operating conditions, "Ethyl" Antioxidant 712 checks decomposition in lubricants.

## Aids Jet Planes

"Ethyl" 725 has valuable potentials in improving the performance of jet aircraft. It is an unusually effective high temperature fuel antioxidant, designed to reduce such problems as filter plugging and heat exchanger tube fouling.

More recently, another product, "Ethyl" Antioxidant 733 has been introduced, with applications similar to those of 701. Tailored especially for maximum effectiveness in gasolines, the compound is a particularly active anti-gum agent and stability improver for high octane fuels during storage. When 733 is added to gasolines, engine cleanliness is exceptional under most conditions. Its use offers substantial cost savings.

Although confident that these six new antioxidants will win distinctive spurs in the oil industry and those it serves, Ethyl is concentrating, too, on antioxidant additives which will bring more desirable properties to end-products like plastics, rubber goods, pharmaceuticals, foods and perfumes. Such potential applications are among those being explored vigorously in Company laboratories. #



The new "Ethyl" antioxidants are useful, among other places, in aviation fuels . . .



. . . in automotive gasolines, crankcase oils and transmission fluids . . .



. . . in railroad diesel engine lubricants . . .

. . . and in reducing gum formation and decomposition in petroleum products in storage.



A MAN DASHED OUT of his house one morning, so the story goes, hailed the approaching bookmobile and shouted, "Quick, give me a book on plumbing!"

"Sorry," came the reply from the librarian, "we don't have any, but I'll bring one along next week."

"Never mind," the man groaned, "my stopped-up sink has already overflowed into the basement."

This incident may not be true, but it illustrates several things about these traveling libraries, which have become so much a part of the American scene. First, a great many people depend on them. Second, there's an informal friendliness between librarians and bookmobile users. Third, if the bookmobile doesn't carry a certain volume that's wanted, attendants will be glad to bring it the next time.

### Millions of Volumes Circulated

Today, more than a thousand mobile libraries travel the highways and byways of the United States, bringing reading pleasure to people who are unable to reach conventional, permanent libraries. No one knows precisely the number of volumes circulated annually in this way, but it runs well into the millions.

The history of bookmobiles is obscure and sketchy. They are not, however, a 20th century

phenomenon. Early in the 19th century, Oxford University in England sent out traveling libraries.

In 1893, a few books were mailed to rural communities from the New York State Library at Albany. These volumes were loaned for six months. By 1904, this practice prevailed in almost every state. Credit for refining this innovation into traveling libraries is given to Mary L. Titcomb of Hagerstown, Md., who in 1907 pioneered with the first horse-drawn book wagon in this country.

Among the foreign countries served by bookmo-

# Books on the Run



With shelves on the outside (left) as well as on the inside (right), some modern bookmobiles can carry as many as 5,000 volumes. They are popular with readers in both city and country areas.



**Traveling libraries provide  
reading material for an ever-  
widening circle of readers**

biles are England and New Zealand. In Norway, book-boats are used to cross fjords.

But it is probably in the United States where automotive progress and an insatiable desire to read—despite the inroads of television—have combined to make libraries on wheels so popular.

The first gasoline-driven bookmobiles in the United States were half-ton trucks, converted into traveling libraries before World War I. Volumes were carried on shelves attached to the inside of doors opening at the back of each truck. During the early 1920's, as larger models with outside shelves evolved, New York City and Evanston, Ill., pioneered in extending regularly scheduled routes.

#### **First Unit on Tour**

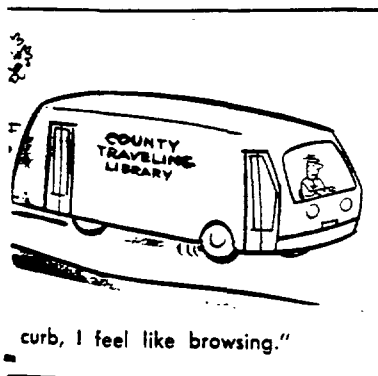
In 1929, a group of publishers and booksellers sponsored the first automotive unit designed and built especially as a bookmobile. Incorporating the best ideas of the times, it was sent on a cross-country tour to demonstrate its usefulness.

Today, the most modern bookmobile ranges in weight from seven to 11 tons unloaded, and can carry up to 5,000 volumes. Usually it has shelves on the outside as well as on the inside. A gasoline-powered engine generates electricity for lighting.

But whether it is the latest kind of special vehicle or a converted station wagon or sedan, there is one thing all bookmobiles serving city or country dwellers have in common. And that is bringing reading pleasure and enlightenment to thousands of people everywhere who otherwise might be denied good books. #



No recent innovation, libraries on wheels have been serving readers since early in the 20th century.



# Power in Small Packages

**Gasoline engines of limited size are doing bigger and better jobs than ever**

*By Stanton P. Nickerson*

**A**S THE GREEN BELT of spring moves northward, no one relaxes more with the change in season than the owners of close to 14 million gasoline-powered lawnmowers and gardening tools.

These devices mean freedom from hours of back-breaking toil. They reduce the tedium of property care to guidance of easily-operated machines. Many businessmen find that their gasoline-powered equipment at home helps insure additional leisure hours to enjoy favorite recreational activities.

For domestic purposes, the number of powered lawnmowers far exceeds any other kind of handy apparatus driven by gasoline, but these familiar units represent only one use for the amazingly versatile small engine. Its applications have been increasing by leaps and bounds.

## **Rotary Saws Speedy**

When a storm blocks streets with fallen branches or trees, for example, highway crews need only a single-cylinder engine to push a rotary saw through the toughest wood as easily and quickly as a hot knife slices butter.

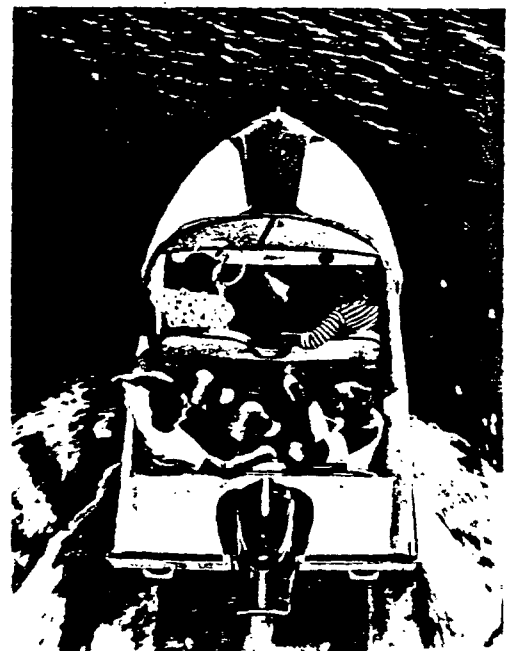
Wherever new buildings are under construction, there are myriad pieces of small equipment that use gasoline-powered engines. Among them are efficient concrete mixers, pumps, conveyor belts lifting bricks, and portable welding units.

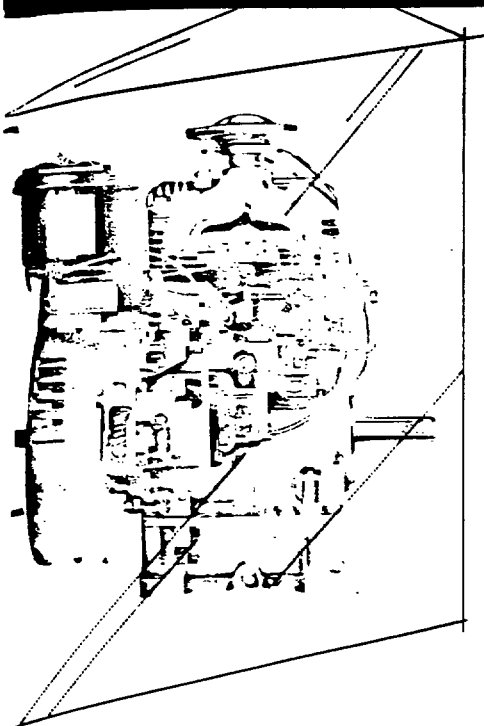
Leisure time afloat is more enjoyable because of more than five million outboard motors.

Compact but efficient two or four cycle engines on the farm are as much a part of agriculture's mechanized equipment as heavier tractors, cultivators and harvesters of multiple horsepower.

Small units are ideal for picking such crops as spinach and peanuts, and are used to bale hay, prepare mulch, remove stones from fields being cultivated, dry grain and not only supply irrigation systems with water, but dig the necessary ditches. Other motorized devices fill the highest silos easily.

These are among the hundreds of uses for some 25 million small gasoline engines, which have been added to the nation's mechanized resources during





the past five years. They are becoming increasingly essential whenever there is a need for dependable power in economical packages of minimum weight and bulk.

Lilliputian in size as compared with their automotive cousins, "small" gasoline engines have from one to four cylinders, and from about one to approximately 36 horsepower. With the exception of outboard motors and those on certain water pumps, most small engines are air cooled.

Designing, engineering and manufacturing ingenuity are primarily responsible for gearing the small gasoline engine to so many applications. At



Regardless of lawn size, more people than ever find grass cutting easier and quicker with power mowers.

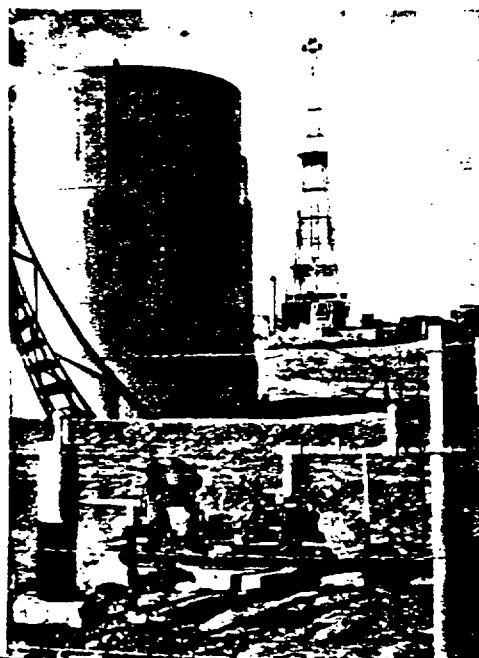
the same time, improved fuels and lubricants are also major factors in the utilization of close to four million new units annually.

Although they require little gasoline individually, their cumulative annual consumption is of increasing interest to oil marketers. Virtually all small types are designed to operate satisfactorily on regular grade automotive fuels, with noteworthy reliability under a variety of conditions.

#### Different Loads

An engine on a chain saw or a lawnmower, for example, is subjected to fluctuating loads comparable to those experienced by automotive engines. On the other hand, an engine which drives a generator or pump frequently operates under severe conditions of constant speed and high loads for long periods. Outboard motors are expected to respond properly to abrupt and often extreme changes in acceleration.

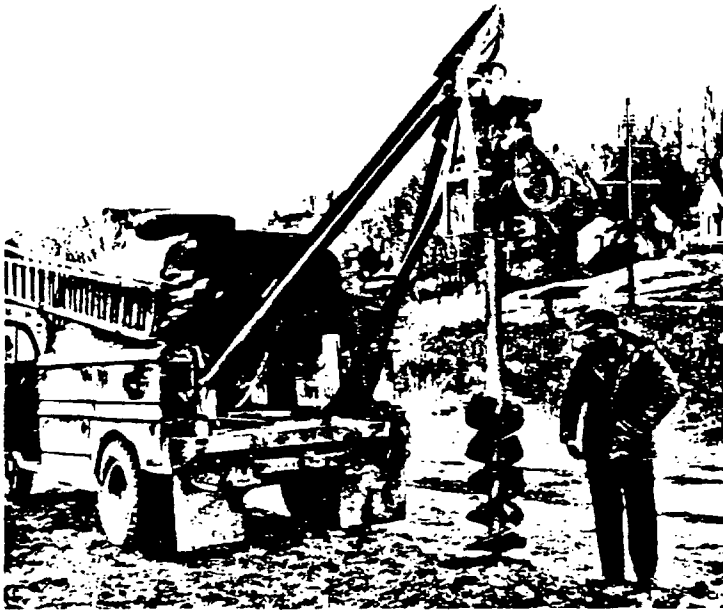
As part of its multiple services to the oil indus-



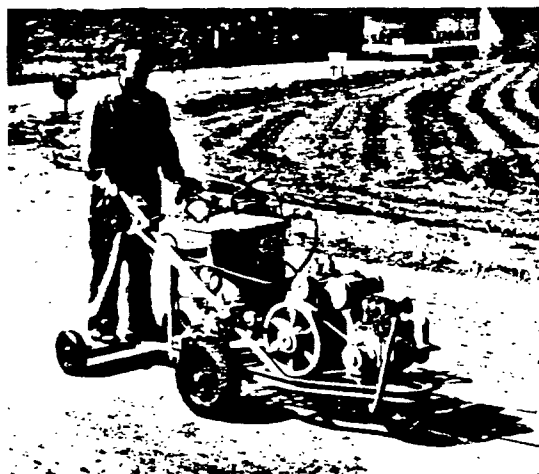
Uses for small gasoline engines include pumping crude and circulating oil at tank farms.

try and others concerned with continued progress in fuel-engine relationships, Ethyl Corporation works closely and cooperatively with small engine companies to help them overcome problems in design, durability and performance.

Among the Company's contributions is assistance in creating a type of spark plug with high resistance to fouling. Durability problems have been studied and mechanical changes suggested to



Above, drilling equipment, driven by a compact engine, expedites erection of utility poles. Culverts under highways are built by boring horizontally. Below . . . this power-driven mechanism needs only manual guidance as it paints lines indicating traffic lanes.



engine manufacturers by Ethyl after laboratory investigations.

In broader ways, Ethyl keeps small engine manufacturers informed of developments in gasoline refining and lubricants which would affect these companies' interests.

In studying engine usage, it is found that more small gasoline engines are used in agriculture than for any other purpose. In addition to units for soil cultivation and automatic planting, there are weeders, insecticide sprayers and harvesters.

Livestock care is simplified by another gasoline powered unit which mixes and pours feed into troughs. Frost is kept from damaging citrus groves by small but powerful engines whirling giant fans.

Compact engines of different sizes are taking over scores of industrial jobs. Motorized scooter-loaders quickly pick up and carry heavy materials across large plants. Men at work on utility lines are lifted to desired heights by elevating towers.

#### Start Big Diesels

Without their single cylinder gasoline starters, many gargantuan diesel engines which industry uses could not be operated. Other small units run pumps, dig pipe and cable ditches, drill holes for posts and peel bark from logs at saw mills.

Oilmen are familiar with rugged gasoline equipment of low horsepower which drills shallow wells, lifts crude to the surface or circulates petroleum products at tank farms. Exploration crews use small amphibious tractors to slosh through swamps. Ingenious powered mechanism wrap protective materials around pipelines.

Sub-freezing temperatures are maintained inside large trucks carrying perishables because small gasoline engines run refrigeration systems so capably. Air for tires at some service stations and for other purposes comes from compressors operated by small engine-pumps.

Highway jobs simplified and expedited by the small gasoline engine include distributing surfacing materials from trucks and painting lane and safety lines. Miles of curbs and gutters are laid expertly by single cylinder devices.

Contractors and builders find small gasoline engines indispensable. Recently developed units include concrete vibrators, mechanical trowels and semi-automatic tools used in plastering. Modern wheelbarrows are self-propelled. Other representa-



In exploring swampy terrain to look for oil, small amphibious tractors are invaluable.



Above, small gasoline units like this make crop care easier for amateur gardeners and professional farmers. ... Below, tamping the ballast of a railroad siding by machine.



Scores of plants depend on gasoline-driven hand trucks for pickup and hauling jobs.



tive applications of the small engine are in sand and gravel screeners, sand blasters and paint sprayers.

The family of equipment most widely used by the home-owner includes not only lawnmowers but rollers, mulchers, clippers and apparatus for cultivating flower and vegetable gardens.

Attachments can be obtained for power mowers so they can do other jobs, like removing cut grass and leaves, or plowing snow. Some types of home and garden tools have a variety of auxiliary uses, among them controlling insects and weeds.

### Pleasure Uses Grow

The role of the small gasoline power plant in the non-workaday world is growing. Well over five million outboard motors provide people with happy hours afloat. Motor-caddies are appearing in larger numbers to carry golf clubs.

Motor scooters and gasoline powered bicycles, as well as midget automobiles, are finding more enthusiasts. Carnival merry-go-rounds spin happiness into the lives of hundreds of boys and girls.

Manufacturers of equipment driven by small engines urge users to follow recommended maintenance procedures, and to call upon authorized dealers or trained mechanics when repairs are needed. Such measures will do much to insure maximum performance and prolong engine life.

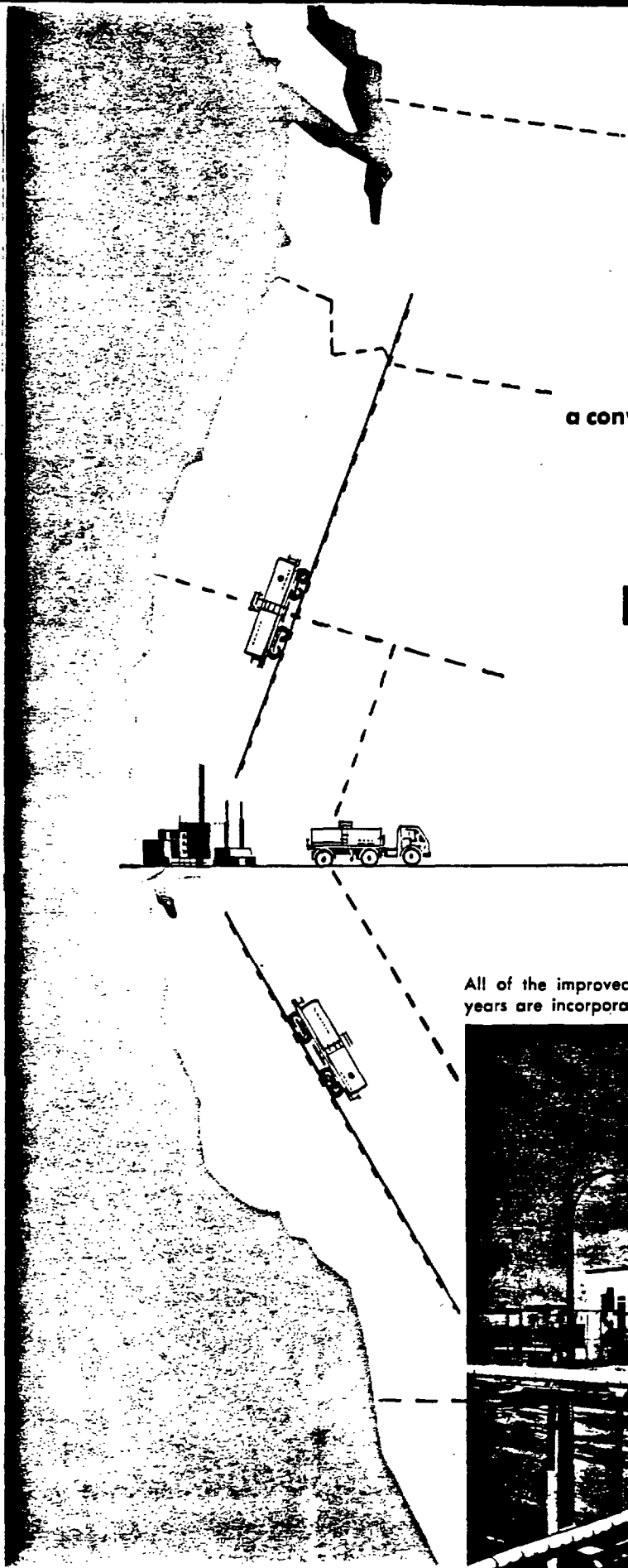
### Debt to Cars

Those familiar with the evolution of the gasoline engine are aware that small types owe much to the first automobiles. The earliest small engines were used to generate electricity and pump water in rural areas, and oddly, to run washing machines.

After a slump in the demand for such units, progress in automotive engineering and the petroleum industry helped stimulate renewed interest in what the small engine could do. Intensive studies on its potential adaptations paved the way for its widespread use today.

As for the future of the small gasoline engine, most manufacturers are confident. Their viewpoint can be summarized by these typical comments:

"While new applications are being found all the time, it is difficult to say whether the demand for our equipment will tend to level off, or whether it will go up in the rather spectacular manner that it has in recent years. In either case, the future looks very promising for our line."#



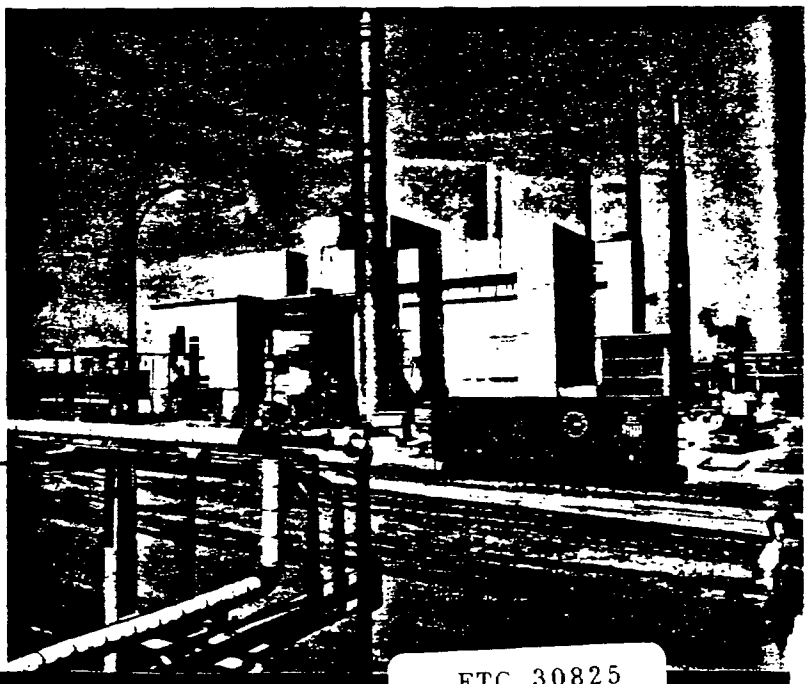
Refiners in the Far West will soon have  
a convenient new source of supply of antiknock  
compounds as Ethyl Corporation's . . .

## Pacific Coas

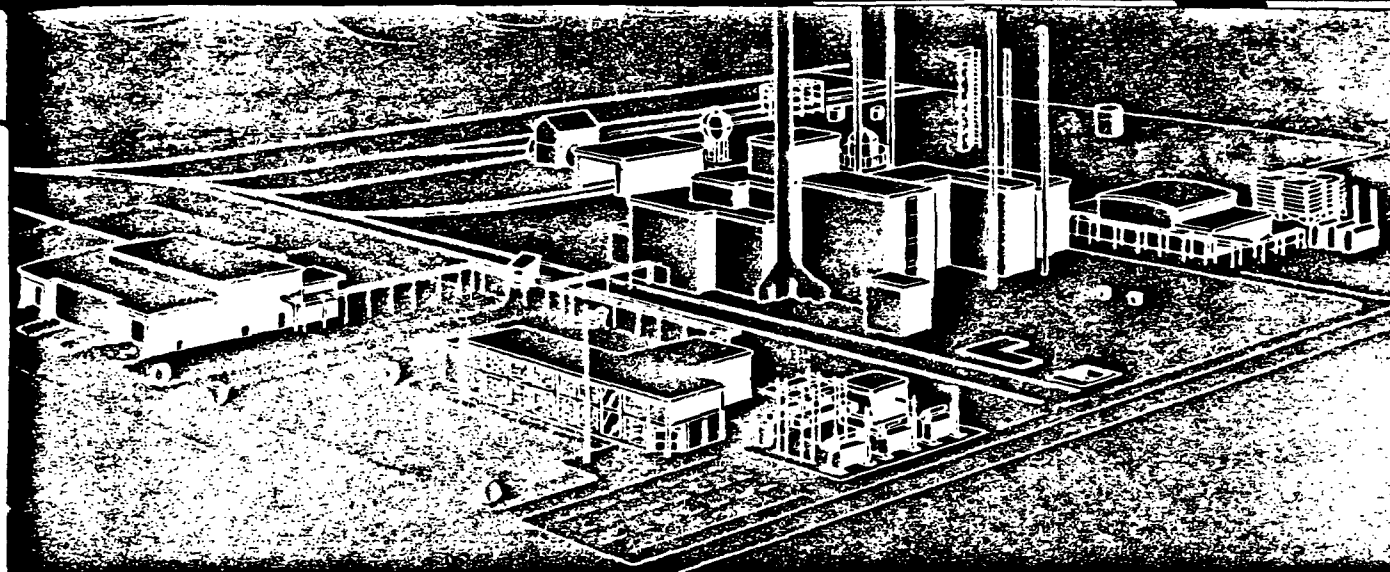
**E**THYL CORPORATION's newest antiknock compound manufacturing plant is scheduled to go into production in mid-May. Designed to provide "Ethyl" fluid for oil refiners in the Far West, its production will help these refiners to make their good gasolines even better.

Situated in the San Francisco Bay area, the new Pacific Coast plant brings to four the number of "Ethyl" antiknock compound manufacturing cen-

All of the improved design and production efficiencies developed over the years are incorporated in the new plant's process building.



ETC 30825



The plant buildings occupy part of a 75-acre site which also provides ample room for future expansion.

## Plant Nears Completion

ters. The others—all of them strategically located to serve refiners throughout the United States, Canada, Mexico, South America and other nations of the Free World—are at Baton Rouge, La., Houston, Texas, and Sarnia, Ontario.

Construction of the Pacific Coast plant is the latest step in Ethyl Corporation's multimillion dollar expansion program of manufacturing facilities. Under this program Ethyl has constructed new plants in key areas convenient to important oil refining centers.

In addition to the new plant on the Pacific Coast, Ethyl has a new distribution terminal at Everett, Wash., and a district office at Seattle.

Ethyl's newest manufacturing plant is the most modern unit of its kind in the world. It incorporates all of the improved design features and production efficiencies developed during past years.

### Tank Truck and Tank Car Shipments

The plant site is on the San Joaquin River midway between the California cities of Pittsburg and Antioch. Refiners will receive their shipments of "Ethyl" antiknock compound directly by both tank truck and railroad tank car.

While rainfall in the area has been considerably heavier than normal this season, the plant con-

struction has been completed without interruption.

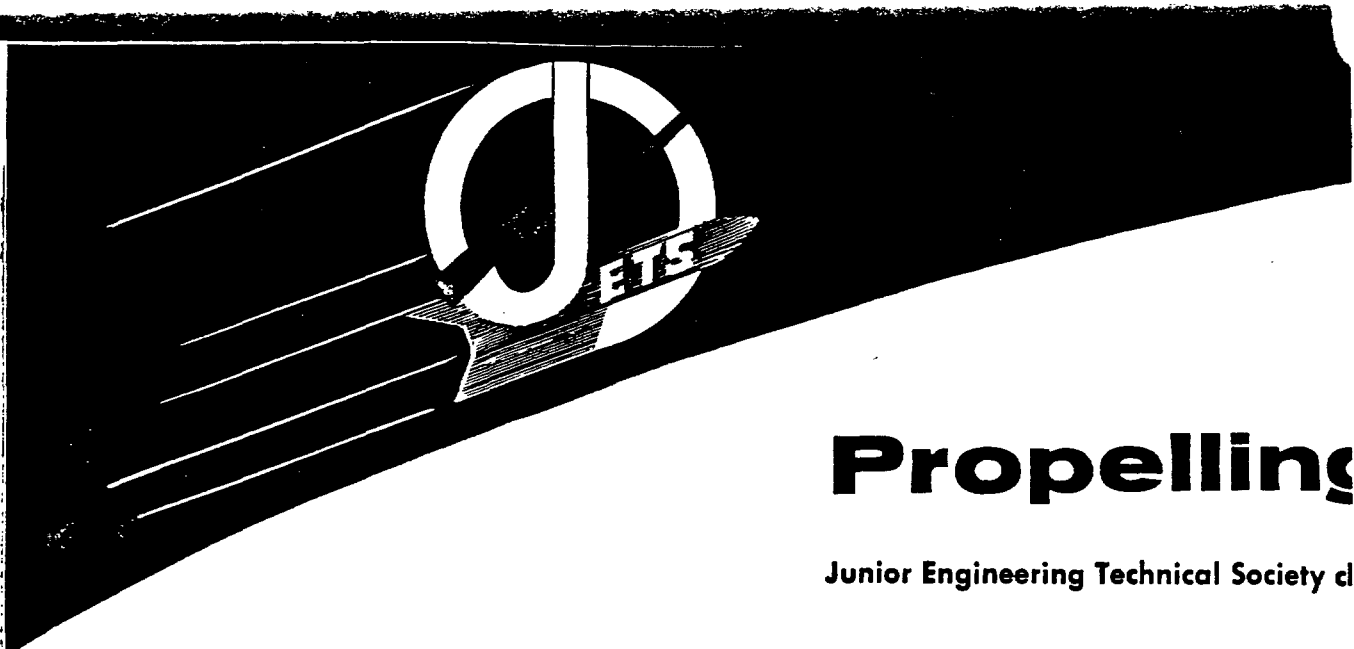
When in full operation, the plant will employ about 135 men and women. Almost all of these, with the exception of key supervisory personnel, are residents of surrounding communities.

Training of the skilled technicians needed to operate the plant began several months ago. They are ready to take over their job assignments as the plant goes on stream. Plant Manager James M. Gill and his staff have been on duty at the site for several months and have recently moved into the new administration building.

### Four Major Buildings

The plant consists of four major buildings and several auxiliary structures, plus a tank farm for the storage of finished antiknock compounds and raw materials required in the manufacture of "Ethyl" fluid. In addition to the administration building, the other major structures are the process building, shops and stores building and compressor house.

The Pacific Coast plant site covers 75 acres. This area provides ample room for any future expansion that might be necessary as Ethyl Corporation continues to grow with the oil industry on the Pacific Coast. #



# Propelling

Junior Engineering Technical Society clubs

By Harry H. McGraugh

**I**F, AS WORDSWORTH SAID, the child is father to the man, then it follows that the time to interest men and women in science is during their youth. For the past eight years, that is just what one national organization called JETS (Junior Engineering Technical Society) has been doing with resounding success.

Consisting of high school clubs from coast to coast, JETS is helping to overcome the critical national shortage of technically trained men. All of its activities and projects are carried out on a voluntary but carefully planned basis outside of school hours, to supplement more formal classroom and laboratory work.

Each club brings together high school students who have scientific interests or aptitudes. Under adult supervision, members are assisted in preparation for careers in science, especially in engineering.

Belonging to a JETS club does many things for a potential scientist. It gives him advice, assistance and stimulus on a technical project of his own choosing. He enjoys creative companionship with fellow students of like minds.

In particular, his club helps him decide whether a scientific career is truly what he wants. His imagination and ambition are kindled by professional men actively engaged in some technical field. The opportunity of winning prizes and scholarships is an inviting challenge.

Like many good things, JETS was born of a

Two Battle Creek, Mich., JETS club members study engine performance with a test stand they constructed.

Their "music on a light beam" project is demonstrated by these budding electronics engineers at a display of JETS work.





# JETS Into Science

throughout the country help interest more teen-agers in scientific careers

problem. Through their guidance work with local high school students, two professors at Michigan State University became convinced that better organized science orientation was a critical need at the secondary school level.

## Started in 1950

Dr. Loren Miller, now dean emeritus of the university's engineering department, and Prof. Harold Skamser approached their objective by organizing two JETS clubs at neighboring high schools in East Lansing. This was in 1950, before the American people became acutely aware of the necessity for increased emphasis on science.

That the Michigan professors' idea was a sound one is attested by the amazing growth of JETS.

Since the first clubs were organized, membership has boomed until today there are some 344 JETS clubs in 37 states, with a total of nearly 10,000 high school students enrolled. At the present rate of growth, estimates put 1958 year-end totals at 475 clubs with close to 14,000 members.

While JETS headquarters at Michigan State supplies each club with a suggested program for the year, along with movies, brochures and other aids, each club is nevertheless a small independent, self-governing group.

A typical annual program for a JETS club as suggested by the headquarters organization is broken down into fall, winter and spring seasons.

The beginning of the school year is recommended as the time for a JETS club to organize committees

James L. Gaddy, Ethyl engineer, explains a chemical process to members of a Baton Rouge club visiting the Company's plant.

Interest in highway engineering prompted these boys to build a model of a complex interchange.



and plan a local program for the year. Field trips are mapped out at this time and requests are mailed for movies and literature from the extensive lists maintained by the JETS organization.

In the winter, project work is emphasized along with watching movies, listening to engineering speakers and browsing through JETS library material. Members are also encouraged to attend professional engineering society meetings in their communities and hold joint meetings with other clubs.

### The Sky's No Limit

The only ceilings on the projects JETS members may undertake are their own interests and imaginations. And since even the sky is no longer a limit today, the projects are many and varied. Some of the typical things built by JETS are model rockets, burglar alarm systems, steam turbines, miniature cars controlled by radio, geiger counters, electric furnaces and stroboscopes.

In the spring, the young JETS fancy turns to the annual Engineering Exposition at Michigan State and to other science fairs, youth talent shows and visits to nearby colleges, universities and museums of science and industry. Tours through local industrial plants are arranged. Election of officers also generally takes place at this time of year.

Industry supports JETS in many ways. By supplying them with literature and films at no cost, by providing technical guidance and assistance upon request and by frequently opening the gates of plants and laboratories for inspection tours, many

industries lend an extremely helpful hand. Oil companies and automobile manufacturers are among the most cooperative.

Some of the literature made available by the oil and automotive industries includes *Petroleum Discovery and Production* (American Petroleum Institute); *Opportunity With Shell* (Shell Oil); *Grow With Conoco—Careers For College Men* (Continental Oil); *Leadership Through Research* (Standard Oil Company of New Jersey); *Transportation Progress* (General Motors); and *Evolution of Mass Production* (Ford Motor Company).

Ethyl Corporation participates in JETS activities through its plant in Baton Rouge, La. Ethyl engineers act as advisors for local JETS organizations. Several of these clubs have toured the plant, learning how "Ethyl" products are made.

Industry also participates in JETS "Big Brother" programs. On "Big Brother" day, each JETS member spends several hours with a professional engineer, observing his work and getting the feel of actual on-the-line engineering.

### No Doubt of Success

That the JETS organization has been a success in a relatively short period of time cannot be doubted. What is the special chemistry that has produced this rapid growth?

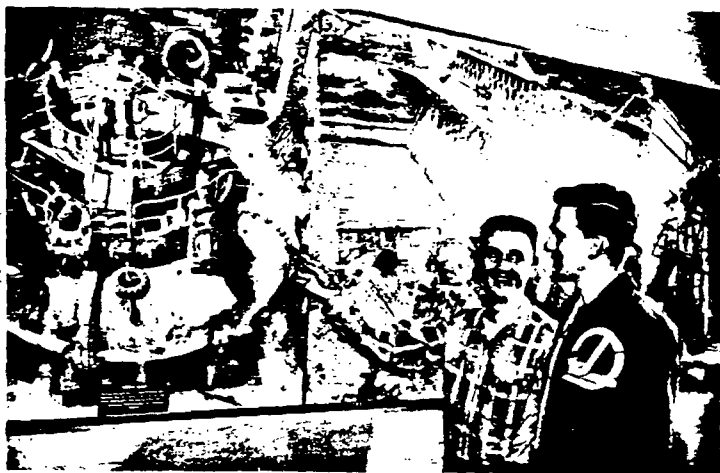
There is probably no one answer to this question, but certainly there lies in the hearts and minds of many young people the desire to learn more about engineering and other sciences, and to discover for themselves whether or not to follow a technical career. As a catalyst to stimulate imaginations and crystallize ambitions, JETS is invaluable to club members.

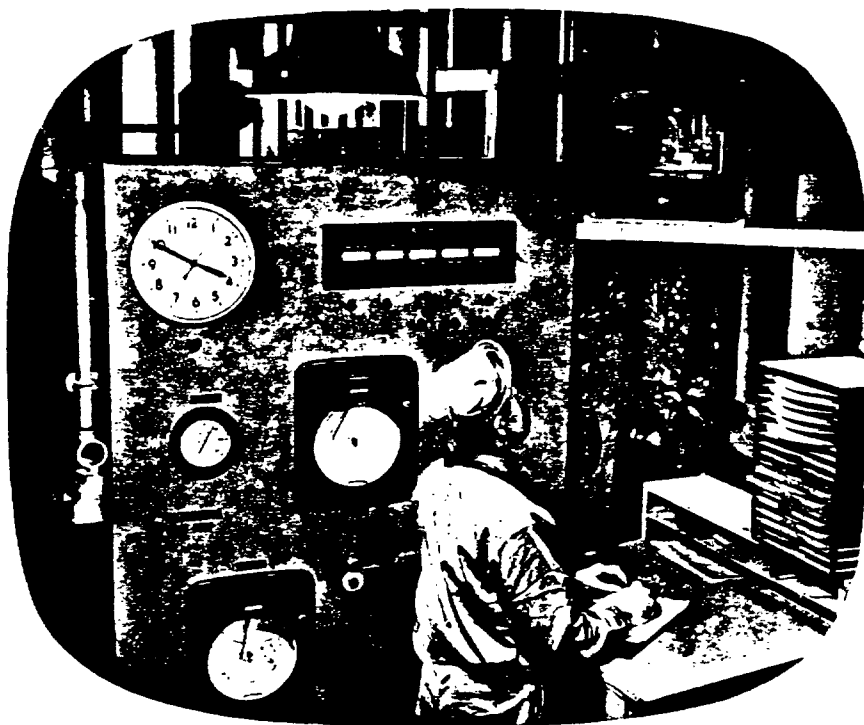
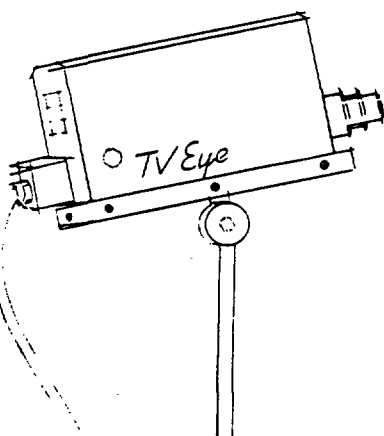
Then, too, they learn how the position of the scientist in American society has changed radically in the past few years. They become more fully aware of the way in which the scientist has emerged as a leading player in a great and fascinating drama of progress on this planet—and possibly on others still unexplored.

JETS also is in keeping with the American tradition of meeting challenges and getting things done. Here, no omnipotent state enters the individuals life and tells him what he must study or what career he must pursue.

JETS is one of democracy's ways of meeting the need for more and better scientists. #

Two JETS scholarship winners, now Michigan State University students, discuss engineering murals.





## Tuning in on Safety

**Closed-circuit TV provides added check at Ethyl of Canada plant**

CLOSED-CIRCUIT TELEVISION is being employed at the Ethyl Corporation of Canada Limited manufacturing plant at Sarnia, Ontario. The internal video set-up provides an added safety check in one of the key operations in the manufacture of "Ethyl" antiknock compounds. It is believed to be the first installation of its kind in the Chemical Valley, the vast petrochemical and industrial area in which the plant is located.

The TV "network" extends over four floors of the five-story manufacturing building. A television camera is focused constantly on second-floor pumps which deliver an alloy of molten lead and sodium to the fourth and fifth floors. There the alloy is

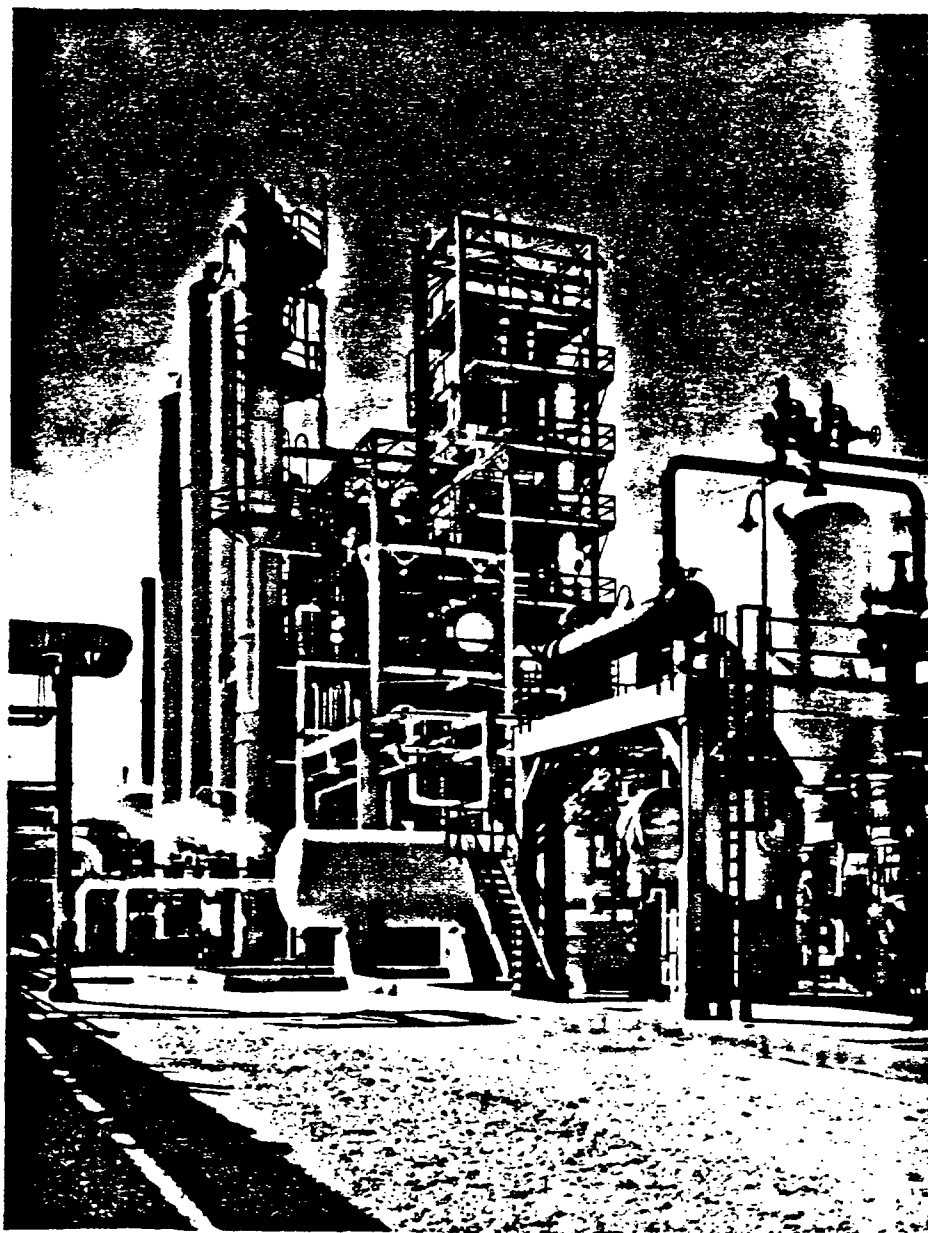
reacted with ethyl chloride to form tetraethyl lead, the active ingredient in "Ethyl" antiknock compounds. Seventeen-inch television receivers enable technicians on the upper floors to keep the second-story pumps in view at all times and to note immediately any irregularity in their operation.

Alan C. Tully, president of Ethyl of Canada, points out that the closed-circuit television system has no effect on the plant's manpower requirements. "We are making this use of TV," Mr. Tully says, "simply to monitor a key phase of our operations. This is a further safety feature in that it permits technicians to maintain a constant watch on the vital production area from remote points."#

# Building Block

New Ethyl plant produces chem

Silhouetted against a blue Louisiana sky, Ethyl's new vinyl chloride monomer manufacturing unit at Baton Rouge helps to satisfy the nation's ever-increasing demands for a popular plastic. In producing the monomer, the Company draws on its extensive experience in the manufacture of chlorinated hydrocarbons.



# for Modern Plastics

intermediate employed in the manufacture of polyvinyl chloride

WITH ITS NEW PLANT at Baton Rouge, La., now in operation, Ethyl Corporation is helping supply the nation's fast-growing requirements for polyvinyl chloride, a widely used plastic. This versatile synthetic goes into modern floor coverings, upholstery materials, wire and cable insulation, pipe, and an ever-lengthening list of household and industrial products.

Ethyl contributes to the manufacture of polyvinyl chloride by producing vinyl chloride monomer. This chemical intermediate is shipped by tank car from the Ethyl plant at Baton Rouge for subsequent conversion into finished polyvinyl chloride.

In producing vinyl chloride, Ethyl is able to draw extensively on its long experience in the manufacture of chlorinated hydrocarbons. For besides being the largest manufacturer of antiknock compounds, the Company has been for some time a major producer of chlorine, hydrogen chloride, ethyl chloride and ethylene dichloride.

Ethyl produces vinyl chloride monomer by thermally cracking ethylene dichloride. This operation yields both the monomer and hydrogen chloride as a byproduct. The later is used in other intermediate chemical manufacturing operations at the plant.

## Built by Catalytic Construction

Ethyl's vinyl chloride monomer manufacturing facility was engineered and constructed by Catalytic Construction Company of Philadelphia. Dr. Clarence Neher and H. E. O'Connell, of Ethyl, were project managers of the engineering and construction program. The plant is under the direction of Dr. Frank L. Padgitt, who is manager of vinyl chloride operations.

Based on vigorous growth in recent years, and continuing expanding usage, polyvinyl chloride is expected to have a bright future. Nationwide production capacity, which had reached a level of be-

tween 700 and 750 million pounds annually at the end of 1956, according to *Modern Plastics*, a trade authority, is expected by many to reach 900 million pounds by the end of 1958. Some predict that polyvinyl chloride may become the country's first two-billion-pounds-a-year plastic. #



Left, Dr. Frank L. Padgitt, manager of vinyl chloride operations, is in charge of the new plant... Below, Company officials watch as the first shipment of the chemical intermediate is loaded into an outbound tank car.





Dr. George W. Beste



Dr. Paul A. McKim



Paul E. Weimar

## Named to New Posts in Research and Development Department

**A** NEW GENERAL MANAGER and an assistant general manager have been appointed for Ethyl Corporation's Research and Development Department operations at the Company's manufacturing plants.

Dr. George W. Beste, formerly director of chemical research and development, is the new general manager of the department's operations at Baton Rouge, La., Houston, Tex. and Pittsburg, Cal. He started with Ethyl as a chemist in 1940, after receiving his B.S. degree in chemistry at Monmouth College and his doctorate at Columbia.

The newly assigned assistant general operations manager is Dr. Paul A. McKim, who has been director of chemical engineering. A graduate of Louisiana State University, where he obtained B.S., M.S. and Ph.D degrees in his field, Dr. McKim was with the Gaylord Container Corporation for three years before joining Ethyl as a process design engineer at Baton Rouge in 1949.

Paul E. Weimar, also at Baton Rouge, is the Research and Development Department's new director of chemical research and development for all Company plants. He was associate director. #

## Six Ethyl Papers Presented at American Chemical Society Meeting

**S**UBJECTS RANGING from new ways of making tetraethyl lead to the discovery of a new series of organo-metallic compounds with potentials in industrial chemistry were discussed by Ethyl Corporation scientists at the 133rd national meeting of the American Chemical Society, held at San Francisco in April.

The six technical papers were based on investigations carried out by the Research and Development Department in Detroit and Baton Rouge, La. Other topics covered by Ethyl representatives included a report on the Company's experimental gasoline additive, AK-33X, and the chemistry of several catalysts and catalytic adjuncts. #

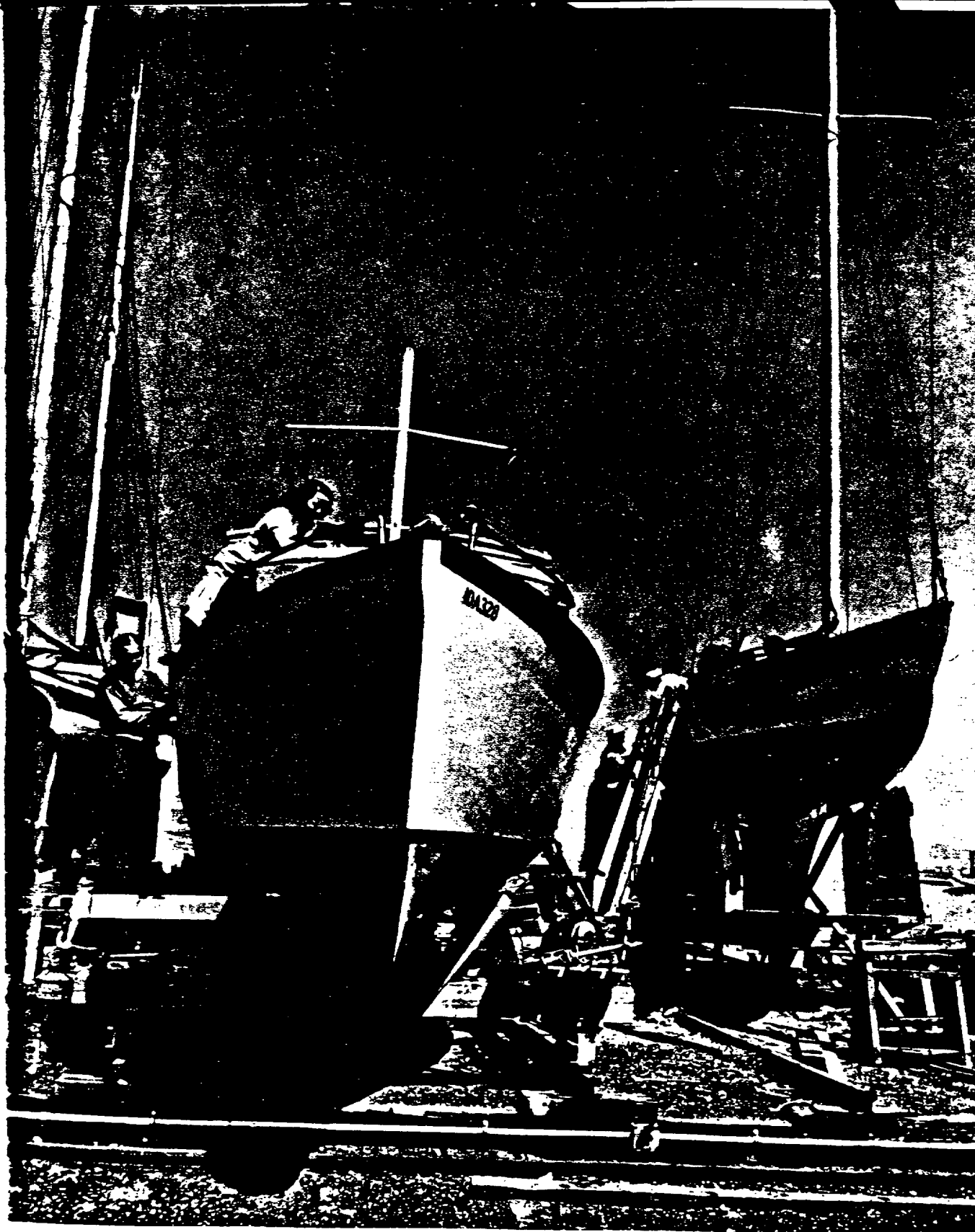
## Annual Review of Gasoline Quality Ready

**T**HE THIRD "Annual Review of Gasoline Quality," covering the year 1957, has been published by Ethyl Corporation.

Its contents include extensive information on trends in octane numbers of motor fuels, volatility, V/L relationships and hydrocarbon analyses of representative fuels. Reference data on the octane requirements of cars are covered, as well as the cal-

culated road antiknock performance of premium gasolines.

Expanded to represent the 57 marketing centers in the United States now included in Ethyl's monthly surveys, the review also gives more information about Canadian gasoline quality. The average octane number of gasolines in 23 different foreign countries is listed too.



Spring is outfitting time for thousands of boat-owners who are busy painting, caulking and tuning engines in preparation for record mileage afloat during the 1958 season.

ETC 30834

Your car  
makes any map  
a Magic Circle



Discover the little roads. They often lead to the biggest pleasures... and make the area about you a Magic Circle



See how delightful country-miles by car can be...



Discover new places the friendly, firsthand way...



Let the sheer joy of driving whet your appetite...



Get the limit in both fish and fun. Go by car.



Drive more...  
it's fun to explore your Magic Circle

On the byways as on the highways, your Magic Circle surrounds you with a worldful of things to enjoy. It makes your car not just a way to go, but a wonderful way of life. And from start to end of any trip, over 200,000 friendly, trained service station men stand ready to make it a carefree pleasure. See for yourself tomorrow, next weekend or next vacation.



ETHYL CORPORATION  
NEW YORK 17, N. Y.

Manufacturers of "Ethyl" antiknock compounds... used by oil companies everywhere to improve their gasolines and your driving pleasure

# ETHYL NEWS

MAY-JUNE 1958



ETC 30836

# ETHYL NEWS

MAY - JUNE 1958

ETHYL NEWS



**THE COVER:** No matter where you live, there's a Magic Circle of wonderful things to do and see by car. Sites like the Lincoln Village at New Salem, Ill., offer everyone a unique blend of history and pleasure. For details on one family's Magic Circle tour, see pages 1-4.

## CREDITS:

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to improve the antiknock quality of motor and aviation gasoline.

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Of course, planning the trip was nearly as much fun as taking it. Steve and Debbie cheerily chipped in their suggestions about things they wanted to do and places they wanted to visit.

High on the list for the children was a picnic, a chance to see some cattle and to drive through a covered bridge. Everyone welcomed the opportunity to have lunch outdoors. Phil thought the children should see Lincoln's Tomb on the outskirts of the city and New Salem, a reconstructed village where Lincoln once lived, about twenty-five miles away.

Since Phil is a partner in a masonry contract-

ing company, he was sure a visit to an historic brick courthouse at Mount Pulaski would be of interest. The courthouse, which is over 100 years old, is an excellent example of Greek revival architecture.

The Evans' family capped their day's magic circle drive by having supper at a restaurant on the way back, a further treat for Louise.

When the Evans' returned home that evening they had enjoyed a wonderfully entertaining and educational day. But they realized that they had only begun to explore their magic circle. Now they are planning other more extensive trips. #



Left, after leaving home, the Evans' first stop was at their local service station. With a modern automobile and a tank full of gasoline, they knew that a good time lay ahead . . . Below, a visit to Abraham Lincoln's Tomb on the outskirts of Springfield was a highlight of the trip.

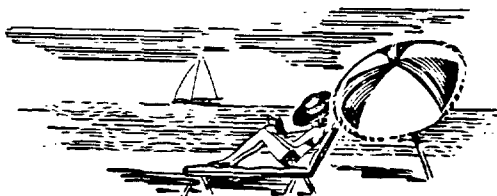




Everyone was interested in watching Black Angus cattle grazing in a field at the well-known Tolan farm, in the northwestern sector of their magic circle.



Driving the back roads and discovering new sights was especially enjoyable. Above, this covered bridge was a delight to the children . . . Right, while Dad enjoys a moment of relaxation, the family prepares a picnic lunch by the shore of Lake Springfield.





A real treat for Steve and Debbie was a ride in this old ox-drawn covered wagon at the reconstructed village of New Salem.

Steve waits at the car while his sister, mother and father come down the steps from the old courthouse at Mount Pulaski.



Supper at a restaurant was an added treat for everyone—especially Mother. While this magic circle trip was drawing to a close, they all knew there would be more to come.



As a detergent, de-icer and anti-corrosion agent,

"Ethyl" Multi-Purpose Additive is highly . . . . .

## **effective** **in three ways**

by William K. McCulloch  
Assistant to Sales Vice President  
Ethyl Corporation

**D**ESIGNED TO SERVE three purposes, a new additive for automotive gasolines is being introduced by Ethyl Corporation. It eliminates deposits in carburetors, prevents engine stalling caused by carburetor icing and protects metal surfaces against corrosion.

Most comparable products currently on the market will combat one or two of these problems, but none achieves similar controls in all three ways so successfully or with such economy.

Available to the oil industry as "Ethyl" Multi-Purpose Additive for Gasoline, it is an amber-colored liquid—the most recent member of the Company's growing family of products useful in modern fuels and lubricants.

The new ingredient for gasoline has proved its value not only by exhaustive laboratory tests, but also under a variety of operating conditions.

Comparatively small concentrations are required to achieve desirable results. Fifty parts of the Ethyl product per million parts of gasoline is the recom-

mended concentration under most conditions. This amounts only to about 12 pounds of additive per 1,000 barrels of motor fuel.

As a detergent, it is the only gasoline additive which removes carbonaceous deposits found on the walls of a carburetor's throttle body just below the closed position of the throttle blade. These accumulations can be highly troublesome.

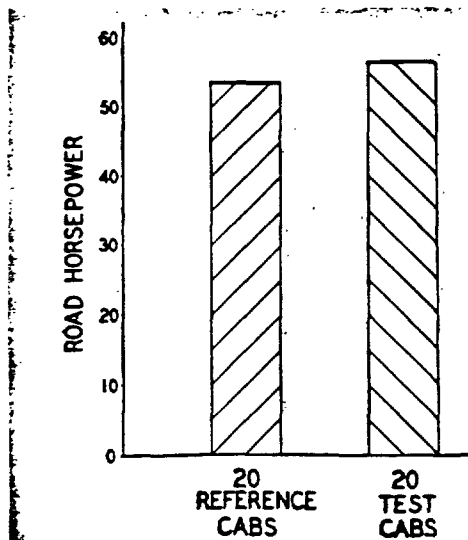
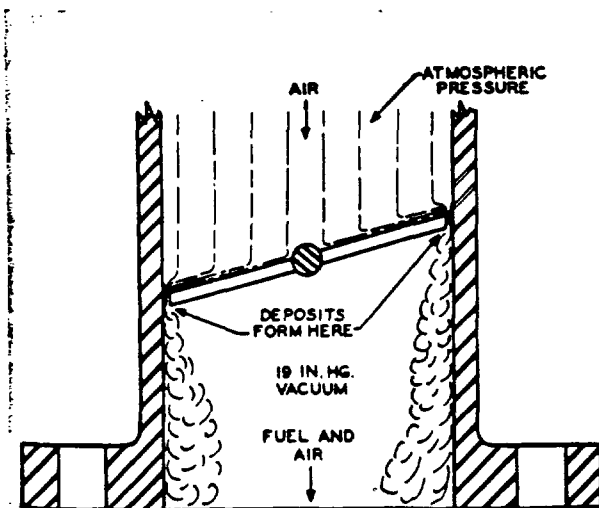
Because newer cars with multiple-throat carburetors have smaller tolerances in throttle bodies, deposits there must be eliminated. The Ethyl additive also prevents such deposits from forming.

### **Sensitive Vehicles**

The widespread use of automatic transmissions, requiring smooth engine idling to avoid car creep, has made all vehicles equipped with them more sensitive to carburetor deposits, which should be prevented or removed promptly.

Because it is so effective, the Ethyl additive contributes to more economical operations. A fleet test with 500 taxicabs showed average fuel savings of three percent when gasoline containing the Company's new chemical was used. In another test, the

Left, where deposits build up in carburetors. . . . Right, tests show how additive boosts road horsepower.



ETC 30842



Heavy carburetor deposits resulting from non-detergent base fuel . . .



. . . are partially dissolved after four hours on Ethyl's additive . . .



. . . and virtually disappear during ten more hours of operation.

road horsepower of 20 cabs driven on gasoline plus the additive was five percent above that of a corresponding number of similar taxis using fuel without the product in it.

Although created and introduced primarily as a detergent for keeping carburetors clean, the additive's other capacities have added spokes to its wheel of usefulness.

As a de-icer, the surface-active properties of the new Ethyl product prevent ice crystals from freezing on a carburetor's throttle blade. This action eliminates engine stalling caused by restricted air flow at idling speeds. Increased concentrations of the additive accelerate its effectiveness under severe conditions.

Carburetor icing has become more pronounced in northern states and Canada from October to May. Oil companies serving these areas have been showing a corresponding concern with the best way to insure satisfactory car operation during the icing season.

Ethyl is confident that its new additive offers a practical and economical solution to this problem, because it permits freedom from ice accumulations which block air flow. By creating conditions in which ice cannot cling to metal parts, crystals pass easily and harmlessly through carburetors.

#### Prevents Corrosion

In its third role, as a corrosion inhibitor, the Ethyl additive reduces maintenance and replacement needs associated with the corrosion of storage tanks, pumps, pipelines, valves, fittings and other metallic surfaces in contact with gasoline during its transportation and storage.

Savings in manpower and dollars are possible by the way the additive forms a protective coating on metals, so that it prevents destructive oxidation which takes place normally. When blended with gasoline even at the low concentration of 50 parts per million, the product is one of the most efficient anti-corrosion agents known.

"Ethyl" Multi-Purpose Additive is being manufactured at the Company's special chemicals plant at Orangeburg, S. C. It is available in drum, tank truck and tank car quantities.

Customers using the additive may apply their individual brand classifications or other terms to indicate its role in carburetor cleanliness, de-icing, corrosion inhibition or all three purposes. #

# Formula for Fellowships\*

by Theodore J. Carron

Fellowship Chairman, Ethyl Corporation

Responsibility for an increasing  
flow of new scientists rests  
heavily on business and industry



The pursuit of knowledge for its own sake has led to fruitful discoveries of vast importance to human progress.

WORLD LEADERSHIP FOR THE UNITED STATES in engineering, scientific and related fields will depend to an increasing degree upon how effectively business and industry support pure or basic research in the nation's universities. There is a particularly urgent need to provide more graduate fellowships for investigations of this kind.

Never before have there been such compelling reasons for us to command an unequalled position in technological achievements. Conducting more basic research—leading to a better understanding of fundamental problems—is the soundest way to make sure of our superiority.

Because knowledge gained from the basic research of today will be so essential on critical fronts tomorrow, failure to encourage it by all possible means would be little short of tragic.

One of the most vital aspects of broadening and strengthening such programs is making the most of the nation's intellectual resources. Over a year ago, the Engineering Manpower Commission pointed out that "... our major problem is ... educational quality all along the line. ..."

The validity of this conclusion is beyond dispute. Furthermore, a little sober reflection will convince all Americans that with a much larger population in the Iron Curtain countries, we never can outdistance them numerically in scientific manpower.

Our problem therefore becomes one of outstripping the communists in the quality of our chemists, physicists, engineers and other specialists. This we

*\* Adapted from an address given at the American Society for Engineering Education, Southeastern Section, in Miami, Fla.*

can and must do, with every weapon we have.

None of us, however, should find discouragement or frustration in this challenge. On the contrary: thanks to teamwork between thousands of companies and our universities, this country can respond with such success that we never need to face the prospect of running second best to the Russians.

It follows that to insure the high quality accomplishments, we must look to those whose mental capacities and abilities are superior. Because graduate students constitute our most promising new reservoir of brainpower, it is to these young men that we owe virtually unlimited support.

That is why providing fellowships for them is so important. Grants which allow recipients complete freedom to tackle whatever problems strike sparks of interest are needed particularly, if research is to lead to the discovery of invaluable knowledge.

### Contribute Fair Share

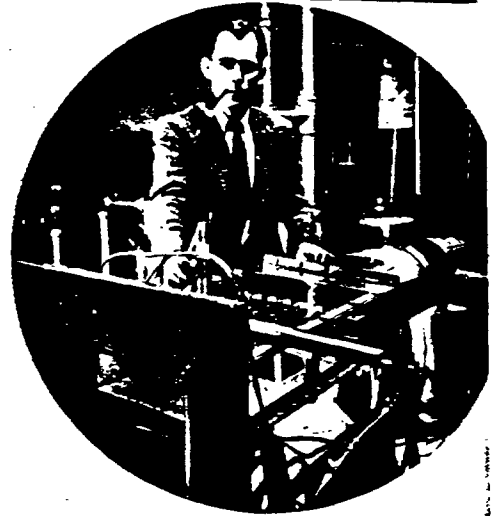
Quite obviously, there can be no rule-of-thumb which all companies will find infallible in determining the nature and extent of their support for graduate education. But if private enterprise is to contribute its fair share in the most useful ways, the policies and practices of Ethyl Corporation may be of pertinent interest.

Our basic policy is to add more to the nation's scientific manpower resources than we take out. Reduced to its simplest terms, our formula is awarding 2.5 fellowships for every man with an advanced degree who is employed by the Company annually.

Because faculty guidance is so essential to fruitful research, the formula is adjusted upward by 20 percent to train more men than we employ. Some of them will remain in the academic world and work with new generations of fellowship holders. This helps provide a continuous flow of scientists.

We consider this to be Ethyl's fair share of responsibility for assuring not only our own requirements for qualified personnel, but to help meet the needs of the oil, automotive and related industries. Ethyl in turn often employs men who have been assisted by the fellowships of other companies.

It is gratifying to know that including our own employees, two-thirds of Ethyl's fellows now have responsible industrial positions. Others are university department heads or teachers, educating still more scientists. Some have made substantial contributions to new fields like nuclear energy.



Cornell's air flow research is among studies underway at various centers to help solve the complex problems of future supersonic travel.

All Ethyl fellowships are completely unrestricted insofar as fixed objectives are concerned. We specify only the field of research, such as chemistry, chemical engineering or mechanical engineering.

A survey among 92 recipients of Ethyl awards shows strong agreement that students should have this kind of freedom to conduct basic investigations. (See "The Hand of Fellowship," ETHYL NEWS, September-October, 1957). We have received many letters from universities where Ethyl fellows study, expressing appreciation for financial awards "without any strings on them."

Business and industry have every reason, of course, to push ahead with practical or applied research to meet their specific objectives. But in a democracy like ours, private enterprise must be fully alert to its responsibilities in extending frontiers of knowledge for the common good.

At first glance, there may seem to be sufficient funds available for research and development of all kinds. About \$7 billion is spent annually by commercial enterprises, foundations, government agen-

### THE UNIVERSITY

There are few earthly things more splendid than a university.

... wherever a university stands, it stands and shines;

... wherever it exists, the free minds of men, urged on to full and fair enquiry, may still bring wisdom into human affairs.

To be a member of one of these great societies must ever be a glad distinction.

JOHN MASEFIELD



Mother earth still hides many of her secrets, as geology fellows know when they start basic research at Louisiana State University.

cies, educational institutions and others, but this total is still less than two percent of our national gross production. According to commonly quoted figures, less than \$350 million is being applied to basic research.

College and university research budgets have grown from approximately \$20 million in 1940 to over \$200 million today, but in the opinion of many authorities, the share allocated to pure or basic research is inadequate. This viewpoint hinges upon results achieved.

For example, J. C. Warner, former president of the American Chemical Society, feels that, "... we

have not uncovered as much... as we might expect from the substantial expenditures for research in our universities." He asks for steps which will assure "... the university as a place where scientists, engineers and other scholars can be supported in their search for new knowledge without restrictions on the directions their inquiries should take."

It may be true that no problem is ever solved in the laboratory without raising a dozen new ones, but every basic discovery adds its diamond to the tiara of human knowledge. Obscure as ultimate uses may appear at first, there are countless examples of how pure research findings have resulted in tremendously significant applications.

### Applying Mental Curiosity

Among the more recent achievements of this kind is the development of the so-called "miracle drugs" at Rutgers University, originating in basic research on soil bacteria. A superior jet and rocket fuel had its launching pad in University of Chicago studies on unusual chemical linkage in a rare gas. When scientists at Harvard worked on the fractionation of blood, they paved the way for a blood substitute so desperately needed during World War II.

By permitting his intellectual curiosity to probe at will, mankind appreciates by now that the pursuit of knowledge for its own sake is the best assurance that invaluable scientific accidents will continue to happen. It may be of limited importance today to have learned that sunlight breaks down molecules of oxygen high in the atmosphere, but this fundamental discovery may well lead, at long last, to practical utilization of solar energy.

If business and industry will concern themselves more carefully, thoroughly and generously with unrestricted fellowships for expanded graduate research, who knows what other astonishing secrets of the universe will be ours?#

Left, a superior rocket fuel was made possible through knowledge gained from pure research at the University of Chicago... Below, campus gates may be closed to many future scientists if business and industry fail to provide enough financial support.





IF YOU COULD SET UP Derrick, N. D., in Oilfield, Ill., and Drill, Va., through Strata, Ala., into Pool, W. Va., of Petroleum, Ind., you'd have a source of Gasoline, Texas, for Auto, W. Va.

How's that again?

Sounds like a bad case of conglomeration of the glossaries. No cause for alarm, though. This is really only a bit of petroleum patois put together from actual town names to show that—in more ways than one—oil definitely is on the map.

From Petrolia, Pa., to Petrolia, Calif., and from Oilton, Texas, to Oilmont, Mont., the states are sprinkled with town names patterned by petroleum. Most of these oily oligarchies will never rival New York for population prowess or Tulsa for petroleum prominence, but they're there just the same. And Shakespeare notwithstanding, there is something in their names. Most were christened in early oil days as mushrooming industry activity brought increasing numbers of residents to their localities.

Heading the list are some dozen or more town names in which the word "oil" actually appears. The oldest and largest of these, no doubt, is Oil City, Pa., a few miles down Oil Creek from the Drake well. Now a town of some 20,000, Oil City dates from the very beginning of the industry. Today, it still is an oil city—the home of several refineries and oil companies.

As petroleum production spread south, south-

west and west, the name "Oil City" naturally followed along. One each was founded in Louisiana, Oklahoma and California.

Not far behind are the "Oil Centers." The Kentucky and New Mexico versions appear as two words, but the Californians seem to have streamlined theirs to Oilcenter.

When oil was the last word at other places across the country, it became the first word (or syllable) in many of their names. Reading from west to east, there are Oildale and Oil Junction, both just north of Bakersfield, Calif., and Oilfields, in the Golden State's San Joaquin Valley. Kansas, generally thought of as a flat state, boasts an Oil Hill. In Arkansas, a settlement whose map symbol falls in the 0-250 population category is tagged Oil Trough. There's an Oilla as well as an Oilton in Texas, and another Oilton in Oklahoma.

Moving still further east, there are Oil Springs in Kentucky and Oilville in Virginia.

#### Petroleum Popular

Skipping through the gazetteer's "O's" and on into the "P's," it's soon apparent that the name "Petroleum" and forms thereof are a close second in popularity to "Oil." Not far from Petroleum, Ind., are Petroleum, Ohio, Petroleum, Ky., and Petroleum, W. Va. And, appropriately enough, there's also a Petroleum deep in the heart of Texas. Far to the north, on the eastern slopes of the Rocky

JUNCTION • OIL TROUGH • OILVILLE • OIL HILL • OILLA • OILDALE

## ON THE MAP



North, south, east and west, many states are sprinkled  
with town names patterned by petroleum

Mountains, one of Montana's counties likewise bears the name Petroleum.

Back in the days when it probably was the world's "Petroleum Center," or close to it, a town by that name sprang up amid the wooden derricks and storage tanks on the banks of Oil Creek in northwestern Pennsylvania. Though little remains of the once-flourishing settlement, the name's still on the map—but with the indication that it now claims only a few hundred inhabitants.

Whether by coincidence or design, no one may ever know, but the name "Petrolia" occurs in several widely separated oil producing areas. There's one each in the oil regions of Pennsylvania, Kansas, Illinois, Texas and California, and perhaps elsewhere.

Gas, so often found in conjunction with oil, also is the basis for place names—though perhaps not quite so many. A superficial map study turns up Gas, Kan., Gasburg, Va., a Gas City in both Indiana and Oklahoma, and a Gasport in the northwestern corner of New York state—to mention just a few.

If you want to extend this oil-powered geographical tour further, you can have fun with other industry terms that also are town names. The neighboring states of Alabama and Mississippi both boast a Reform, and Alabama also lists a Coker on its roster of towns. Kentucky has a Cracker, an Asphalt, and—gasoline marketers will

be interested to know—a place called Premium. There's a Derrick City in Pennsylvania, an Asphaltum, Okla., and towns named Wells in several other scattered states.

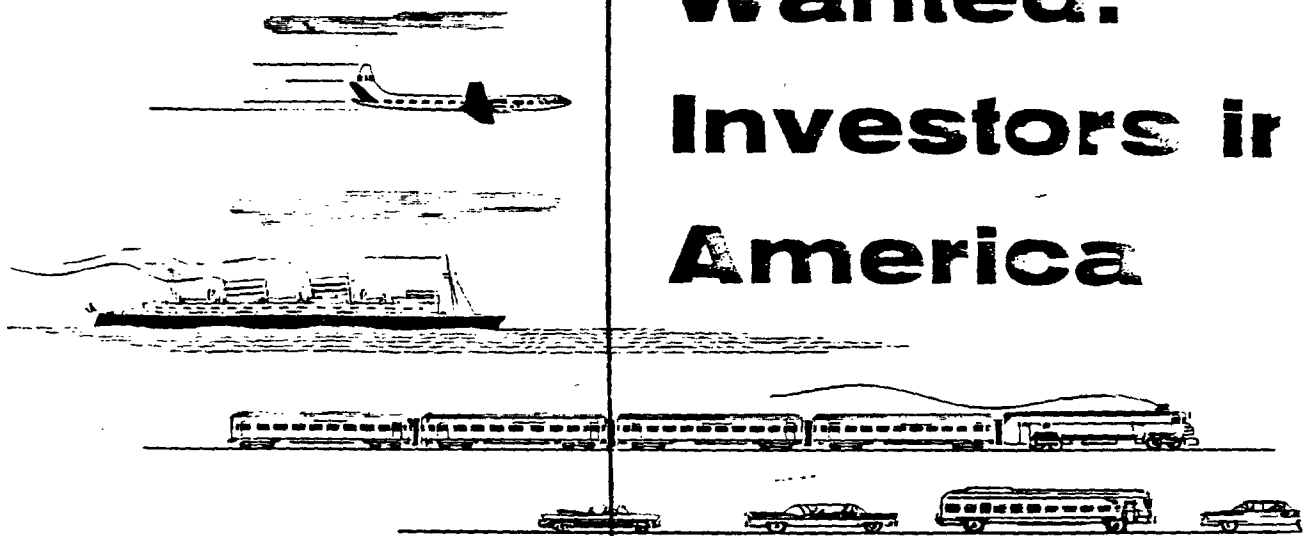
How far you can play this game on a worldwide basis, there's no telling. A good starting point might be the Province of Ontario in Canada where oil has a long history. Within a few miles there, you can pass through Petrolia, Oil Springs and Oil City.

### First Map Mention of Oil

And so it goes. Throughout the United States and around the globe, oil is literally on the map. In one form or another it lends its name to towns and villages in whose history it has played a big part.

First known map mention of oil—at least at a location where subsequent events were to prove it actually existed—was on "A General Map of the Middle British Colonies in America," prepared by Lewis Evans in 1755. On this historic document, the word "Petroleum" was printed to indicate the presence of oil in the very area of Pennsylvania where Colonel Drake brought in his epoch-making well in 1859.

It was in this same area that Petrolia, Petroleum Center, Oil City and other industry-inspired town names were to become among the first indications that oil and geography mix. #



# Wanted: Investors in America

Asking individuals for financial support of political parties adds  
a new dimension to national get-out-the-vote efforts

*By Thom Yates*

NOT SINCE THEIR HERCULEAN civilian and military efforts in World War II have the American people been so stirred as they were by an event which happened thousands of miles from their homeland last October 4. That was the day the Soviet Union launched the first artificial moon.

When the United States, only a few months later, put its first earth satellites into orbit, most Americans shared exaltation over this country's achievement. And now what, the average citizen repeatedly asked himself, could he do personally to help his nation stay in the forefront of mankind's race to control outer space?

Despite his chagrin that another nation (particularly a potential enemy) had beaten us to the punch, and despite his burning desire to maintain the United States' superiority in technology, the individual American found there wasn't much he could do alone.

But blocked as he was in these ambitions, the average citizen realized that there was at least one constructive step he and virtually all his adult fellow-countrymen could take. It was simple and

easy—so simple and so easy, in fact, that many people might easily overlook its importance.

That was to VOTE at every opportunity.

This fall qualified citizens will go to the polls to decide who will be members of the United States Congress, the most representative and most useful body of its kind the world has ever known. All 435



seats in the House of Representatives and one-third of the Senate's seats are at stake. These elected representatives of ours will have a determining voice in virtually all key matters affecting the nation's security, welfare and progress.

They will decide how our tax money shall be spent. They will make the laws that regulate so many facets of our businesses and personal lives. And to a large extent, they will determine how wisely and how well America competes with unfriendly countries and cooperates with its allies.

Yet, if past vote turnouts in Congressional elections are repeated this year, only 40 out of every 100 American voters will take the time to go to the polls on November 4.

The principal way to change this sorry picture, according to John C. Cornelius, president of The American Heritage Foundation, is to impress upon each individual citizen the fact that his "one little vote" really does count. History records that many a crucial election has been decided by the margin of a single vote.

True, not all citizens who will fail to vote should have the finger of shame pointed at them. Antiquated and outmoded state and local laws will keep a large number of people from the polls. Unavoidable absences from voting districts will prevent others from exercising their American right and patriotic duty. But by and large, absenteeism can be blamed on personal inertia.



Municipal buildings, churches and schools will double as polling places throughout America this fall.

A non-voter's excuse that will be heard with great frequency this fall is "Why bother? This is just an off-year election." Except as the phrase exists in our vocabulary, there's no such thing as "off-year" balloting.

The implication is that voting for members of Congress is not as important as voting for President. It's difficult indeed, The American Heritage Foundation points out, to see how people can consider any election "off" when it involves choosing representatives who will be the public's collective voice in Washington.

But sorrowful as America's voting record is,

Voting is a sacred right and privilege. Free elections are unknown to half of the people on earth.



there are hopeful signs that it will not always be so. More and more groups, organizations, business firms and industries are taking an active part in The American Heritage Foundation's continuing nonpartisan effort to "get out the vote."

Particularly heartwarming is the increasing interest of business and industry in urging and encouraging employees to exercise their voting privilege. The Foundation cites, as an outstanding example of this participation, Ethyl Corporation's award-winning campaign in connection with the 1956 Presidential election.

Spurred by their employers, among others, Americans are being reawakened to the need to vote—and vote *in every election*—as one of their individual contributions to the continued strength and unity of their homeland.

### Vote Intelligently

But, as nonpartisan efforts have stressed, there is more to voting than merely casting a ballot. There is a vast difference between a vote and an *intelligent* vote. It would be a meaningless gesture—almost a sham—if 100 percent of American voters went to the polls on each election day with a majority not understanding *who* and *what* they were voting for.

Acquiring before going to the polls a broad familiarity with the backgrounds of the candidates

Even those who are ill or unavoidably absent from home can cast their ballots by making arrangements for absentee voting.



and how they stand on various issues is a vital part of voting—as important as the act itself.

Now, dictated by the demands of the time in which we live, a new dimension is being added to the voting process. It's this: more and more citizens must support financially the political party of their preference—voluntarily and as individuals.

Starting with the 1958 elections, a national nonpartisan campaign to educate and inform every American of the desirability of contributing to the party and candidates of his choice will be carried forward jointly by The American Heritage Foundation and The Advertising Council. "Participating citizenship" is one term which has been used to describe this new kind of support.

The campaign has the endorsement of both major political parties, and already has been hailed editorially by many of the nation's leading newspapers.

Estimates are that no more than two percent of the population—and possibly closer to only one percent—ever makes a financial contribution to any political party. A recent Gallup poll, however, showed that millions of voters are ready and willing to contribute, but that most of them never have been asked.

### What They Can Afford

Now that is being changed. Voters *are* being asked to give—on the order of \$1, \$2, \$5 or whatever reasonable amount they can afford.

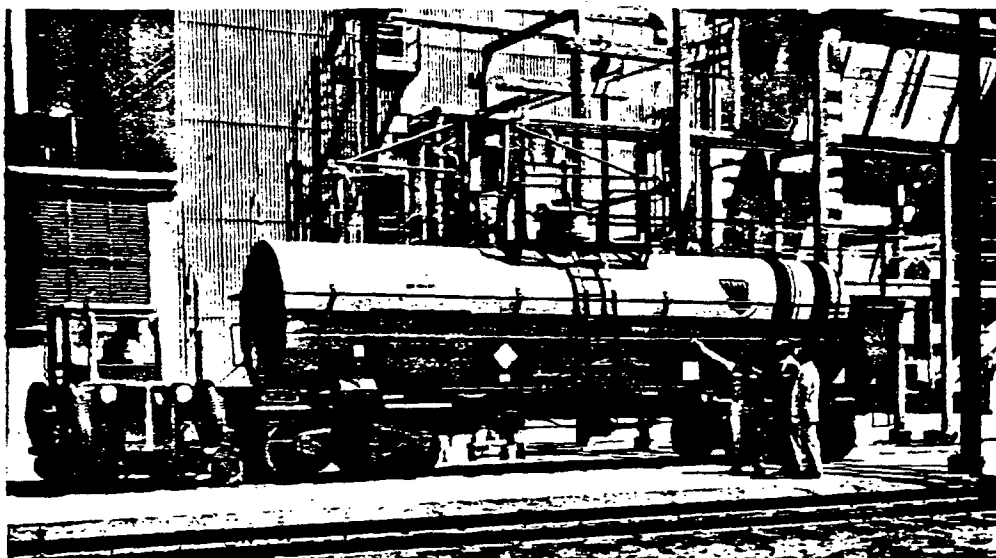
A most desirable by-product of widespread giving by voters is expected to result. Because they would have a financial stake, so to speak, in a particular party and candidates, it is thought that citizens who donate money will exhibit the same kind of renewed interest and support which have been created by similar ties in other fields."

For example, as one leading newspaper has pointed out, "the growth of a broad base of stockholders in all walks of life has resulted in more lively and vigorous attention to the affairs of business and industry. This has been for the general good of the nation. Why not follow the same road in politics?"

This plea is being made because it never has been so urgent or important for Americans to appreciate the need to vote intelligently and to support financially our historic two-party system—now that our country is orbiting itself into the space age.≡

# ON STREAM FOR

## Western Refiners



Filling the first tank car with "Ethyl" fluid for shipment from the Pacific Coast Plant.

THE FIRST "ETHYL" ANTIKNOCK COMPOUND produced west of the Rocky Mountains was shipped by tank cars to Pacific Coast refiners during the first week of June from the Company's new plant at Pittsburg, in the San Francisco Bay area.

Completed on schedule, the latest addition to Ethyl Corporation's manufacturing facilities went on stream officially on June 2. It is part of a \$125 million plant expansion and improvement program carried out in recent years.

Glenn O. Hayes, general manager of manufacturing, points out that the new Pacific Coast plant "has been built to provide oil companies in the far west with a convenient new source of supply for antiknock compounds to help them meet modern day high octane gasoline requirements."

No ceremony marked the start of production. Ethyl employees, who had been undergoing extensive training at the plant site, put the plant into

operation in what Plant Manager James M. Gill called "a natural and orderly transition to actual work assignments."

Physically, the Pacific Coast plant consists of four major buildings and other auxiliary structures, as well as a tank farm for storing finished antiknock compounds and raw materials. In addition to the administration building, other principal units are the process building, shops and stores and compressor house.

The plant site includes 75 acres. Not all of the property is being used now, so there will be room for future expansion. The plant's capacity or size can be enlarged at any time without interrupting normal operations.

The Pacific Coast plant is the fourth where "Ethyl" antiknock compounds are made. Others are at Baton Rouge, La., Houston, Tex., and Sarnia, Ontario. #

## Trying to park challenges ingenuity and leads to high adventure

By Frank L. Remington

A LOS ANGELES DRIVER parked his automobile along Sunset Boulevard one night not long ago with such "man-bites-dog" results that even blasphemous Hollywoodians gasped in astonishment. A house ran into his car!

It seems that the house, being moved along the avenue, slid from its supports and crashed into the luckless man's vehicle.

There's such a premium on parking space these days that just about anything can happen to the motorist fortunate enough to find a temporary haven for his car. Take the case of the driver who pulled up to the curb next to a building project:

"Hey, you can't park there," a construction foreman warned him. "Your car's in the way."

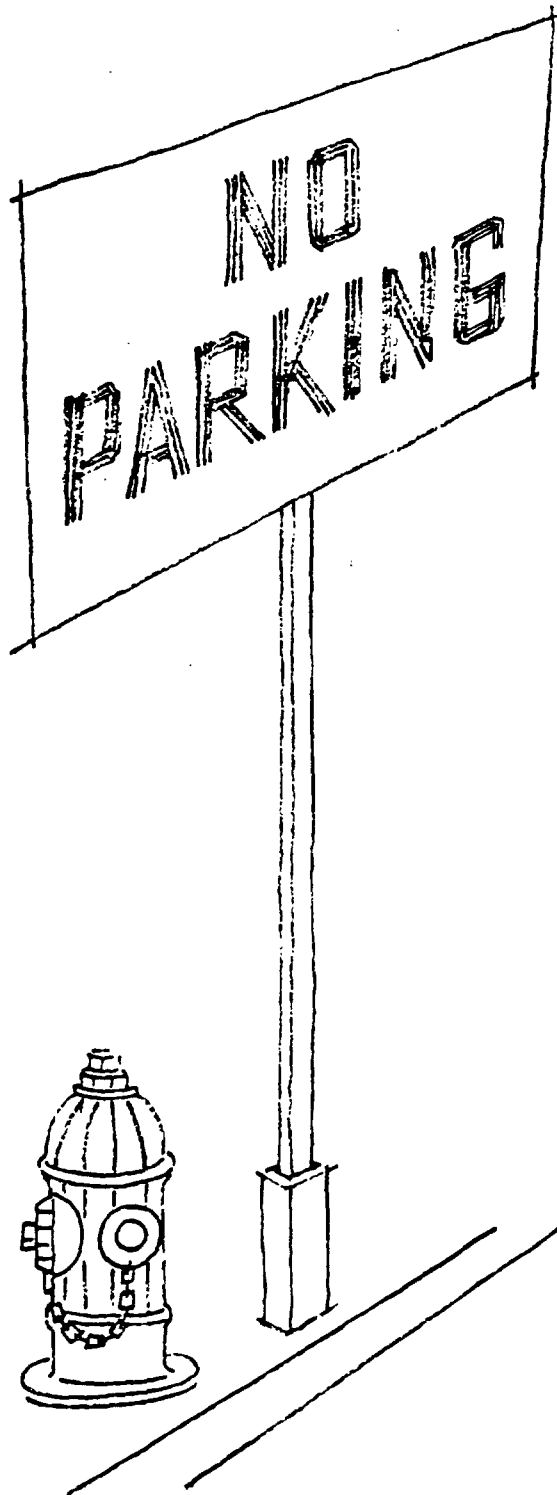
The parker turned a deaf ear to the admonition and blithely went about his business. Infuriated, the foreman promptly ordered his crane operator to attack. The crane hoisted the offending automobile high in the air and released it to crash on the street. After two repetitions of the operation the object of his vengeance was reduced to junk.

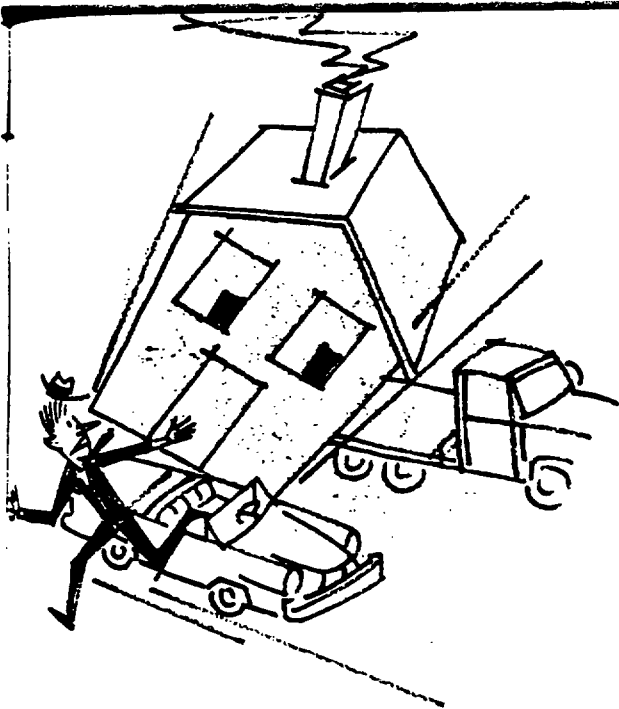
### Wily Motorists

There's no telling what stratagems motorists will dream up to solve their parking problems. A while back, a Chicago hardware store was burning briskly when the first fire engine arrived and halted beside a fire plug in front of the building. As a hoseman approached the hydrant, a man dashed out of the burning store and snatched the plug right off the pavement while the fireman gulped in disbelief.

"Not this one!" shouted the man, who turned out to be the burning shop's owner. "There's a real plug at the corner—I keep this fake one here to make sure I'll have a place to park!"

Equally imaginative was the fellow who lived near United Nations headquarters in New York and noticed that police were especially considerate of cars bearing foreign emblems. He dug up a little flag and attached it to his own car. For several months he was accorded rights-of-way and parking privi-



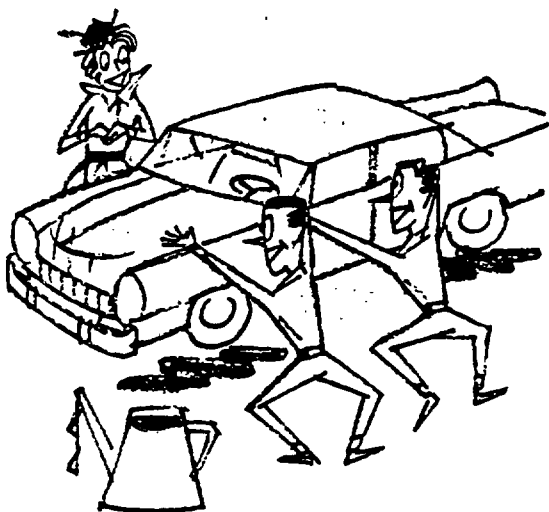


leges of an Oriental potentate—until somebody realized that the flag had come from the five-and-ten.

Another motorist regularly drives into restricted parking places, jacks up the rear left wheel, and takes off the tire and puts it in the trunk. Then he goes about his business. Returning, he replaces the wheel and drives off.

If he can't find an available parking spot, another driver frequently pulls to the curb right in front of a warning sign. Fishing a parking ticket out of his pocket, he tucks it under his windshield wiper and goes off confidently.

A Camden, N. J., miss has solved at last the problem of where to park when she drives to work in the downtown area. She bought a 12-foot-

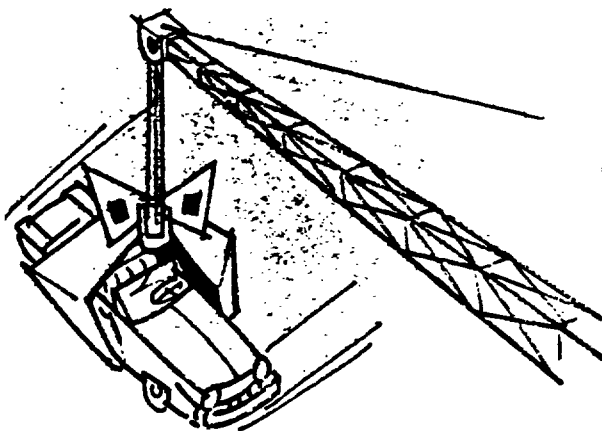


wide vacant lot a block from her office, and now parks there regularly.

Traffic police constantly run into new twists of motorists either attempting to find a parking place or to beat the rap on overtime parking. During a recent winter Holyoke, Mass., authorities experienced considerable difficulty with drivers who found a neat way to beat the parking meters. They would drop in a penny, take out a water pistol and shoot a stream of water into the slot—freezing the mechanism and allowing unlimited parking.

In Oklahoma City a policeman graciously helped a lady driver who indignantly declared that the coin she'd slipped into a parking meter had failed to register. After banging the mechanism a few times the officer saw a slug drop into place behind the glass. The woman promptly received a summons.

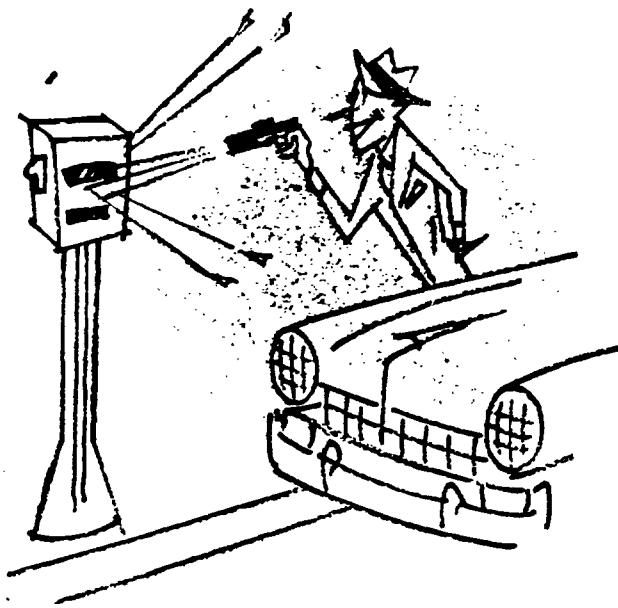
Not long ago an Atlantic City traffic officer found



a note on the windshield of a parked car: "I know I have parked illegally, but my job depends on it. I must get to the office immediately. 'Forgive us our trespasses.'"

When the owner of the automobile returned several hours later, he found a parking ticket and a note which read: "My job also depends on your illegal parking. 'Lead us not into temptation.'"

Unfortunately, even when a driver happens to find a legal parking space, he often discovers it's almost impossible to squeeze into it. Occasionally, a good samaritan helps the cause along—as in New York a while back. A woman driver with obvious lack of skill was attempting to jockey her sedan into a small parking space. A truck driver and his



helper, delayed by her fruitless maneuvers, hopped out of their truck flourishing a large oil can. They skillfully squirted some heavy motor oil under the sedan's tires, then neatly slid it into the curb.

Frequently traffic authorities put up restrictive parking signs that are real dillies—like the notice posted in an Ohio town: "Effective immediately there will be no parking at the No Parking signs." An Indiana parson, though, came up with the perfect remedy for parishioners who ignored No Parking signs in front of the church. He replaced them with ones reading "Thou Shalt Not Park."

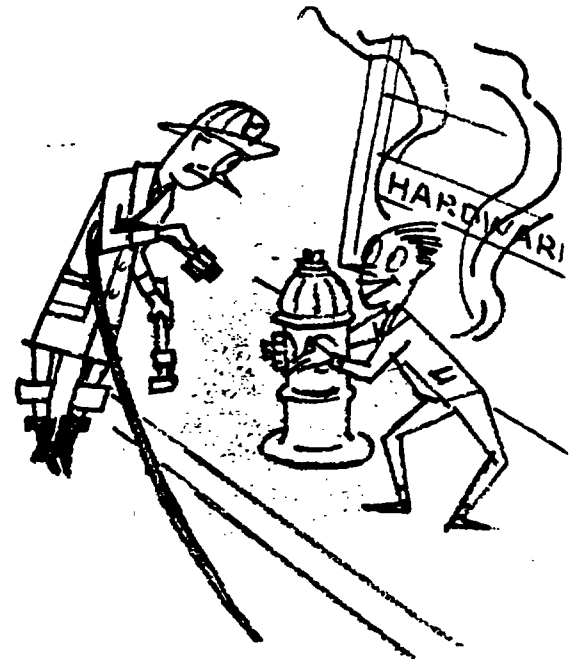
Students at Ohio State University who do not belong to a certain fraternity are mighty careful not to park in the chapter's lot since this sign was



posted: "Cars parked illegally here will be completely disassembled."

Naturally, motorists who draw parking tickets tell some surprising stories. One woman protested to the traffic policeman writing her an overtime summons: "But, officer, I was trying on a dress. They gave me the wrong size, and it was so small I couldn't get out of it in time to put in a second nickel!" A midget, however, escaped paying a fine after explaining to the court that he couldn't reach the coin slot of a parking meter.

And some drivers never learn. One man who



dashed into local police headquarters to pay a fine was asked why he was hurrying so much. "I'm double parked outside," he explained.

No one can blame the righteous indignation of a Minneapolis driver tagged for parking on a bridge. He'd plunged into the Mississippi River, rescued a drowning woman—and then found a ticket on his car for illegal parking.

Most drivers, it would seem, experience the perils of parking at one time or another. Few, however, get a double ticket, as happened recently to one motorist. He was rushing madly across the street to prevent two officers from towing his car from a no parking zone when another presented him with a summons for jaywalking. #

## New Appointments In Ethyl Sales Department



John D. Bailie



George H. Unzelman



William W. Sabin

**J**OHN D. BAILIE AND GEORGE H. UNZELMAN have new assignments in the New York offices of Ethyl Corporation's sales department.

Mr. Bailie is filling the newly created position of manager of sales technical services, where he will coordinate technical activities of the department. Mr. Unzelman is the new technical assistant in advertising and sales promotion.

Having been associated with Ethyl for 19 years,

Mr. Bailie was formerly the Company's chief refining technologist in Chicago.

He is being replaced there by William W. Sabin, a refinery technology supervisor in Detroit.

In his new position, Mr. Unzelman will coordinate technical advertising and provide technical assistance to the advertising and sales promotion staff. Before being promoted, he was a sales refinery technologist in the southern region.

## Investigating Engine Wear and TEL Knock Prevention



Ellis B. Rifkin



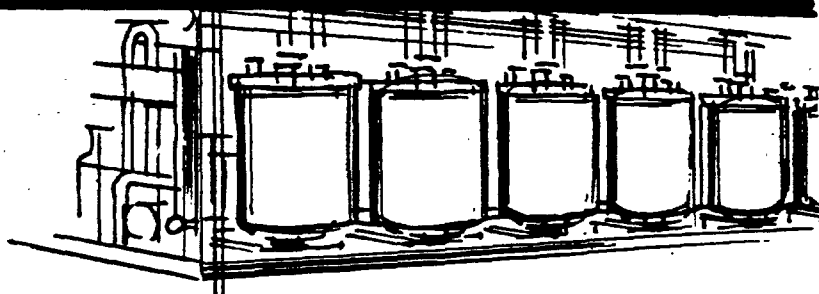
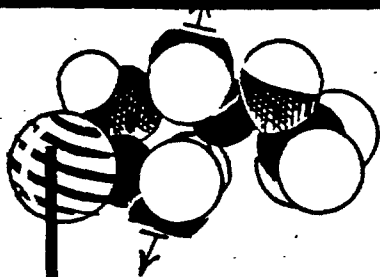
Morton Antler

**P**APERS ON THE ANTIKNOCK mechanism of tetra-ethyl lead and on new ways to reduce wear in automobile engines were given recently by representatives of Ethyl's Detroit Research Laboratories.

Morton Antler told the American Society of Lubrication Engineers that when a beam of fast electrons is passed through or across a solid sur-

face, it is diffracted or broken up into a pattern which "fingerprints" the surface, telling much about changes caused by friction and wear.

Ellis B. Rifkin reported to the API Refining Division that TEL exerts its antiknock properties only after it breaks down inside an engine into tiny particles of lead oxide, which suppress chemical reactions causing fuel detonation.



# From Mole

Fifty years of achievement inspire the Amer

**T**HE AVERAGE BUSINESSMAN of half a century ago was doubtless unaware that a significant forward march was beginning in his decade—which would benefit all mankind in countless ways. But momentum generated on June 22, 1908 not only is continuing more progressively than ever, but it is sure to accelerate to an unlimited extent in the future.

That was the date when a handful of men representing what was then an infant profession organized the American Institute of Chemical Engineers. The corresponding June day of this year marks the start of a week's golden anniversary program in Philadelphia, where the Institute's first meeting was held. Events scheduled recognize past accomplishments, gear its members still more aggressively to solving current problems and pave the way for meeting the challenges and opportunities of tomorrow.

It is possible to appreciate what the Institute and chemical engineers have contributed to modern America only by retrospection.

A 1908 businessman, for example, who took a glass of tap water after awakening in the morning may have ~~scorned~~ <sup>scratched</sup> it after tasting it. Perhaps it never occurred to him that the time would come when municipal water supplies would be crystal clear,

no matter what their sources, because of purification systems developed by chemical engineers.

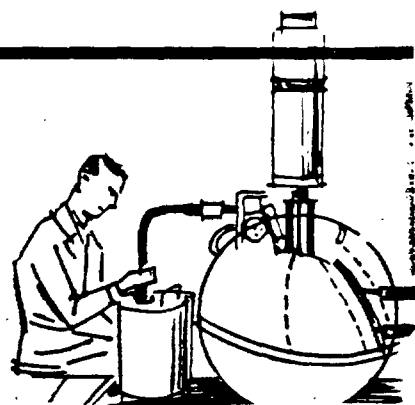
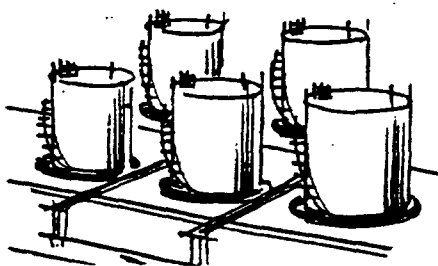
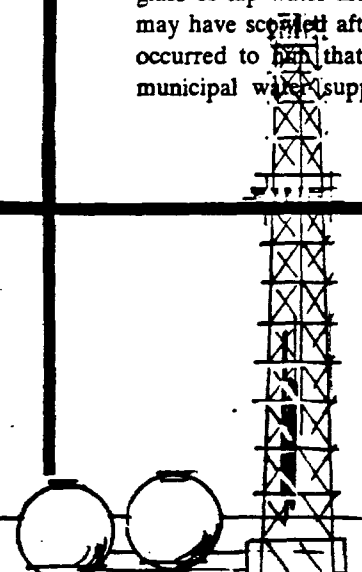
Our typical American of those days, as he dressed and had breakfast, would have smiled tolerantly if he had been told that chemical engineering would have anything to do with the clothing he put on or his food.

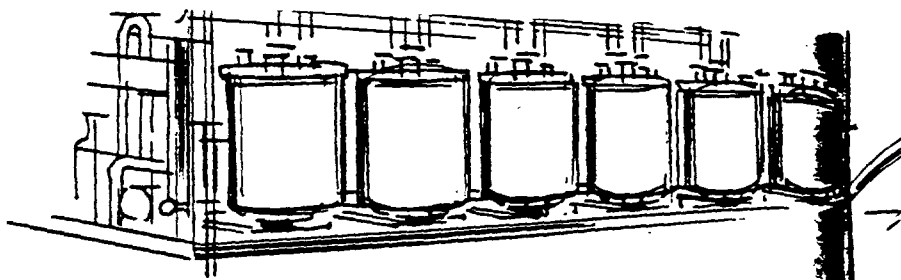
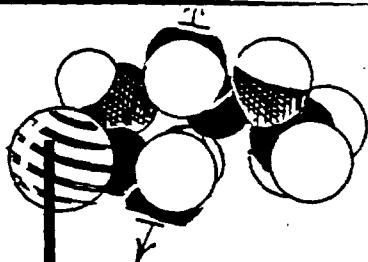
How could he have foreseen that wool, linen, cotton and silk would be replaced or supplemented by fabrics made from coal, petroleum, gas, farm wastes or other unlikely substances? Nor would he have imagined more and better things to eat because of the chemical engineers who now provide vital fertilizers and insecticides.

Whatever way the 1908 man went to work, he experienced none of the comforts and conveniences of modern transportation made possible by metallurgical wonders. Even his morning newspaper and his cigarette were inferior to those we enjoy today.

## Teamwork with Medicine

If he found some of his colleagues away from their desks because of epidemic illness, he would have been amazed to learn that teamwork between medicine and chemical engineering would bring about the mass production of medicines which have virtually ended scores of diseases.





## From Molecu

Fifty years of achievement inspire the American Institute of Chemical Engineers

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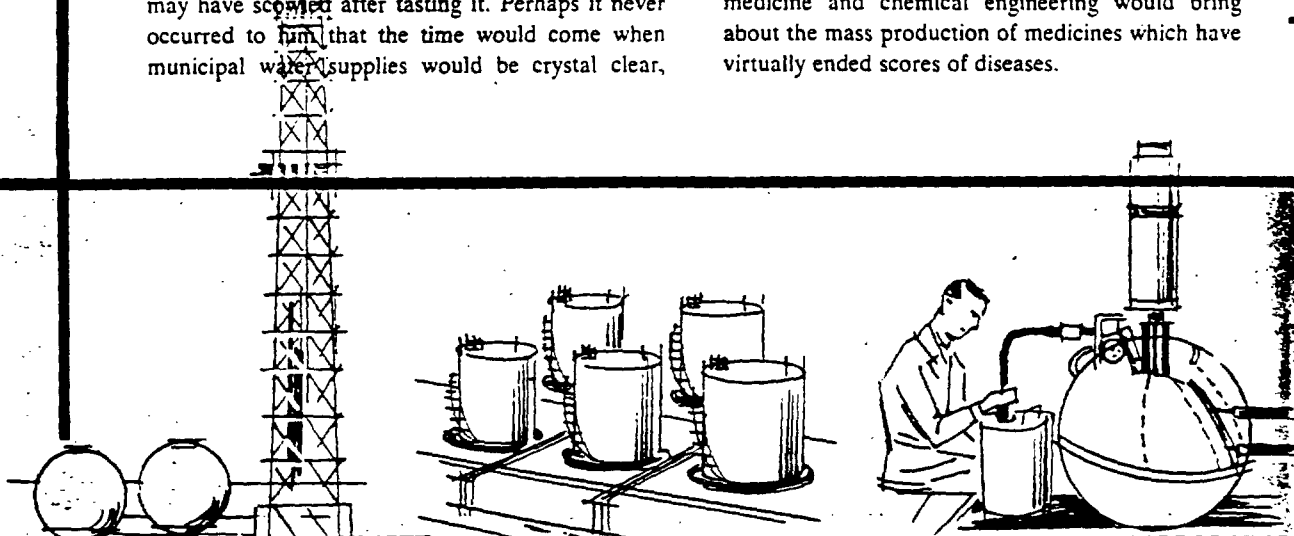
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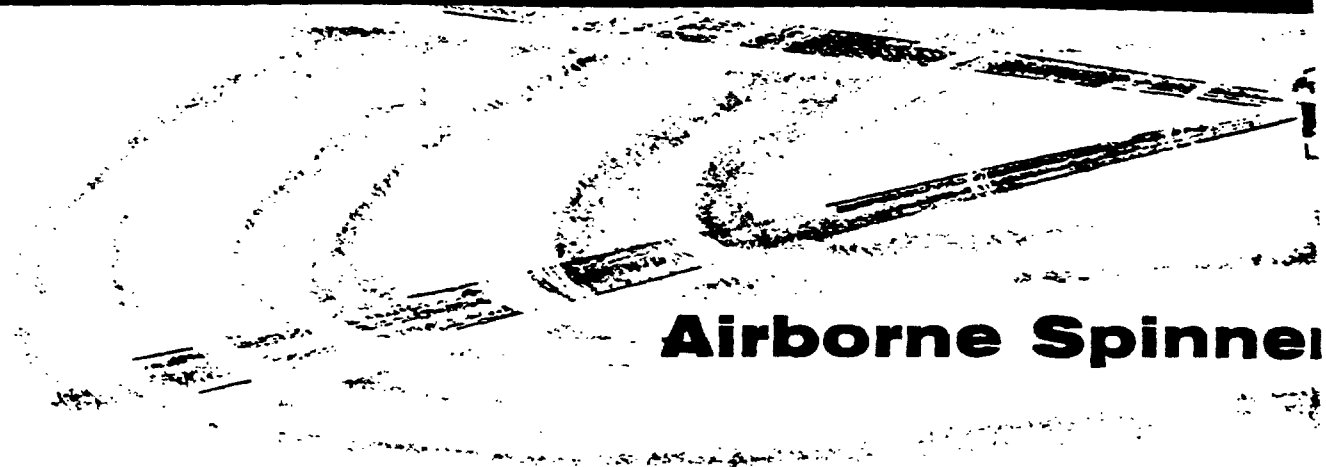
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## Airborne Spinner

The agile, versatile helicopter is a friend of man and a wonder to behold in flight

By Vartanig G. Vartan

**T**HE HELICOPTER, that strange-looking craft that can take off quick as a flash and land softly as a marshmallow, today ranks as one of industry's most versatile flying aids.

In Massachusetts, helicopters dust cranberry bogs to thwart insects. In Texas they help the cowboy to round up cattle. And in the Gulf Coast area they lend a hand in sowing rice.

Spinning rotor blades have earned the helicopter such nicknames as "eggbeater," "chopper" and "whirlybird."

For the oil industry, the helicopter spells savings in time, manpower and money. It has been called "the pack horse of the modern prospector."

Combing the world for new oil reserves, the geologist can skim by helicopter over rugged country that would take weeks to explore on foot or horseback. When he wants to get a closer look at a ground formation, he can hover motionless in an airborne whirlybird.

Every day the helicopter proves its worth in the Gulf of Mexico, where offshore rigs are tapping new oil and gas reserves. Some of these rigs sit in the Gulf 35 miles from the nearest land. To them the helicopters ferry supplies and equipment. They also transport rig crews, cutting a four-and-a-half-hour boat trip down to 30 minutes.

Precision flying is a "must" to offshore rig operators. The helicopter, flying in gusty winds that flick whitecaps on the water, can set down a 4,100 pound slush pump gently on a drilling tender's tiny landing patch.

The biggest of these operations belongs to Humble Oil & Refining Company whose 10 helicopters—operating from a heliport at Grand Isle, La.—shuttle men, equipment and supplies to offshore drilling rigs.

Igor Sikorsky, the aviation pioneer who built and flew the first truly workable helicopter, has described Humble's offshore activities as "the outstanding helicopter operation of its type." (To demonstrate the landing ease of a 'copter, Mr. Sikorsky once suspended a bag containing a dozen eggs from a 10-foot rope. When the whirlybird set down, nary an egg was cracked.)

Petroleum Helicopters, Inc., operating three and 12-seaters, logs about 150,000 helicopter miles a month for its customers. Some 20,000 miles are flown for Gulf Oil Corporation.

A cowboy looks on as a "whirlybird" cruises nearby. Helicopters have proved invaluable on ranches.



## and Trailers

In the jungle-thick islands of the Pacific, the helicopter has given other oil companies a handy and quick way to get heavy drilling equipment in—and out of—areas where months would be needed just to hack out a road.

Three helicopters, for example, hauled into the jungles of New Guinea all the men and equipment necessary for drilling a well. The first piece of bulky machinery was a 25-ton bulldozer which the 'copters flew in piecemeal packages and then followed up with hauling drill rig sections.

### Rotors Conquer Mountains

Experts report that two helicopters can move nearly three million tons of cargo—enough for a complete rig—within two weeks. The equipment usually is loaded in sling style beneath the helicopter body.

The whirlybird makes an ideal “flying crane” in other fields of endeavor, too, as crews ride in arm-chair comfort over rugged terrain. Spinning helicopter rotors conquered the high snows of mountainous British Columbia in helping to build the mighty Kitimat aluminum smelting project.

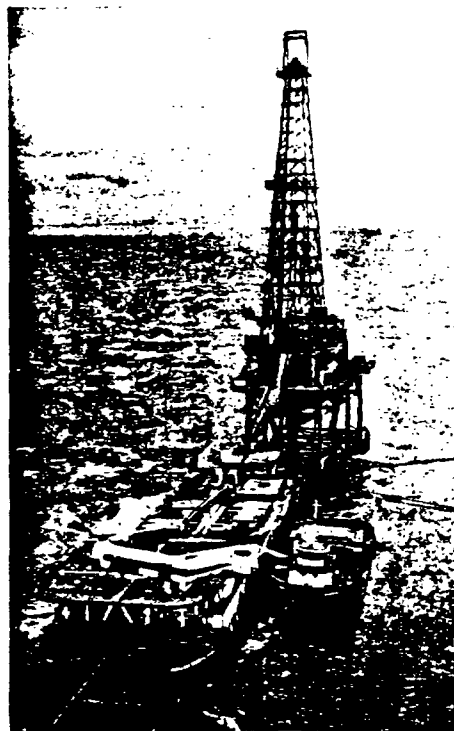
Thanks to its ability to maneuver in any direction through virtually its entire speed range, the helicopter also has been used to lower one-ton electric wire poles into the ground. Earlier this year, a whirlybird from the U.S. Seventh Army transported a 450-pound, 12-foot cross to workers on the roof of a church near Pforzheim, West Germany.

Helicopters are dispatched on an endless variety of jobs. These run from looking for lost deer hunters and towing water skiers to photographing stone-cutter crews at work on top of the Washington Monument.



A mission of mercy is carried out by a U. S. Coast Guard helicopter. Sea rescues are all in a day's work for these planes.

Offshore oil exploration would be a great deal more difficult if it were not for the helicopter's ability to land on small areas.





One of Humble Oil & Refining's helicopters takes off from the company's airport at Grand Isle, La.

New York's police (known unofficially as "chopper coppers") whisk along in the rotary-wing aircraft to untangle weekend traffic jams, spot fleeing lawbreakers and patrol beaches. Helicopters with pontoons, incidentally, can land on water.

And, of course, 'copters are carrying more and more passengers. They provide airport shuttle service in New York, Chicago and Los Angeles. With the advent of jet transports in this country, helicopters will take over many short-haul runs. According to reliable forecasts, by 1965 helicopter fleets will haul 50 million passengers a year.

Businessmen find the helicopter an ideal way to

ship electronic parts and other delicate cargo, and to visit factories and sales offices. Vertol Aircraft Corporation produces a twin-rotor executive model complete with chairs, desks, lavatory and galley.

Taking a look ahead, Bethlehem Steel Corporation observes, "When commuting by 'copter becomes commonplace, your roof can be your own heliport." (Provided that it is supported by a steel frame to stand the strain.)

In the armed forces, the helicopter's versatility has been recognized for years. America's fighting men in Korea affectionately dubbed the helicopter the "mechanized angel." As an airborne ambulance, it saved the life of many a wounded soldier.

### Mercy Missions

Helicopters still carry out their mercy missions. In floods and other disasters, they bring in doctors, medicine and other vital personnel and supplies and do evacuation duty.

Shortly after a Cities Service tanker left Puerto Rico for New Orleans—two days' sailing time away—a crew member suffering from an acute ear infection needed emergency medical attention. A Coast Guard helicopter sped to the ship and hoisted up the ailing seaman. In little more than an hour, he was recovering at a New Orleans hospital.

Today, Uncle Sam ranks as the helicopter industry's best customer. Armed troops and equipment are carried. Other planes are fitted with anti-submarine rockets and cannon. A remote-control whirlybird shows promise for battlefield reconnaissance and target marking. #



The helicopter has become one of the geologist's best friends in his search for oil.



## *Why You Can Have* **CONFIDENCE IN A GROWING AMERICA**

**LOOK AHEAD—AND YOU WILL LOOK UP!**

The future of America is *your* future too. It is as boundless as the imagination of our people. You can judge a little what is to come by what we have already accomplished.

Every year Americans live better. Year by year we have pressed the attack on human misery. Year by year, more of us lead the good life.

There are sound reasons why this is so. Some

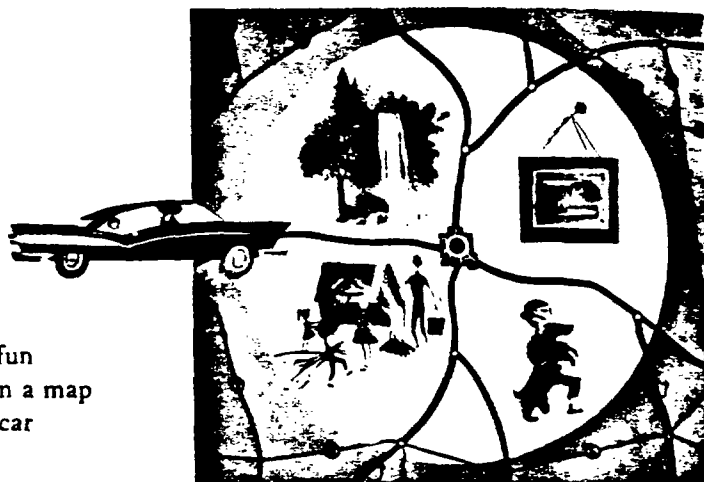
stem from the kind of people we are—inquiring, venturesome, never willing to let well enough alone. Progress is our battle cry.

American business and industry share these characteristics. They are part and parcel of the freedoms we enjoy and our belief in human rights and dignity of the individual.

What they add up to is a future which will far outrun the best promises of today.

# Your car makes any map a Magic Circle

The time: any day you're free for fun  
The place: anywhere around you on a map  
The people: all the family in your car



Head for the hills in your car. It makes mountain-climbing fun for everyone, puts you face-to-face with views that take your breath away as fast as you draw it in.



Discover the hundred-and-one kinds of fun that fan out before you when you drive. Sitting by a picnic fire can top off a perfect day. So can the trip by car.

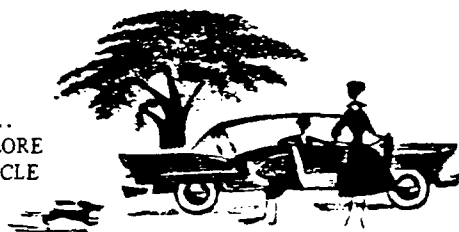


Leave extra time for those extra discoveries that come so naturally by car. A puppy at a pet shop, a country roadstand, a tumbling stream tucked off in the woods.



Learn while you look. It's so easy by car, so comfortable and direct. History-rich landmarks of all kinds lie within free-wheeling distance of your driveway.

DRIVE MORE...  
IT'S FUN TO EXPLORE  
YOUR MAGIC CIRCLE

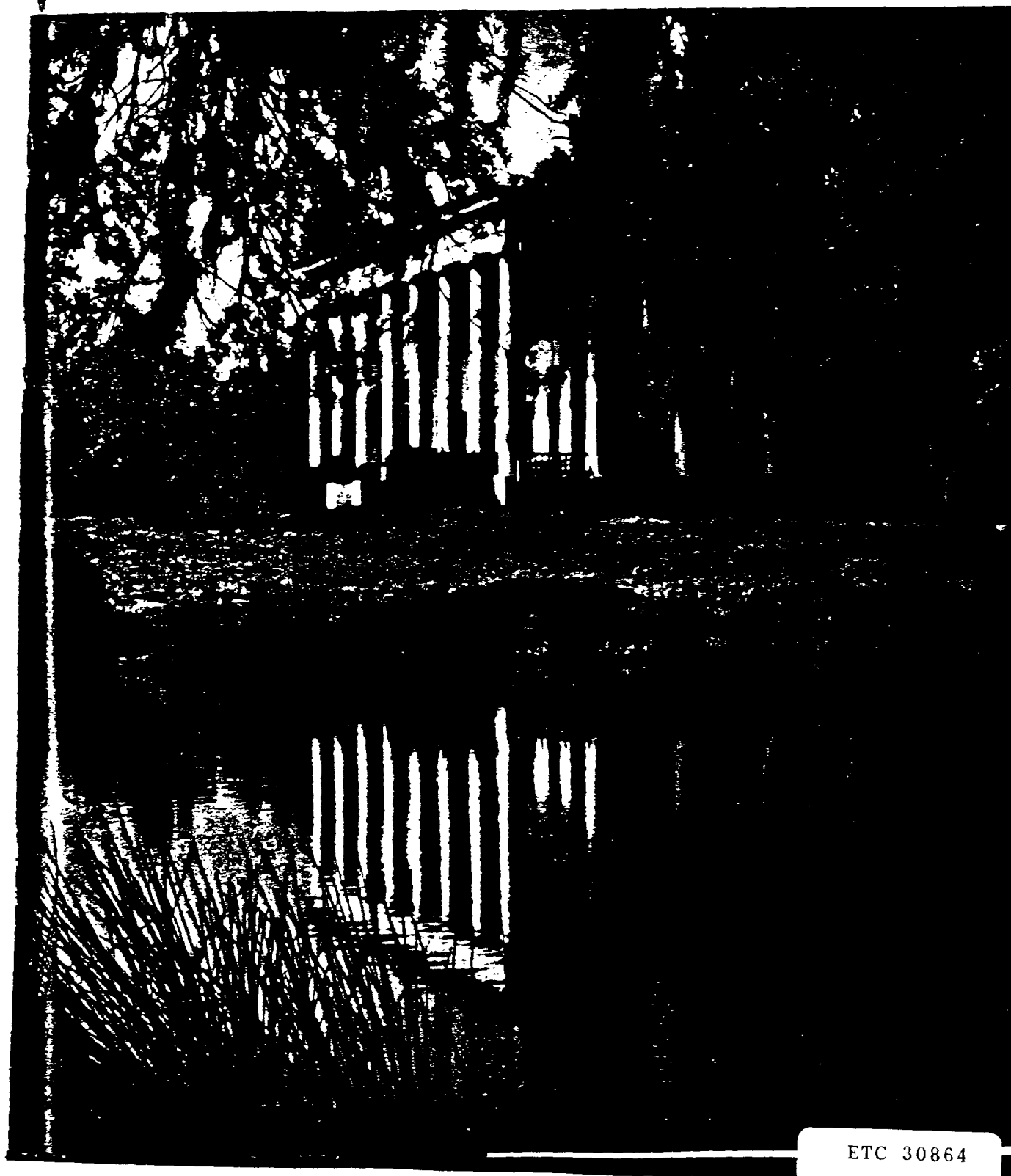


**ETHYL CORPORATION**  
New York 17, New York  
Manufacturers of "Ethyl" antiknock compounds  
... used by oil companies everywhere  
to improve their gasolines and your driving pleasure

ETC 30863

# ETHYL NEWS

JULY-AUGUST 1958



ETC 30864

# ETHYL NEWS

JULY-AUGUST 1958

## ETHYL NEWS



THE COVER: Greenwood, with stately white columns, is an impressive survivor of "Louisiana's Plantation Past" (pages 1-5). Near the Mississippi northwest of Bains, it dates from about 1840 and is owned by the Wallace Percys, descendants of the builder. Greenwood has been used as a setting in several motion pictures about the South.

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## CREDITS:

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ETC 30865



# Louisiana's Plantation Past

Gracious old homes are proud  
remnants of a bygone era

*A portfolio by A. E. Woolley*

THE WARM AIR was filled with the fragrance of magnolias and carefree laughter. The Mississippi River, bearing an occasional steam packet, flowed serenely to the Gulf. Big plantations of sugar and cotton planters were centers of activity. Life moved slowly but surely. This was the South and Louisiana on the Mississippi one hundred and more years ago.

Today the Mississippi still flows to the Gulf—but at a faster pace. Oil tankers, barges and cargo ships churn its waters. Giant industrial plants and bustling commercial centers line its broad levees.

But busy as Louisiana's great river country is, it has not crowded out the plantations of those gracious ante-bellum days. Many buildings are in good repair—maintained or restored by relatives of original owners or by interested antiquarians. At some—where decay, nature and fire have taken their toll—ruins are the only epitaphs of their place in a golden age.

All the plantations—restored or in ruins—provide a glimpse of a time that is gone. For lovers of history and beauty, seeing them is an unforgettable experience. #

Built in 1765, Arceneaux, now the Acadian museum at St. Martinsville, was the home of the real-life counterpart of Evangeline's Gabriel.

ETC 30866

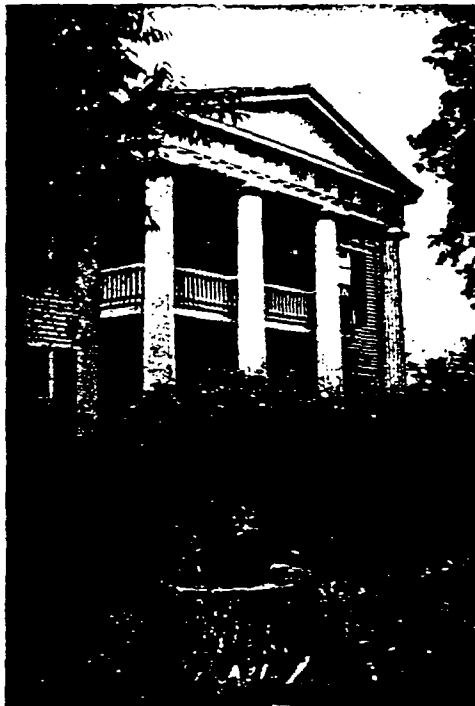
## Louisiana's Plantation Past



The tragedy of time is seen in crumbling ruins—all that is left of some plantations' once-stately buildings. Here are remains of Hermitage, near the town of Darrow, and Belle Grove, near White Castle.

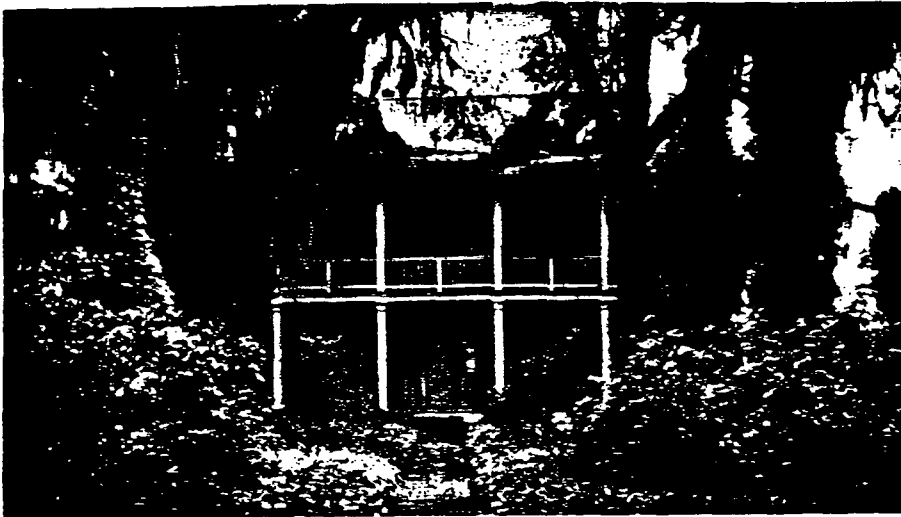


On the east side of the Mississippi, near Reserve, stands San Francisco, built like an old 19th century packet that once cruised

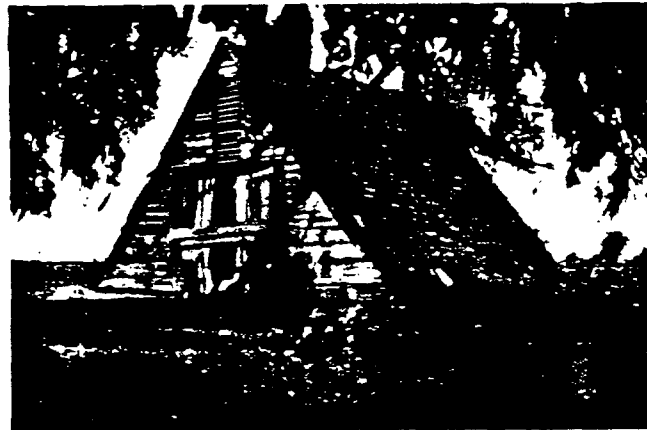


Built in 1850, Rosemead occupies a prominent spot in the town of Jackson. It is open to the public during pilgrimages and features graceful winding stairs, antiques and old glass.





Unoccupied Waverly, above, is near Bains, La. A frame house, it is kept cool and protected by lush green foliage . . . Right, a century-old plantation barn on the old river road.



the river. Dating from 1837 and now owned and occupied by Mr. and Mrs. Clark Thompson, it is open to the public.



The ringing of bells such as this regulated plantation life in ante-bellum days.

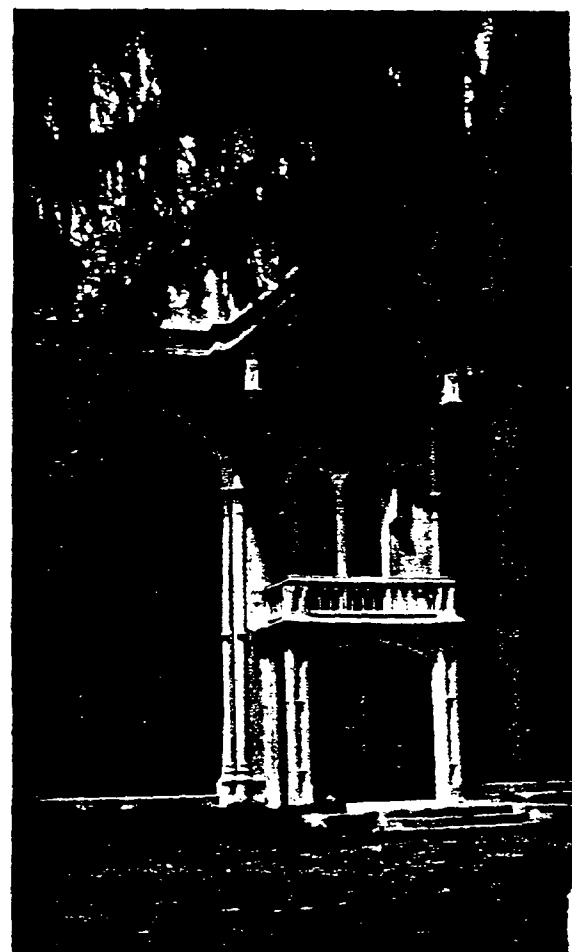
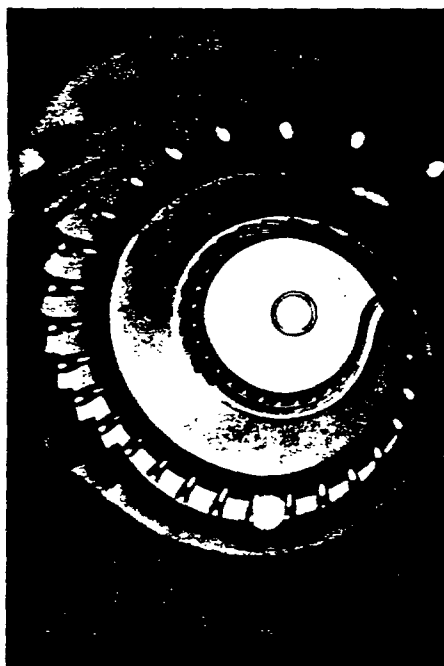


## Louisiana's Plantation Past



Melrose, in the town of that name, houses an extensive library about Louisiana's early years. Noted writers have lived there while researching state history.

Afton Villa, north of St. Francisville, is distinguished for its French-Gothic architecture and formal gardens. The plantation house's music room and circular staircase are pictured at left and left below.

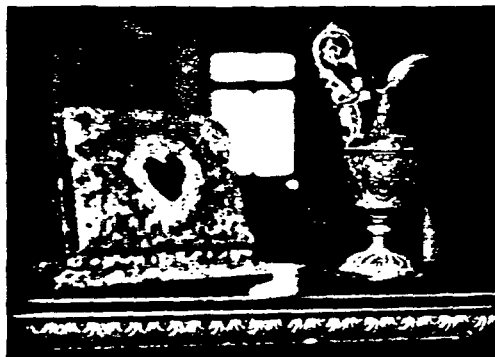




The Shadows was built on the banks of Bayou Teche in New Iberia in 1830 on a land grant made by Spain in 1792. The darkness that creeps across its stately Doric columns in late evening gave the plantation its name.



Above, under the balcony of The Cottage, Greek Revival mansion visited by such notables as Lafayette, Clay and Zachary Taylor. Its lore and heirlooms, two of which are shown left, have been widely heralded.



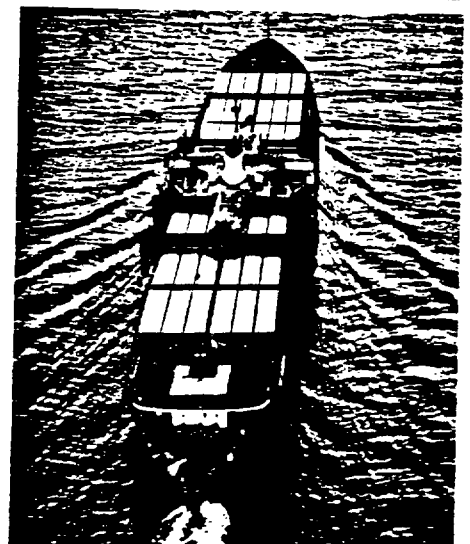
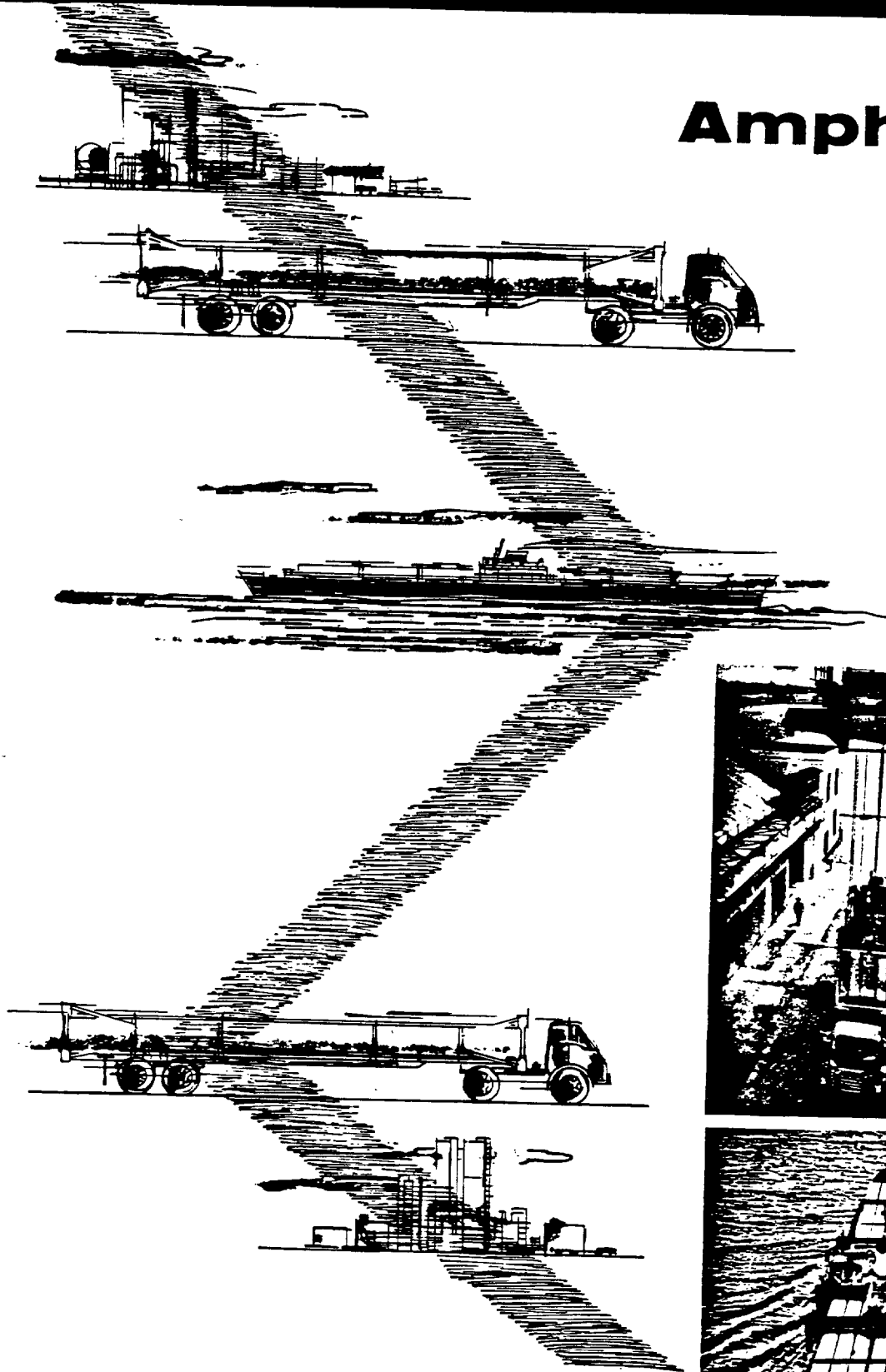
Oakley, in Audubon Memorial State Park near St. Francisville, is the plantation where the famous naturalist became acquainted with wildlife of the Feliciana Country.



Right, this long porch with its wrought iron grillwork is the outstanding feature of The Myrtles, single-story plantation home on the St. Francisville-Natchez highway.



# Amphibious



Top, crane lifting loaded truck body for transfer aboard cargo ship. New Ethyl tanks en route overseas will be handled similarly. Below, C-2 vessel leaving port, showing how shipments are stowed aboard.

# Service for Refiners

## New sea-land tanks for shipping "Ethyl" fluid will benefit customers overseas

ONE DAY THIS FALL a shipment of "Ethyl" fluid aboard a steamer en route for Puerto Rico will become the first of its kind destined to meet the needs of overseas refiners. The pioneering voyage will mark the beginning of a new and improved method of sending antiknock compounds to oil companies outside continental North America.

As the Company's latest step in continuing efforts to expedite and improve deliveries of its principal product, the innovation is a sea-land tank service involving specially designed 2,200-gallon tanks, newly developed truck trailers and C-2 ships utilizing unique cargo handling methods.

The sea-land tank service is designed to speed up and simplify overseas delivery operations by saving time and increasing efficiency at customer company refineries. Blending plant personnel will be able to unload the new large-capacity tanks much faster and with far less effort than would be required to handle an equal amount of "Ethyl" antiknock compound in conventional drums.

### On Wheels and Keels

Each tank is loaded when it is on the frame of a truck trailer and fastened in position by special latches. Driven to an oceanside port, the tank is then lifted aboard ship by crane for the balance of its transit.

Upon arrival at an overseas port, it is lifted off the ship to another truck trailer and driven to the customer refinery.

The sea-land tanks are fitted with domes which permit unloading in much the same way as railroad tank cars or tank trucks. The overseas units can be emptied while still mounted on truck trailers. Empty tanks are then shipped back to Ethyl's manufacturing plants in the United States for another loading and delivery cycle.

Owned by Ethyl Corporation, the special containers are made from steel designed to resist shock and impact during transit. They have been constructed to meet all requirements of government agencies under whose jurisdiction the sea-land transportation falls. The steamship company han-

dling the ocean-borne part of the service introduced its unique method of carrying packaged bulk cargoes of various kinds early this year.

The start of Ethyl's sea-land service will form another important link in the Company's domestic and overseas deliveries.

In the United States and Canada, more than 650 railroad tank cars, with capacities of 3,000, 6,000 and 9,000 gallons, are continuously rolling to serve the oil industry. These fleets, among the largest of their kind, are owned and operated by Ethyl Corporation and Ethyl Corporation of Canada Limited, and are used only for shipping "Ethyl" antiknock compounds.

The Company's 34 leased railroad sidings, located at strategic points throughout the country, are added assurance of prompt deliveries. Loaded cars stored on these sidings are always ready to roll and so serve as a handy reserve to meet any refiner's emergency situation.

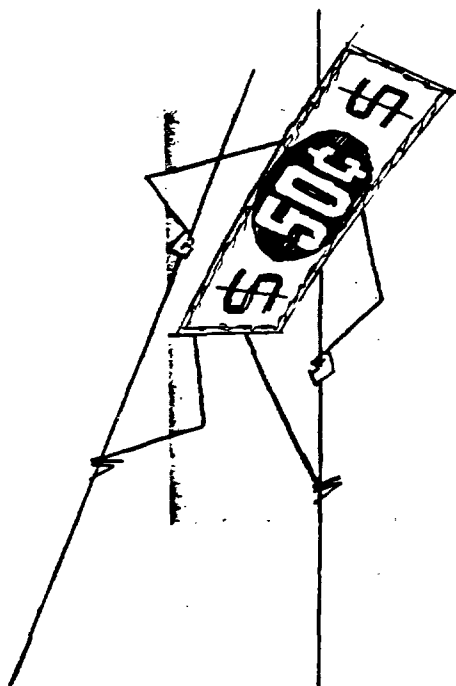
In addition to storage at its manufacturing plants at Baton Rouge, La., Houston, Texas and Pittsburg, Calif., and the Ethyl of Canada plant at Sarnia, Ontario, Ethyl maintains storage terminals which also serve as supply points for customers. These terminals are located at Edge Moor, Del., Wilmington, Calif., and Everett, Wash.

### Delivery Know-How

In certain areas, Ethyl also delivers antiknock compounds in special tank trailer trucks. Additionally, the Company has railroad tank cars for the delivery of "Ethyl" sodium, ethyl chloride, chlorine and vinyl chloride.

The Company has more than 30 years' experience in preparing overseas shipments, obtaining export licenses, arranging for the most expeditious methods of shipment and best routings, and in shipping antiknock compounds.

This provides Ethyl Corporation with the know-how for getting its products to oil refiners throughout the world with maximum promptness and efficiency. The introduction of the new sea-land service is the latest step in this direction.#



America's "elder statesman" urges us to  
insure the nation's economic health  
by firm control of rising . . .

## Inflation-

by Bernard M. Baruch\*

**I**NFLATION IS THE MOST important economic fact of our time—the single greatest peril to our economic health. Its most important cause has been the tremendous expenditures for war—for non-productive goods and services—financed too largely through borrowing and too little through taxes.

Inflation is primarily responsible for our mountainous national debt, for our high tax rates, for our record high level of expenditures, in what is called a time of peace. It has put our price struc-

ture on stilts and whittled down the purchasing power of the dollar. As the Government and our citizens stumble under its burden, continuity of confidence is broken, and a growing concern serves as an added drag on our economic activity.

The inflation of our time flows from the selfish struggle for special advantage among pressure groups. Each seeks tax cuts or price increases or wage raises for itself, while urging the other to make the sacrifice and with little regard for the best interest of the nation as a whole.

### Mortgaging the Future

This was true in World War II and in the Korean war. In both wars we ignored the lesson of experience which taught that the way to curb inflation and profiteering was to pay for war as nearly as possible out of taxes; to control prices, wages, profits, money and credit, and thus provide a common standard fair to all. Instead, we invited inflation by controls too little and too late, and by

\* The accompanying article is condensed from testimony given by Mr. Baruch before the Senate Finance Committee earlier this year.



ETC 30873



Mr. Baruch, author of this article, testifying at a Senate Finance Committee Session.

## Our Greatest Peril

concessions too much and too soon to special-interest groups. We mortgaged future generations by inadequate tax programs.

This was true after World War II when, instead of maintaining our strength until peace was assured, we prematurely disbanded our forces and abandoned necessary tax and other economic measures. And, after Korea, at the first sign of the inevitable post-inflationary readjustment, we injected a fresh dose of inflation into our system by reducing taxes.

In our recent painful process of readjustment, the same recourse to inflation was urged. The same struggle for advantage was repeated. Each group wanted to shift the burden of dislocation to someone else. Each wanted special consideration, arguing that its wages or prices or profits must be kept up to avoid depression.

All cried for tax reduction, deficit financing, pump priming—running to “mother Government” to “do something so we won’t have to pay for the mess we’ve made.”

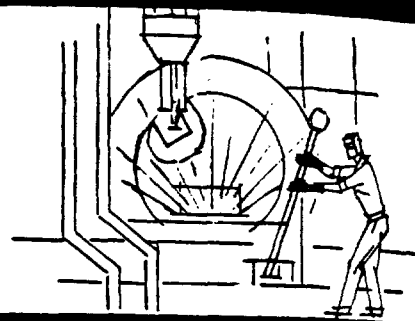
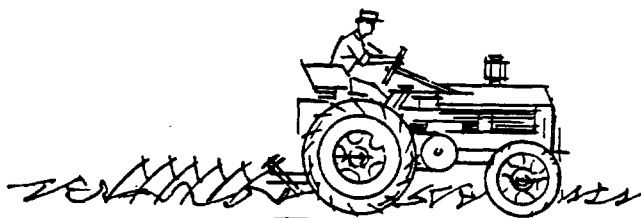
Nothing is more dangerous than this notion that economic salvation lies in Government intercession. Let us not turn always to the Government for succor, but remember rather that a free government depends always upon the people for sustenance. When I hear people demanding Government do this or that I wonder why those voices were so silent when inflation could have been controlled.

Government does have a responsibility and a role to perform, but its actions must be in harmony with sound economic principles. Government cannot repeal economic laws.

In the face of a tremendous national debt and

If more people save more of their money, the nation will gain economic strength.





expenditure, it is folly to talk of tax reductions.

A nation, no less than an individual, must keep its financial house in order. Its financial strength will determine its capacity to withstand economic adversity. The credit of the United States Government is the foundation upon which our solvency and security rest.

We are not likely to enjoy surplus revenues soon. Yet there is no greater thing Congress could do to strengthen confidence and create jobs than to adopt now a long-range fiscal program designed to reduce our national debt.

Not until the Government puts its house in order will the people know how to bring order to their own affairs.

Debt management also has been made more difficult and expensive by the shortening of maturities. Now, more than \$80 billion, almost 30 percent of the debt outstanding, are on a short-term basis. I cannot understand why those in authority did not move earlier to refund the debt when the money market was easy. If private corporations could refund and borrow at rates as low as 2½, why couldn't the Government?

#### Up to Individuals

We must face, however reluctantly, the truth that Government action is no nostrum for economic health. Nor is it a substitute for individual responsibility. The adjustment must be made by each of us, in our business, our job, on our farm. We must work harder, cut costs, save more.

No one wishes to see us return to cutthroat competition with its price wars and wage cuts. No one is more concerned to see labor preserve its

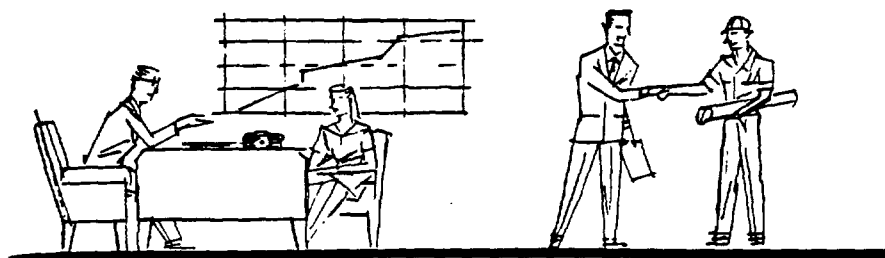
gains than I am. But we must halt the wild, unmerited chase of prices, wages, and profits.

We prefer not to compel this by legislative fiat or executive order. We rely upon individual action, self-discipline, and enlightened selfishness of labor and industrial leaders. If they cannot recognize that self-interest requires concern for the national interest, then they and the nation as a whole will be made to suffer. If they will not adjust voluntarily and in time to the law of supply and demand, the adjustment eventually forced on them will be much more painful.

It would be an inspiring and salutary thing if the leaders of our great labor unions and businesses would jointly pledge to the President that for one year there will be no increase in wages or prices



Consumers who "buy things . . . they want but do not need" build up destructive debts. Mr. Baruch urges more intelligent use of credit.



and that profit margins would at least be frozen. Individual self-restraint should be exercised, too, in the area of private credit. Its excessive growth has been one of the major factors in our present difficulties and is one of the weak links in our economic chain. When individual indebtedness alone rises above \$200 billion, we have reason to be concerned.

I have often been shocked by the lengths to which banks, merchants and advertisers go to press credit upon the consumer with which to buy things they can be persuaded to want, but do not need. The susceptibility of the American public to these continuing blandishments troubles me.

#### Correct Mistakes

In the last analysis, we face a test of character and common sense. Have we so deluded ourselves that we take seriously the Alice in Wonderland notion that the cure for indebtedness lies in more debt; and that thrift is antisocial? Or do we have sufficient economic sense—and courage—to face the facts of our situation, recognize the mistakes we have made and correct them in time, without incurring the heavier penalties which delay and evasion will exact?

We can restore confidence along with economic health by sound measures which include:

(a) Determining the requirements of national security and doing all that is needed to meet them.

(b) Barring new inflationary adventures. Foregoing tax reductions. Avoiding deficit spending.

(c) Strengthening the credit of Government by refunding the debt on a long-term basis and planning definite amortization.

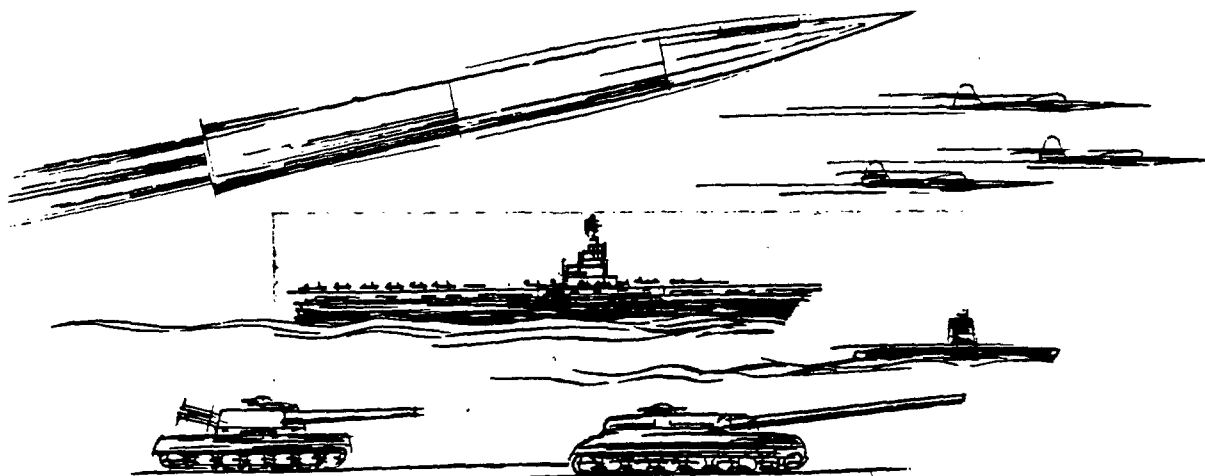
(d) Stopping the price-wage spiral and the abuse of credit.

Ours is a country of boundless natural and human resources, of scientific and technological skills that defy obstacles and frontiers. The future holds promise if only we have the wit and discipline to use them properly. And let us not complain about our surpluses of food, fiber, and metals. If we do not add to them but manage them intelligently, they will give us a reserve against any emergency of war or nature more precious than the gold of Fort Knox.

In closing I offer for your meditation a thought expressed by one of the wisest Americans, Benjamin Franklin, who said—and I quote:

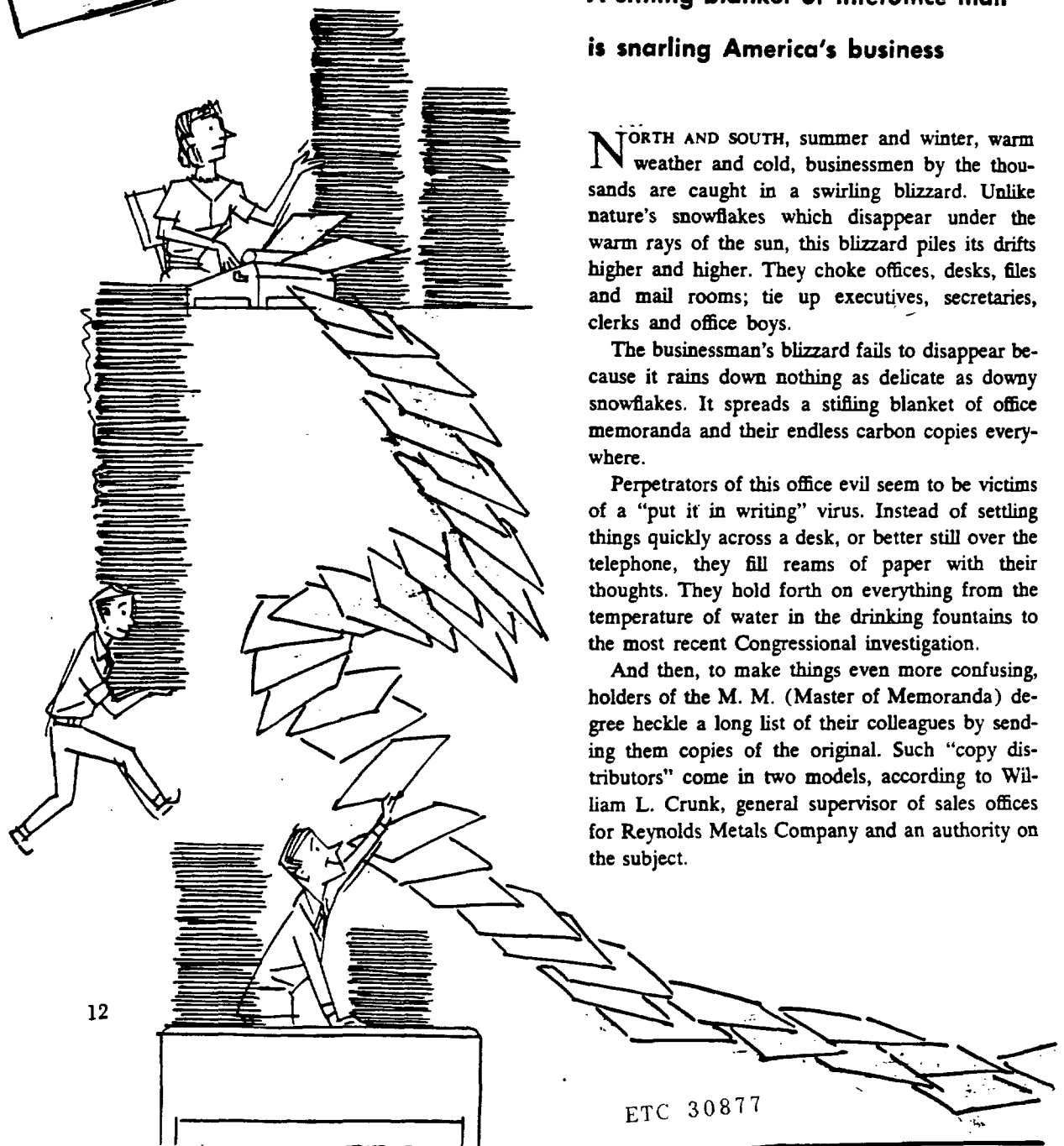
"The taxes are indeed very heavy, and if those laid by the Government were the only ones we had to pay, we might more easily discharge them; but we have many others, and more grievous to some of us.

"We are taxed twice as much by our idleness, three times as much by our pride, and four times as much by our folly; and from these taxes the commissioners cannot ease or deliver us by allowing an abatement." #



# Is this memo necessary?

**A stifling blanket of interoffice mail  
is snarling America's business**



**N**ORTH AND SOUTH, summer and winter, warm weather and cold, businessmen by the thousands are caught in a swirling blizzard. Unlike nature's snowflakes which disappear under the warm rays of the sun, this blizzard piles its drifts higher and higher. They choke offices, desks, files and mail rooms; tie up executives, secretaries, clerks and office boys.

The businessman's blizzard fails to disappear because it rains down nothing as delicate as downy snowflakes. It spreads a stifling blanket of office memoranda and their endless carbon copies everywhere.

Perpetrators of this office evil seem to be victims of a "put it in writing" virus. Instead of settling things quickly across a desk, or better still over the telephone, they fill reams of paper with their thoughts. They hold forth on everything from the temperature of water in the drinking fountains to the most recent Congressional investigation.

And then, to make things even more confusing, holders of the M. M. (Master of Memoranda) degree heckle a long list of their colleagues by sending them copies of the original. Such "copy distributors" come in two models, according to William L. Crunk, general supervisor of sales offices for Reynolds Metals Company and an authority on the subject.

ETC 30877

"The first is the 'line of authority type,'" says Mr. Crunk. "He sees to it that your boss, your boss' boss, his boss, his boss' boss and usually several vice presidents get copies. . . . The second is the 'inter-departmental type.' He may not distribute as many copies but he always manages to send one to an executive in another department. Invariably, this results in a request for copies of previous copies or an explanation of what it is all about.

"When I receive a letter which indicates that copies have been sent to five or six people," says Mr. Crunk, "I deliberately reply without distributing copies. I have never had a request to furnish a copy because, as I surmised, the copies weren't needed in the first place."

Alas, Mr. Crunk is not in the majority! Far more prevalent are distributors of five, six and even ten copies of apparently simple memoranda. These people set off chain reactions that spread copies from one end of their companies to another.

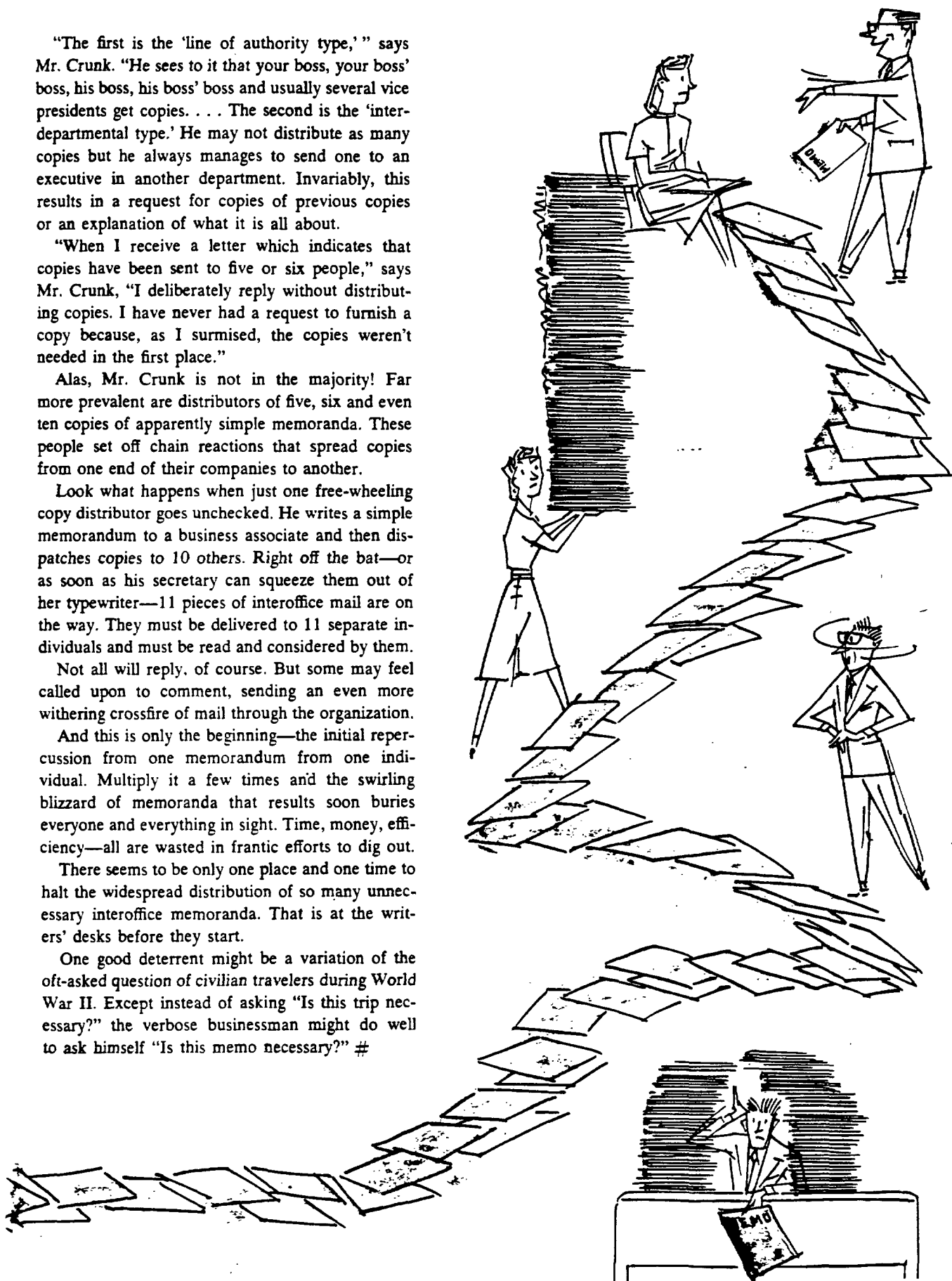
Look what happens when just one free-wheeling copy distributor goes unchecked. He writes a simple memorandum to a business associate and then dispatches copies to 10 others. Right off the bat—or as soon as his secretary can squeeze them out of her typewriter—11 pieces of interoffice mail are on the way. They must be delivered to 11 separate individuals and must be read and considered by them.

Not all will reply, of course. But some may feel called upon to comment, sending an even more withering crossfire of mail through the organization.

And this is only the beginning—the initial repercussion from one memorandum from one individual. Multiply it a few times and the swirling blizzard of memoranda that results soon buries everyone and everything in sight. Time, money, efficiency—all are wasted in frantic efforts to dig out.

There seems to be only one place and one time to halt the widespread distribution of so many unnecessary interoffice memoranda. That is at the writers' desks before they start.

One good deterrent might be a variation of the oft-asked question of civilian travelers during World War II. Except instead of asking "Is this trip necessary?" the verbose businessman might do well to ask himself "Is this memo necessary?" #



# Ladies Night at the Lab

**Trip takes Long Beach Desk and Derrick Club members to Ethyl research center**

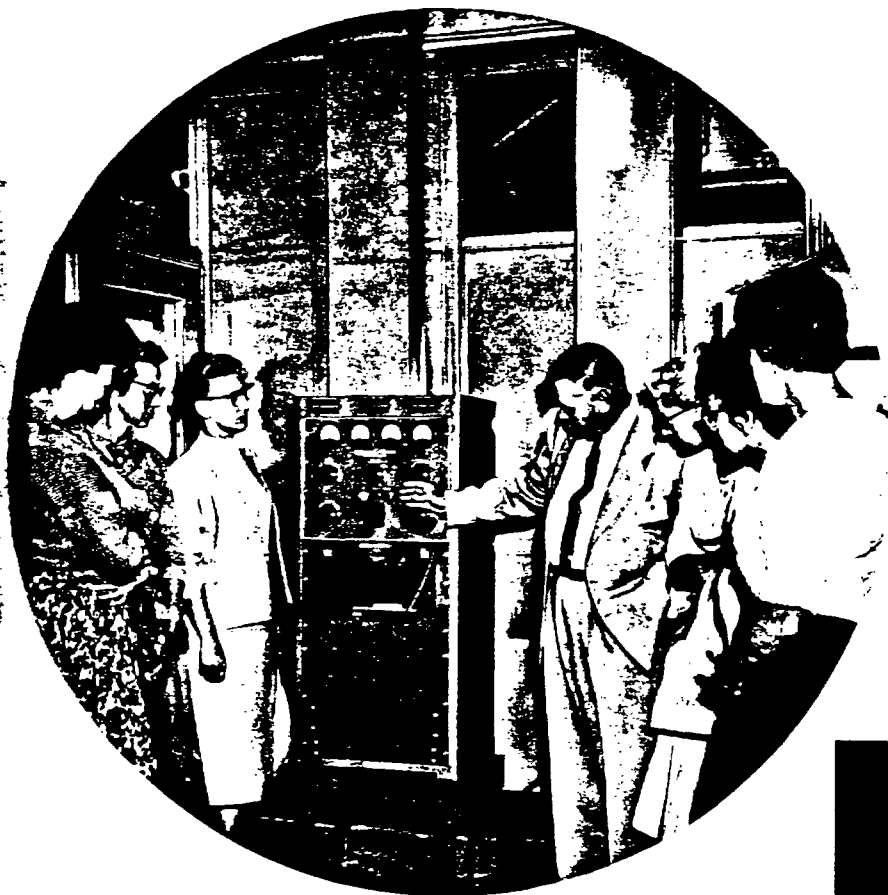
**L**IKE THE MEMBERS of sister clubs across the United States and Canada, ladies of the Long Beach, Calif., Desk and Derrick Club are thirsty for knowledge. They want to know more about the vast petroleum industry in which they work. They want to understand more fully where oil comes from, how it is found and produced, how transported, refined, and marketed, how it is tested and analyzed and how new uses for it are developed.

So it is that the Long Beach Desk and Derrick Club devotes a large share of its meetings to educational programs. It supplements these programs with field trips to producing areas, refineries, manufacturing plants and research centers.

One such field trip, earlier this summer, took the Long Beach ladies to the Ethyl Corporation road testing and gasoline testing laboratories at San Bernardino, Calif., some 80 miles inland from the Pacific Coast oil producing center where they work.

Here, as Ethyl's guests, members of the Long Beach Desk and Derrick Club learned about some of the tests fuels are subjected to in the laboratory and on the road. They were told how information from these tests is used by Ethyl Corporation and by oil refiners to advance the efficiency of motorized transportation.

Arriving at the laboratories in the afternoon, the ladies spent the time before and after a buffet dinner visiting the controlled weather rooms, the test fleet garage, inspecting instrumented vehicles of Ethyl's test fleet, being shown the latest road and laboratory gasoline testing facilities and procedures, and seeing the many other aspects of the local operations. It was late when the oil ladies started on the long return trip home, but it was worthwhile. Once again, they had added new information to their growing knowledge of the diverse industry of which they are an important part. #



Visiting Desk and Derrick Club members learn from Robert W. Adams, gasoline testing laboratory manager, how an X-Ray photometer determines the tetraethyl lead content of gasoline with speed and accuracy.

The ladies from Long Beach interrupted their educational tour long enough to enjoy buffet dinner provided by their Ethyl Corporation hosts.



Mrs. Birtiemae Hook, club president, spoke during the dinner hour, explaining the background of the Desk and Derrick organization and expressing members' appreciation for the tour.

Robert S. Carleton, Ethyl refinery technologist, explains vehicle cooling air duct in controlled weather room. This equipment maintains same velocity of air blowing on vehicle undergoing indoor test as the vehicle would be subjected to on the open road.



Left, on arrival at the laboratory, Desk and Derrick Club members refreshed themselves at a large cool bowl of California orange juice. Introductions were made, pictures taken and former acquaintances renewed.

Right, while group guide Charles O. White, Ethyl product service engineer, and interested Club members listen intently, Miss Carol Simcock, Ethyl engineering technician, explains performance charts taken from test vehicles.





William E. Adams, Ethyl engineering technician, shows a group how an operator can use a microphone to talk with vehicle test specialist operating a car on chassis dynamometer in controlled weather room directly in back of large plate glass window.

Right, facilities in the ready room, where vehicles to be tested are set up and calibrated, are displayed to an attentive Desk and Derrick group by Walter Bradley, laboratory engineer.



Below, concentration is reflected on the faces of this foursome as they listen to Dean Painter, knock testing technician, explain the operation and function of a knock testing engine.



For over a decade, ten companies on the deep sea channel at Corpus Christi have been successful in . . .



Equipment is always ready at the company's four station

## Teaming Up on Fire

By Stanton P. Nickerson

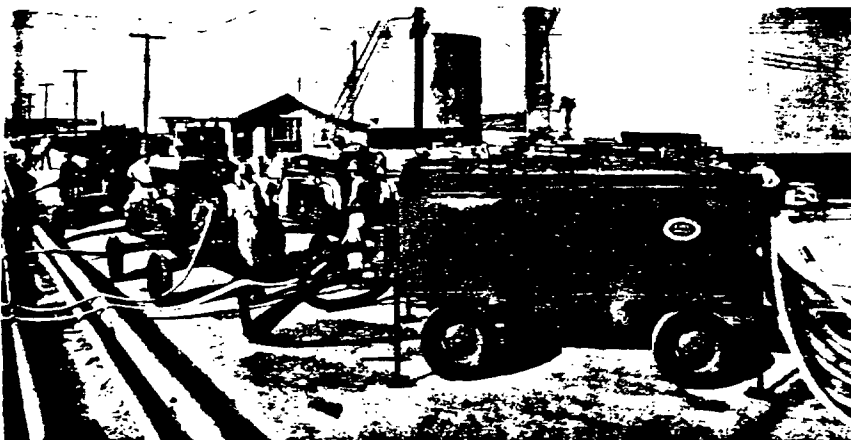
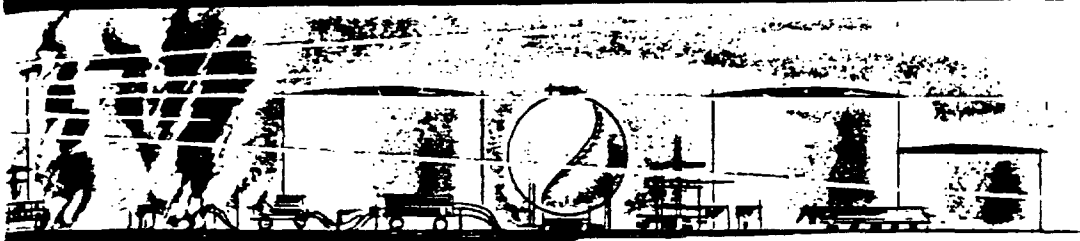
WHILE much of the oil industry's progress can be traced directly to competition, oil companies are aware that for mutual protection in case of emergency, nothing takes the place of close teamwork.

This principle underlies the organization and activities of the highly successful Corpus Christi Refinery-Terminal Fire Company. Pooling common resources, ten oil and other industrial companies on the deep sea channel at Corpus Christi, Texas, recently completed a decade of sponsorship of this fire fighting organization.

The company was one of the first cooperative organizations for mutual assistance set up after the grim Texas City disaster of 1947. It was organized by Corpus Christi oilmen to prevent any similar holocaust from sweeping their refineries, terminals and tank farms.

Careful planning, extensive manpower training and the use of modern methods and equipment have paid big dividends. No serious conflagrations have hit more than one member's property at this Gulf Coast oil and chemical center since the fire company was established. Round-the-clock availability makes it a tireless and efficient protector of multi-million-dollar facilities and more than 20 million barrels of crude and finished products concentrated in a one-by-three-mile area.

Even if the cooperative fire fighters were never called upon for an emergency, their existence alone would be worthwhile. Recognizing their value in supplementing the work of individual oil companies' fire fighting facilities and the Corpus Christi municipal fire department, the National Board of Fire Underwriters has reduced insurance premiums for participating companies. These companies include Pontiac Refining, Southwestern Oil, Southern Minerals, General American Tank Storage Terminals,



Weekly instruction and drill train firemen to handle almost any emergency.

Delhi-Taylor Oil, Magnolia Petroleum, Great Southern Chemical, Republic Pipe Line, Texas Pipe Line and Suntime Terminals.

The fire company's normal complement includes 40 men always ready for action under the supervision of a chief and assistant chief. Two hundred and fifty more volunteers can be called upon if needed. All are regular employees of member companies, serving as firemen in addition to their jobs.

Training is the touchstone of the Refinery-Terminal Fire Company's efficiency. Regular firemen report at headquarters weekly for instruction and drill. Member companies also send additional personnel to become familiar with equipment and methods. These reserves give the fire organization enough extra manpower to meet any foreseeable disaster threat.

When an alarm is sounded, response is professionally immediate and smoothly coordinated. Member companies' trucks speed to one or more of four strategically located Refinery-Terminal fire stations. They tow apparatus, supplies and equipment, which

are mounted on trailers ready for action, to the scene of the fire. These include foam powder, foam generators, pumps, rotary compressors, portable tanks, hoses, foam towers, extinguishers and all equipment necessary to control tank fires by air agitation techniques.

Any member which needs Refinery-Terminal services reimburses the fire company for expenses incurred. These may include labor, supplies and replacement of or repairs to equipment.

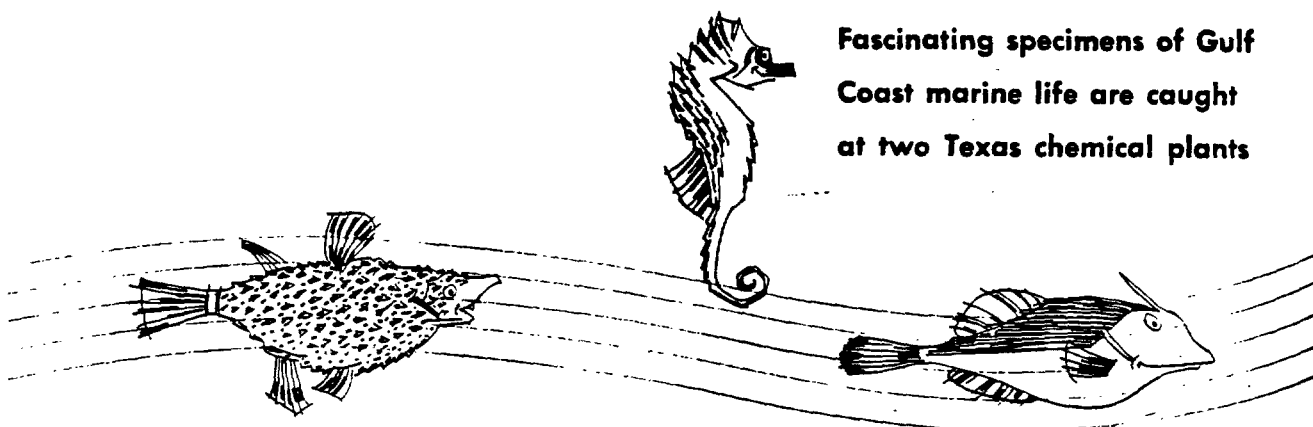
Taking its cue from business, the mutual fire company has a 10-man board of directors, each one representing a member organization. A president, vice president and other officers are elected annually for one year.

Largely because each participating member has such effective means for prevention and control of fire on its own premises, the Refinery-Terminal company has been called upon only once when circumstances were critical. This single occasion clearly established the organization's invaluable role at Corpus Christi. #



# Gifts from the Sea

Fascinating specimens of Gulf Coast marine life are caught at two Texas chemical plants



By Harry H. McGraugh

THERE'S AN OLD SAYING among sailors that the sea is richer than the land. While mankind has only begun to investigate this aphorism, many scientists believe that eventually civilization will draw as heavily on the oceans as it now does on the land for the materials of life.

Two enterprises supporting this belief are the Ethyl-Dow Chemical Company and Dow Chemical Company plants at Freeport, Texas. Here, large quantities of bromine and magnesium are extracted from the waters of the Gulf of Mexico. Most of the bromine recovered from the sea is converted into ethylene dibromide, an important ingredient of "Ethyl" antiknock compounds for motor and aviation gasolines.

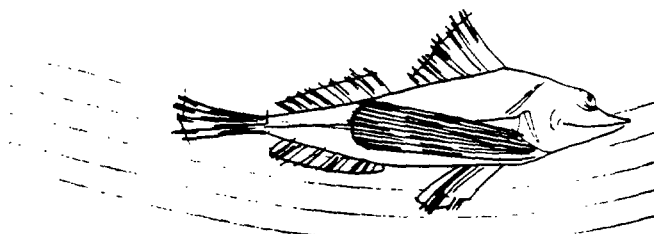
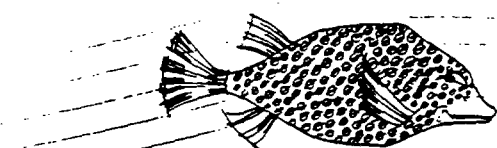
The huge quantities of sea water used by the plants provide a rare and fascinating by-product, or

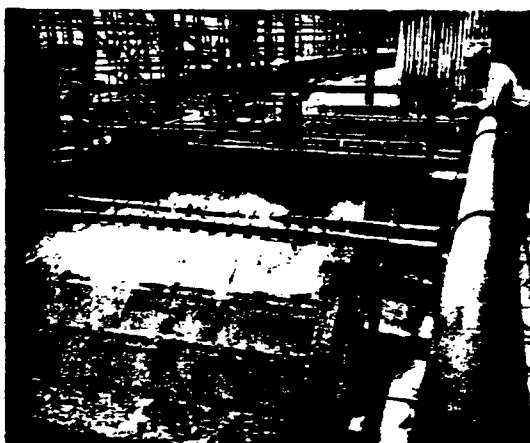
perhaps side-product—multitudinous specimens of marine life. Since on each working day, Gulf waters pass through the huge intakes at the rate of thousands of gallons a minute, many fish naturally are drawn in too.

To prevent the fish from being pulled through the pumps, a series of screens has been erected at the plants' intakes. It is from Dow plant intake screens that marine specimens are collected.

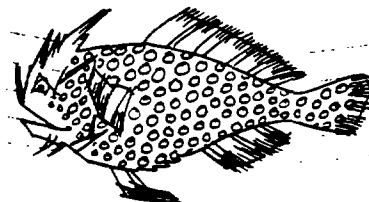
While to many people fish may be only a gastronomical delight, especially when pan-fried after being freshly caught, to the naturalist whose life work is collecting, identifying and classifying them, the inhabitants of the sea arouse a much more profound interest.

Ichthyologists, as those zoologists who specialize in fish are called, have found the specimens a never-





Left, operators collect specimens from traveling screens by hand. . . . Above, fine screens remove small marine life from water before it enters power plant condensers.



ending source of rewarding study. For almost any of the 275 different varieties of marine life that are known to live in the Gulf of Mexico are likely to show up at one time or another on the intake screens.

The usual samples include ropelike fish, among them ribbonfish and eels, and flat fish such as the flounder and sting ray. There also are the short-nosed batfish; the rough, leathery-skinned Tortugas filefish; the fantastically formed and colored sargassum fish; the spiny boxfish; the ten-armed small squid; the scaleless, slimy-skinned spotted toadfish; the walking sea robin; the horned cowfish; and many other rare specimens.

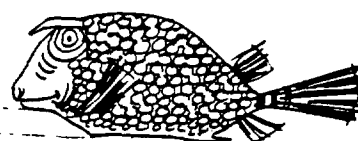
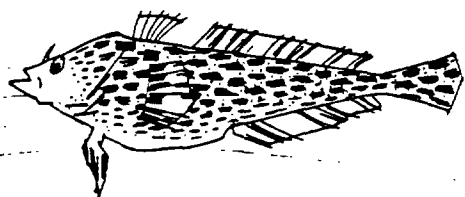
Usually, operators at the seawater intakes remove the fish from the screens by hand, using only rubber gloves for protection. Most of the specimens are

preserved for later study by ichthyologists in a solution of formaldehyde and water.

From time to time, however, displays of live marine life are prepared for fairs, museums and other exhibitions. When collections of this nature are being assembled, the fish specimens are placed in large containers of sea water so that they may be seen under more natural conditions.

Two of the institutions that have greatly benefited by the marine life collected at the Freeport plant are the Museum of Natural History at Houston and the Marine Laboratory of the Texas Game and Fish Commission.

The contributions have been especially helpful at the Houston museum, reports Director Robert A. Vines, adding to the inventory of specimens that are rare even to Texas Gulf waters. #



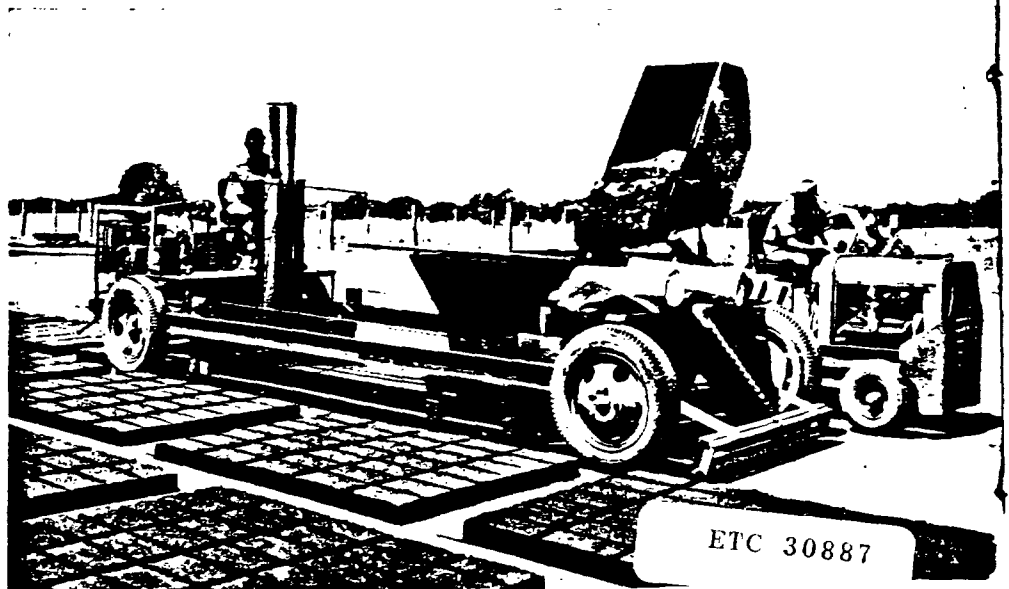
# Mud Goes Modern

Petroleum chemistry has transformed ancient adobe into  
a durable and attractive building material



Left, crude, unimproved adobe was widely used in the construction of houses in Mexico and the old Southwest.

Below, nowadays, self-propelled and towed machines turn out large, solid new-type adobe bricks in quantity.





Stabilized adobe brick can be used successfully in construction work in any climate or country.

By Jack B. Kemmerer

IN THIS DAY of ranch and split-level houses, made of pre-fabricated panels, glass, plywood, synthetics, and other modern building materials, a substance as primitive as adobe might seem to be a mere curiosity from man's unenlightened past. Adobe, to many people, is sun-baked mud. It is something they read about in their school days; something that was used in the foundations of the Egyptian pyramids and in the houses of Mexico and the old Southwest.

Now, however, because of petroleum chemistry, adobe is used successfully as a building material. What's more, new type adobe is waterproof, sound-proof, fireproof and a superior insulator.

For many years petroleum chemists searched for an effective way to waterproof soil materials. Finally, the American Bitumuls & Asphalt Company, a subsidiary of Standard Oil Company of California, found the answer.

Now there is as much difference between stabilized soil adobe bricks and the old-time adobe as there is between modern concrete and its predecessor, lime mortar. In both instances, practically the same basic materials are used, but a small amount of extra ingredient causes a physio-chemical change of vast importance.

In modern adobe the added ingredient is an

emulsion of petroleum asphalt and water. This waterproofs or stabilizes the soil from which the adobe is made and prevents its disintegration.

The asphalt is held in suspension in almost microscopic droplets and resumes its natural form when the water evaporates. It can thus be applied without heating and can be used on surfaces and substances that are water absorbent.

Under a powerful microscope it's possible to see how asphalt makes the soil materials of adobe resist water. A building block of soil consists of sand and other coarse materials bound solidly together by tiny particles of clay. On contact with water, however, the cohesion of the clay particles is destroyed. The result is mud.

#### Coats Clay Particles

When soil mixed with the stabilizer dries out, on the other hand, ultra-microscopic films of asphalt give a coating to each clay particle. This prevents moisture from entering and permanently preserves the cohesive force of the clay.

As with any other building material, the popularity of adobe brick is directly related to its availability. There are at least two approved manufacturers in Northern California and four in the southern part of the state. The Hans C. Sumpf Com-

pany, of Fresno, is the largest, producing 70 to 80 percent of all adobe bricks made.

At one time stationary plants were set up to satisfy demands. Once the useable soil in the immediate vicinity is exhausted, however, long hauls are necessary, greatly increasing costs.

Self-propelled and towed brick making machines which can be moved to suitable locations are a solution to this problem. One of these is owned by the Certified Adobe Company of Los Angeles.

A digging wheel cuts into the earth as the machine moves slowly along. The dirt is pulverized as smooth as face powder and mixed with the petroleum asphalt stabilizer and water to the proper consistency. Each minute particle of earth receives a microscopic covering of stabilizer.

The stabilized earth is forced into the extrusion die where 500 pounds of pressure per square inch forms an adobe brick four inches thick and in any width from two to 12 inches. It is extruded and cut into bricks 16 inches long.

Each wet brick—weighing approximately 30 pounds—is carefully stacked onto a wooden platform. The adobe machine and two men can turn out about 2,000 bricks during an eight-hour shift. In warm weather the bricks dry in about 10 days and do not require turning during drying.

One hundred thousand 4x8x16-inch bricks can be made from one acre of land with an eight-inch cut of the digging wheel. If an average size two-bedroom house is constructed with 16-inch walls, 5,000 bricks will be required. This includes all interior walls.

Stabilized adobe has superior insulation qualities. If laid in good mortar it withstands earthquakes, cyclones and tornados and is suitable building material for any climate or country.

The durability and other distinctive qualities of stabilized adobe, plus its effective architectural aspects, promise an expanding future for this most ancient of building materials—a rebirth made possible by petroleum chemistry.#



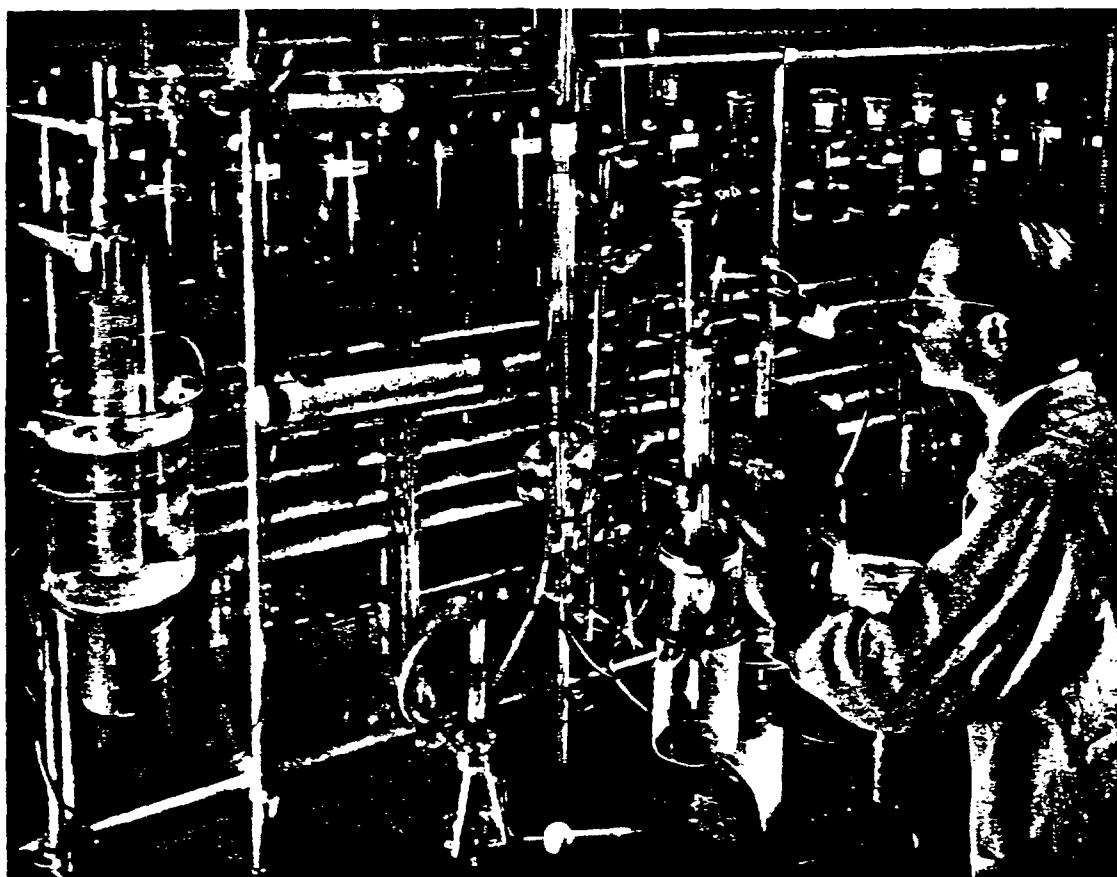
Left, a brick making machine's digging wheel cuts raw material from the earth's surface . . . Below, stabilized adobe brick is a good insulator and withstands cyclones, earthquakes and tornados.



# More Research

is one reason why

## Your Future Is Great in a Growing America



**I**N OPEN COMPETITION, our free markets reward the man with the new idea. That's why we're pouring \$10 billion yearly into research.

We have learned that one basic discovery can create a whole new industry.

For example, most of the new "wonder drugs" weren't even heard of 10 years ago.

The magic of nuclear energy in making our lives more comfortable and convenient has only begun to be revealed.

Plastics, the miracle maker that supplies almost every other industry, has expanded 40-fold in just 20 years.

In little more than a decade the television industry has sold over 47 million sets. And at least 40 percent of the other electronic products people will be using 10 years from now are still to be invented.

On the way are TV screens that hang on the wall, windows that close when it rains, blankets that cool as well as heat, solar power radios and cars that steer themselves.

And this is only the beginning!

This message is published in cooperation with The Advertising Council's "Confidence in America" campaign.

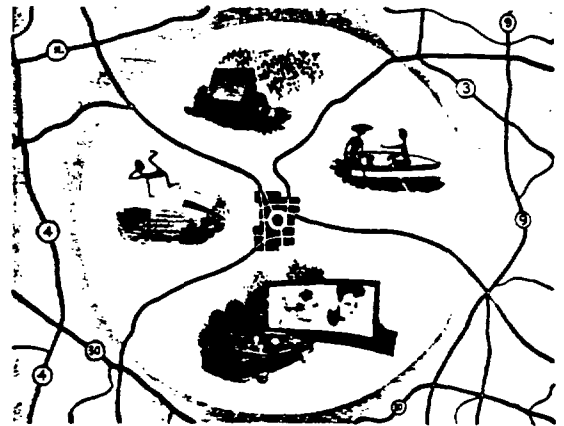


ETC 30890

# Your car makes any map a Magic Circle



Just turn your car out of your driveway. You'll find yourself surrounded by some of the easiest, breeziest summer living ever.



Cool off by car these summer days. Get out where the air is fresh and fun-filled. See what's new in scenery.



Try the easy entertainment of a drive-in movie. After the show, there's always that cool, restful ride home.



Run away to sea. Wherever the water is, your car can take you to it. Fishing, boating, swimming—it's yours.



Head for a shady woods. Find new picnic spots. Or take along camping gear. Your car makes it easy.

It's easy to take the swelter out of summer when you take off by car. Your Magic Circle makes your car not just a way to go, but a wonderful way of life.

And from start to end of any excursion, over 200,000 friendly, trained service station men stand ready to make it a carefree pleasure.



DRIVE MORE...IT'S FUN

TO EXPLORE YOUR MAGIC CIRCLE



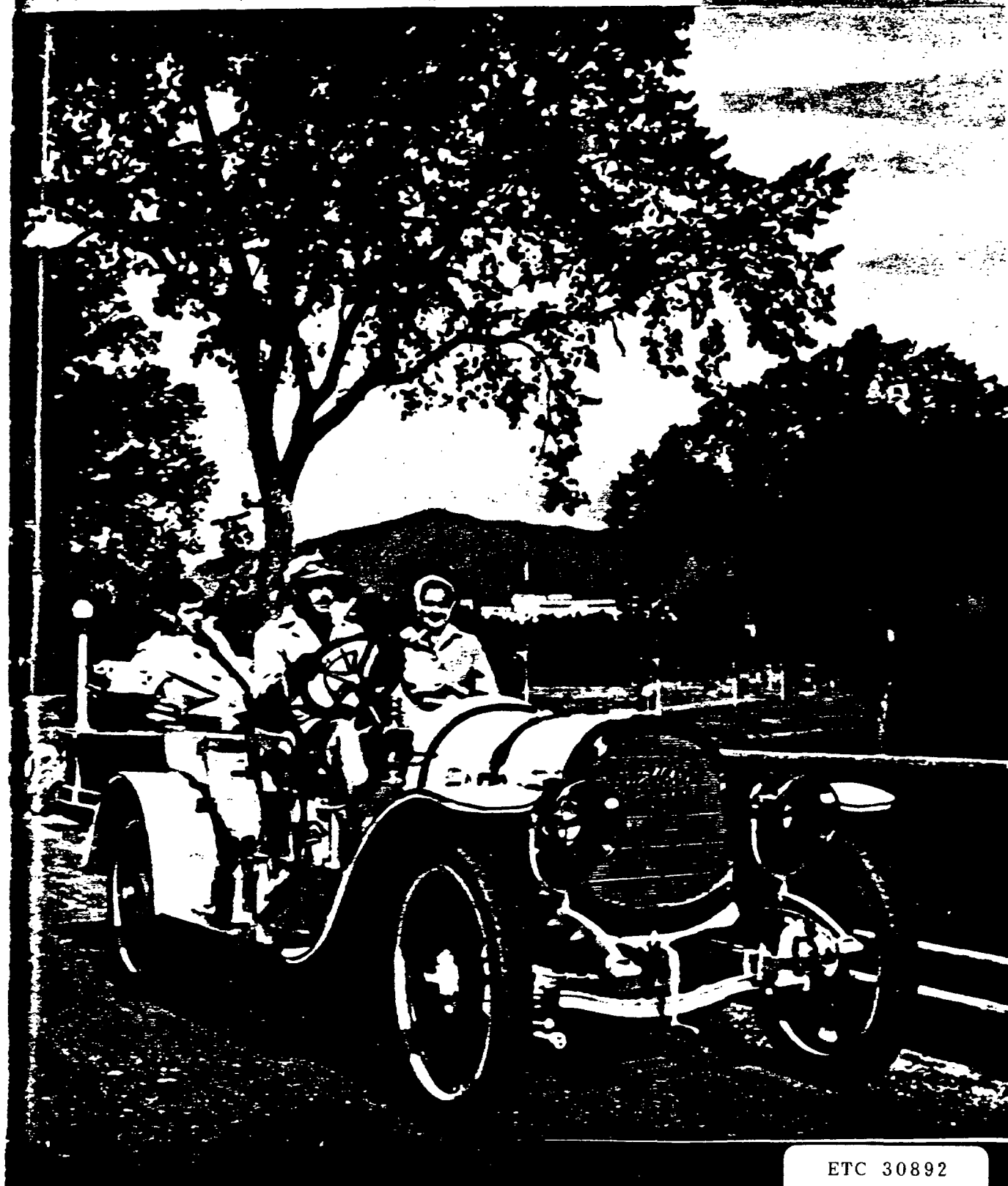
ETHYL CORPORATION

New York 17, New York

Manufacturers of "Ethyl" antiknock compounds  
...used by oil companies everywhere  
to improve their gasolines and your driving pleasure

# ETHYL NEWS

SEPTEMBER-OCTOBER 1961



ETC 30892

# ETHYL NEWS

SEPTEMBER-OCTOBER 1958



THE COVER: Dr. and Mrs. John H. Remington, and sons Jack and Bill, of Rochester, N. Y. in their 1909 Pope-Hartford pony tonneau on a highway bridge in New Hampshire's White Mountains. The Remingtons joined several hundred other antique car owners on the 1958 Glidden Tour, as you'll see and read on pages 14-18.

## CREDITS:

Layouts and art direction by Carsten Grande. Photographs: Cover and pages 14-18, Camera Associates (Basil Levine); pages 1-4, James B. Minnich; page 2 (left center), page 24 and inside back cover, Wide World; page 8, Warshaw Collection of Business Americana; page 9, Jack Tompkins; pages 10 and 11, Commercial Picture Co.; page 12, Ward C. Morgan Studio; page 25, Fotografias de Todo o Brasil; page 28 (bottom left), Pach Brothers.

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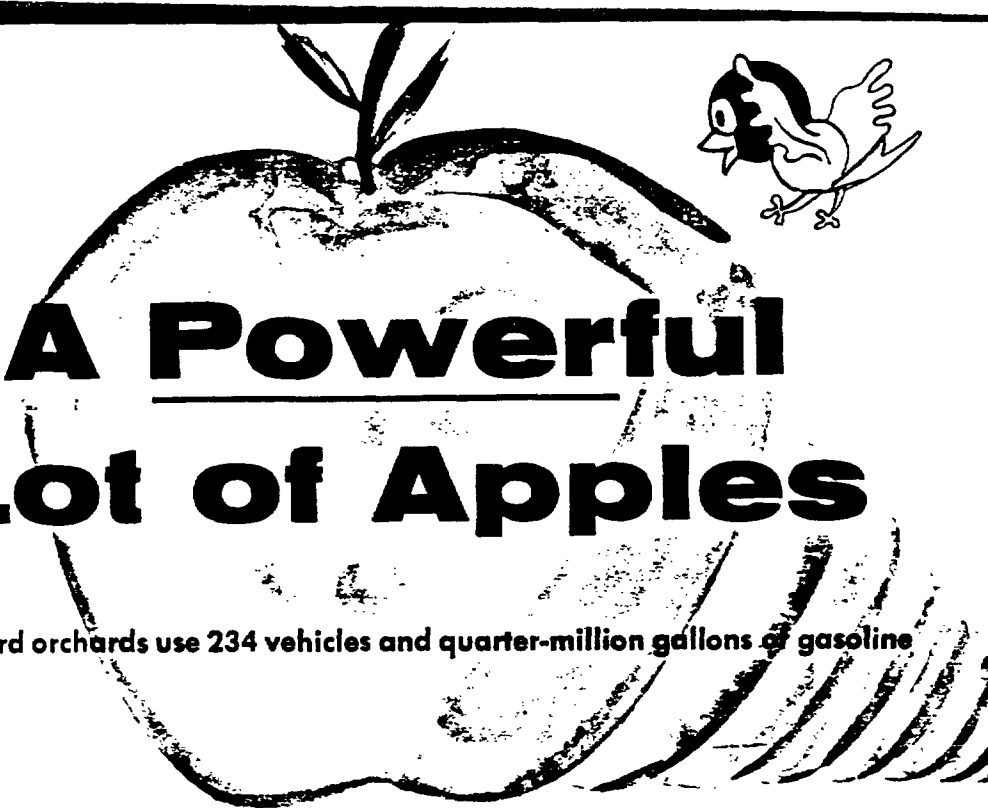
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# **A Powerful Lot of Apples**

**Huge Byrd orchards use 234 vehicles and quarter-million gallons of gasoline**

by Stanton P. Nickerson



Nudging its way between rows of trees, a truckload of apples leaves a corner of the 1,500-acre Jefferson Orchard for packing and shipping.

A RECORD CROP of apples is delighting the nation's palate this fall. Most varieties are bigger, crisper and tastier than ever. But before any of them reach teachers' desks, fit into lunch-boxes or appear in apple pie, impressive batteries of mechanized equipment are needed to grow and ship the fruit to countless consumers.

At the largest family-owned apple orchards in the country, gasoline's relationship to the bumper harvest is particularly important. Covering nearly 5,000 acres in the fertile Shenandoah Valley of Virginia and West Virginia, these orchards belong to H. F. Byrd, Inc. United States Senator Harry F. Byrd of Winchester, Va., is founder, treasurer and president.

It takes a fleet of 234 units to do the varied and essential jobs at the Byrd orchards. Close to a quarter-million gallons of gasoline are consumed annually, as well as proportionate quantities of lubricants and other petroleum products supplied by a local Cities Service jobber.

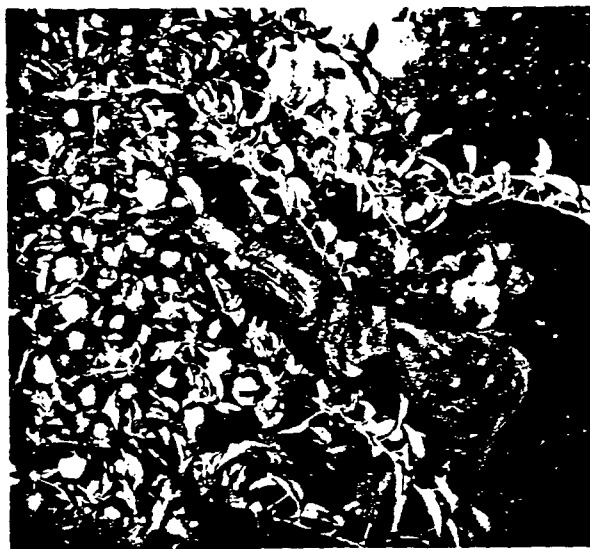
Although ideal weather is the principal reason for the size and caliber of the 1958 crop, it would be much smaller and of little value to growers and consumers alike without the work of so much equipment driven by gasoline. Some 90 percent of



The endless job of supplying pickers with all the crates they need during a day's shift is expedited by fleets of tractor-trailers.



Left, Senator Byrd's three sons are key executives in the family business: Richard E., Harry F. Jr. and B. Beverley.



Left, an orchard worker, high on a ladder, begins picking from branches overburdened with Red Delicious apples, one of the most popular varieties grown . . . Above, unloading at a Byrd packing and shipping center.

long. When boxes are filled, they are loaded on 73 trucks for transfer to orchard packing and shipping buildings.

Assembly-line methods assure speed and efficiency. Conveyor belts whisk endless streams of fruit through a maze of devices which clean, polish and separate apples according to size, feed them into bins for wrapping and packing by hand and finally route filled cartons to shipping platforms.

On the busiest day this fall, at the Byrds' largest orchard in Jefferson County, W. Va., some 18,000 bushels left by truck for eastern, southern and mid-western points.

The public's tastes influence strongly, of course, the kind of apples any grower raises. After having been in business for 52 years, the Byrd organization finds that red varieties are the best sellers, with

Red Delicious the most popular, followed by the Stayman.

An exception is the Golden Delicious, a yellow fruit also grown widely in the Pacific northwest. Other kinds harvested at the eight family orchards include Jonathans, Rome Beauties, Winesaps and Yorks.

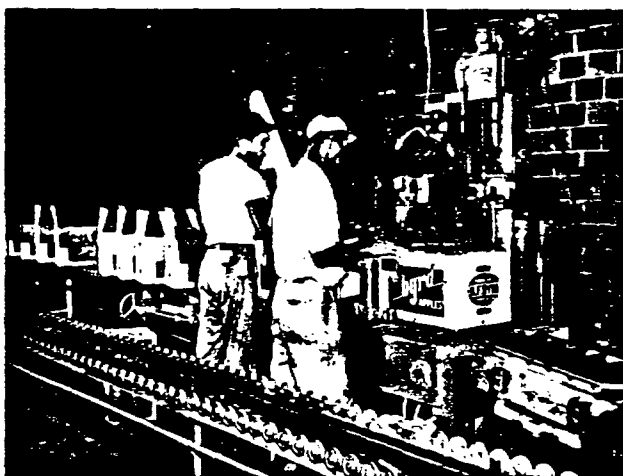
A businessman at heart as well as a veteran politician, Senator Byrd is a leader among applegrowers in utilizing aggressive merchandising methods.

These include attractive packaging. Each apple is wrapped and fitted into a cardboard cell as cartons are filled. The supermarket trade wants smaller apples in transparent plastic bags. Capitalizing on the family name, a pert bird is the orchards' trademark.

Echoes of the South's earlier decades persist in



Housewives removing green or bruised fruit from conveyors need sharp eyes and nimble fingers.



Left, sorting devices fill bins with choice apples for wrapping and packing . . . Above, cartons moving on endless rollers are sealed by a stapling machine.

this modern environment. Orchard crews on ladders propped against groaning boughs sing and whistle as they work. Bright scarves and clothing contrast sharply with red and golden fruit. Aromas reminiscent of plantation feasts drift from the Byrd processing plant at Berryville, Va., where some of the harvest becomes applesauce, preserved slices for pies or cider vinegar.

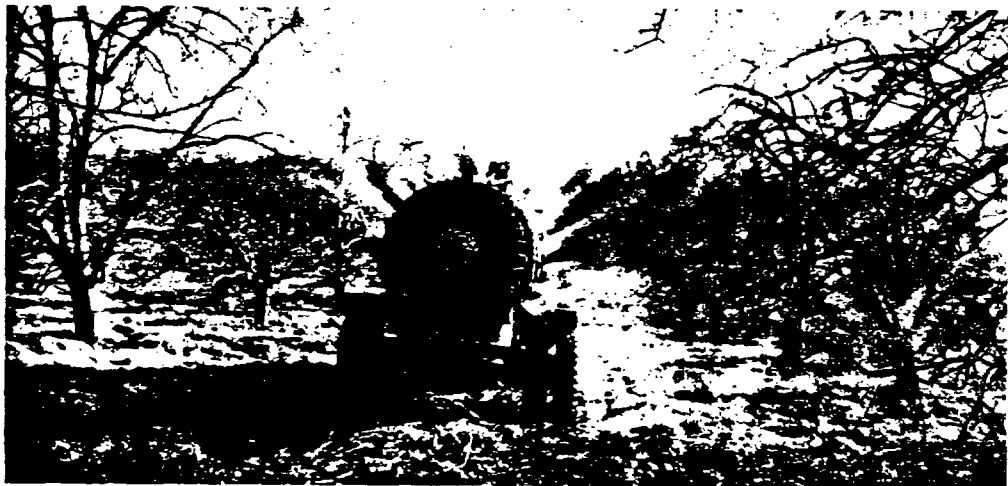
Close personal supervision over all diversified operations is exercised not only by Senator Byrd

but by others who are family-orchard executives.

In addition to his partner brother, Thomas B. Byrd, they include three sons—Harry F. Jr., Virginia state senator and newspaper publisher, who is secretary and assistant treasurer; B. Beverley, vice president in charge of production; and Richard E., processing division vice president.

Their combined efforts, coupled with those of experienced colleagues, have given the Byrd organization the unique position it occupies today. #

Right, employees without cars shuttle between their homes and work on orchard buses ... Below, controlling insects and other crop threats requires a fleet of 53 units to spray trees at least a dozen times annually.



Right, Senator Byrd, shown here talking with a driver about to head for Dallas, keeps in close touch with all phases of his complex family business. Some 18,000 bushels were shipped by truck on a single day this fall.



# Telling the Gasoline Progress Story

**The oil industry explains facts  
about motor fuel prices and value to  
employees and the general public**

FROM SPEAKER'S ROSTRUMS, from the colorful pages of a picture booklet, from newspaper and magazine articles, advertisements and from many other directions, people in and out of the oil industry heard about "A New Concept of Gasoline Progress" during Oil Progress Week in mid-October. As they did, they gained a new appreciation of the true value of modern gasoline by learning of a realistic way to measure its performance—in ton-miles per gallon.

Emphasis on "A New Concept of Gasoline Progress" during Oil Progress Week was another highlight in a continuing program of employee and public information which started with publication of the "New Concept" story in the March-April issue of ETHYL NEWS. Since that time, the oil industry has used this approach to explaining gasoline progress among its own people and the general public in a variety of ways.

Purpose of the program since its beginning has been to provide much-needed facts about gasoline value and prices. Surveys have shown that many people are not aware of improvements in motor fuel quality. Still more feel that the price of gasoline has risen more in recent years than almost any other widely used commodity.

In telling the gasoline progress story internally, the oil industry has supplied employees with help-

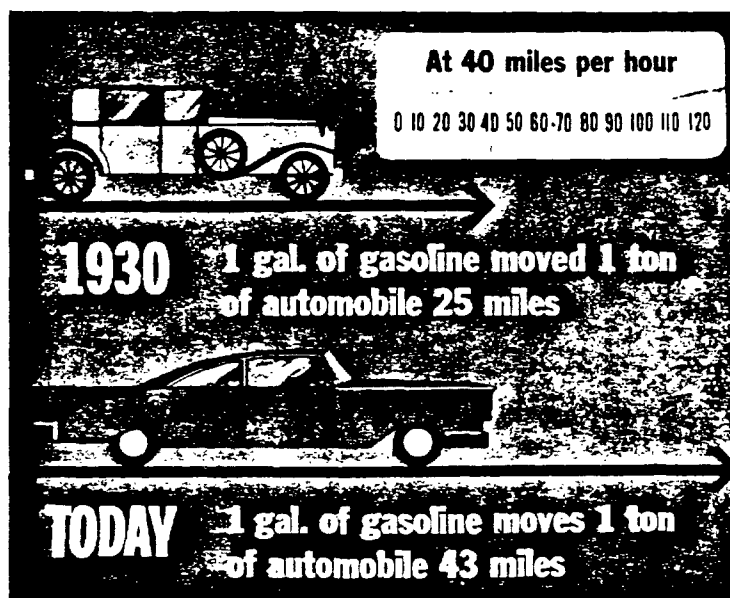
ful information they can pass on to the general public. In telling it on the outside, the industry has taken the facts directly to consumers.

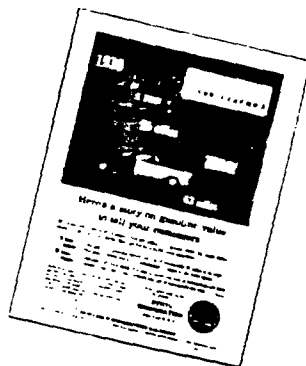
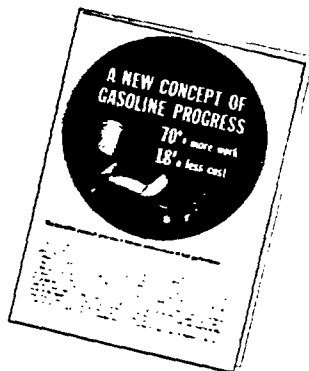
The "New Concept" is meaningful because it is based on the tremendous amount of work a gallon of gasoline does in a modern automobile—allowing for differences among various contemporary models and the great increases in weight that have occurred over the years. By using the ton-mile yardstick, it shows that modern gasoline in modern cars actually does 70 percent more work at 18 percent less cost than the gasoline of 1930 did in cars on the road in that year.

This, of course, is a story of real progress and one that is well worth telling.

Developed by Ethyl Corporation as a service to the oil industry after months of study, the "New Concept" was thoroughly checked before being

The "New Concept" is based on the tremendous amount of work a gallon of gasoline does in a modern automobile as compared with its performance in 1930.





released. It was submitted for consideration to executives of a number of leading oil companies, to the national Oil Information Committee and to oil industry employee communications experts.

These people overwhelmingly endorsed the "New Concept" as an important contribution to oil industry public relations and a very helpful answer to what was known to be a particularly knotty problem.

Once the original ETHYL NEWS article appeared, interest in carrying the "New Concept of Gasoline Progress" to employees and to the consuming public snowballed:

- In answer to requests from oil companies, Ethyl Corporation supplied a half-million reprints of the article for distribution.
- Over 60 oil company publications with a combined total circulation of about one million reprinted the article in whole or in part.
- A press conference for oil trade publications was held to explain the "New Concept" and as a result, oil trade publications with a circulation of 350,000 copies carried editorials and articles about it.
- Jobber publications publicized it.
- Copies of the article were distributed to thousands of newspapers throughout the country by the OIC.

- At the American Petroleum Institute annual meeting in Chicago, November 10-12, the "New Concept" will be prominently featured in an animated exhibit.

- New releases were prepared and distributed to automotive editors, explaining the "New Concept" from the motorist's point of view. This resulted in mention of the program in automotive columns.

- For use in training sessions, employee and public meetings, Ethyl adapted the "New Concept" to a slide and film strip presentation. More than 1,000 sets of slides and/or film strips with accompanying scripts are now being used by the oil industry in presenting the story orally and graphically across the country.

More recently, in answer to oil industry interest in a condensed and fully illustrated version of the "New Concept" presentation for the general public, Ethyl Corporation produced a picture booklet entitled "It's the Work that Counts." In this booklet, animated pictures and dialogue between a service station operator and motorist-customers tell the "New Concept of Gasoline Progress" in simplified form.

### Program Praised

Since its release two months ago, two-and-a-half-million copies of "It's the Work that Counts" have been distributed by oil companies, with most of them going out during Oil Progress Week.

During Oil Progress Week, and earlier in the year as well, oil industry executives have praised the "New Concept" program. Further, they have used it as the basis for talks on a number of occasions.

Since oil industry progress is a continuing thing, so interest in telling the "New Concept of Gasoline Progress" is expected to continue. In speeches, magazine and newspaper articles, booklets and slide and film strip presentations, the true value of modern gasoline will go on being told. As it is, the program will contribute to a new and better understanding of the oil industry, its products, and its importance in the America of today and tomorrow. #

# Business by the Boxful

The Warshaw Collection includes many intriguing items from petroleum's past

By Harry H. McGraugh



WITH the one hundredth anniversary year of the modern oil industry only a couple of months away, interest in petroleum memorabilia is booming. Relics and printed matter from oil's past are in great demand as source materials, for displays, and as illustrations for booklets, brochures and magazine articles.

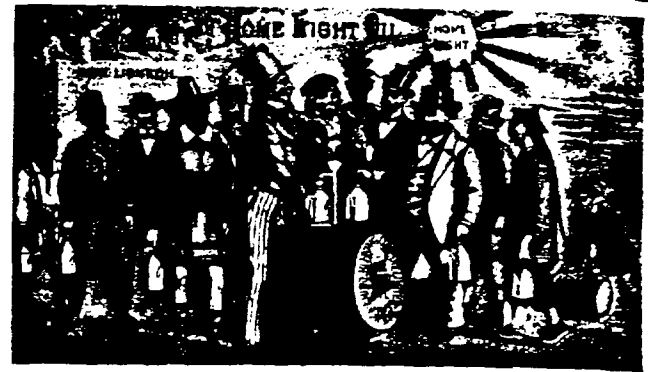
One valuable reference center for those probing petroleum's past is the Warshaw Collection of Business Americana, housed unpretentiously in the basement of an old brownstone house in New York City. This monumental and intriguing collection includes over 5,000 items pertaining to oil in its total of more than a million from America's business past. They have been assembled by Mr. I. Warshaw over the last 30 years.

## Colorful Advertisements

The oil collection contains such diverse materials as colorful advertisements for axle and boot grease, lighting oil, pure refined paraffin, and beauty products with a petroleum base "unequaled for beautifying the skin." There also are stock certificates in companies long dead and prospectuses for some of the hundreds of oil companies that mushroomed in the oil boom that followed Drake's well.

These and the other items are categorically stored in hundreds of boxes lining the walls of Mr. Warshaw's basement headquarters. Thanks to a phe-

Among the more than 5,000 historical oil industry items in the Warshaw Collection are pieces featuring petroleum's use in medicinals and cosmetics, oil heaters, gasoline and motor oils, boot grease and illuminants.



Sold by L. F. SPEAR.  
HARNESS MAKER  
at Building 101 One-Percent Lottery and in my Warehouse.  
No. DE RUETER, N. Y. On



**TALLY-HO!**

YOUR motor will run through the day SOOONY gasoline gives full power to your motor - maintains speed. The last drop of fuel on the wire, of instant use POLARINE. The Standard Oil for all Motors. Plan for your motor. Buy at the SOOONY sign - the sign of quality for fuel and lubrication. Fuel will not congeal in it. It maintains friction.

STANDARD OIL COMPANY of NEW YORK  
New York Albany Cleveland Buffalo Boston

**POLARINE**

nomenal memory, he usually can locate any item in a matter of minutes.

The Warshaw Collection of Business Americana began in 1928, when it occurred to the founder that no one was systematically engaged in preserving the past of industry and commerce. He retired as a dealer in rare books and devoted all his efforts to his business collection.

At the present time it embraces 750 business categories, ranging from air conditioning to windmills, from petroleum to packaging. If a business enterprise exists or has existed in America, the chances are extremely good that the Warshaw Collection has materials from it.

### Helps Settle Disputes

The most profitable use to which Mr. Warshaw has put his collection is in solving or helping to solve disputes where factual evidence of past business activities is needed. His most notable work has been in trademark controversies where frequently millions of dollars ride on a court's decision as to who is legally entitled to the commercial use of certain emblems or symbols.

Mr. Warshaw also has prepared special exhibits for the United States Trademark Association at its annual meetings. These showings have been built around trademarks developed before the 1900s.

Mr. Warshaw does not claim to have in his collection everything that exists on a business. But his motto is, "If it exists," with the emphasis on the *if*, "I will find it. Actually," he says, "I have over a million clues at my fingertips." The network of dealers and friends he has built up over the years

also is of great help when he is called upon to produce some seemingly non-existent record, advertisement or display.

Among his clients have been automobile manufacturers, utility companies, steel corporations, paper companies, drug manufacturers and creators of fine wines, to name a representative few.

Although no age or time range is placed on his material, Mr. Warshaw naturally finds that older, rarer items have more value. But frequently, contemporary items will be no less sought for.

A short while ago a movie producing organization phoned for an "A" gasoline ration sticker to put on the windshield of an auto being used in a movie. The time of the film was during World War II and the producers wanted every detail authentic. With no trouble at all, Mr. Warshaw located an "A" stamp in one of his file boxes.

Mr. Warshaw's aim in compiling his monumental collection has been to portray the grand sweep, the big panorama of business. He feels there is as much romance in business as in any other field. "People are beginning to realize," he says, "that while the romance of war, fashion and science is well preserved in swords, wax dolls, and fascinating models, the romance of business in the form of ledgers, sample books, posters and tin cans tends to perish in debris. Now people come to me to illustrate histories and to get pictures of things as they were."

Ultimately, he would like to see his collection moved to a college, library or some permanent archive where it would be available to scholars and researchers. "It deserves a permanent home because it is a record of a fantastic and fascinating era in the history of America and the world." #

Mr. I. Warshaw, right, owner of the Collection of Business Americana, and a client examine some colorful relics.



Every student in Western Michigan  
University's petroleum distribution  
course is learning ...



## How to be

LIKE MANY OTHER BUSINESS LEADERS, oil executives have long recognized the importance of attracting alert, intelligent, well-trained young men to their industry. Petroleum's future progress, they know, depends to a great extent on a continuing supply of new talent with the training and ability to assume positions of responsibility and leadership.

Particularly is this true in the field of petroleum marketing and distribution. In the past, marketers have found that many of their prospective employees are equipped with a good general business education, but they have little if any specific knowledge of or experience in oil.

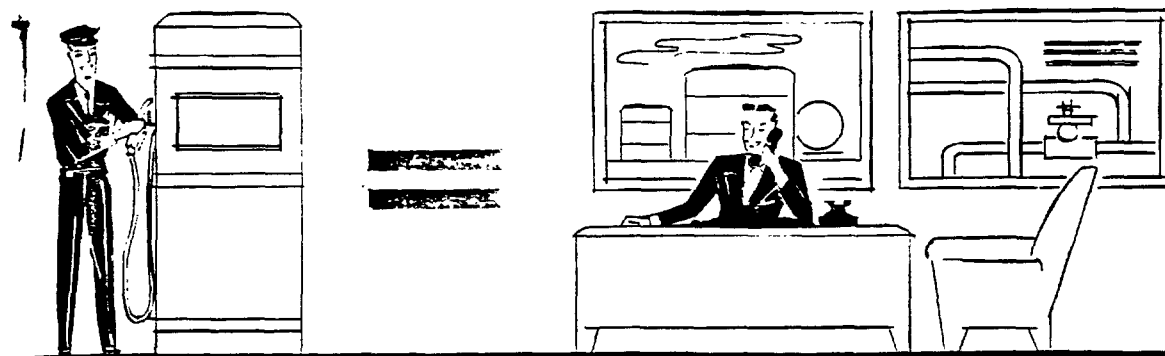
In recent years, the problem has been widely

recognized and definite steps have been taken to remedy it by specialized education and training. One college and two universities are now offering courses in petroleum distribution. The Community College of New York, in Brooklyn, is again giving its two-year classroom course on the subject; the University of Tulsa is inaugurating a four-year course; and Western Michigan University's petroleum distribution course is in its third successful year.

How does a college go about training young men for careers in petroleum distribution? One answer to this question is found in the Western Michigan University program at Kalamazoo.



WMU petroleum distribution students alternate between classroom work ...



## an Oilman

Some 65 students are enrolled in WMU's two-and-a-half-year course that combines intensive classroom study with practical on-the-job training. Those who successfully complete the course receive a graduation certificate. If they choose to go on with their schooling, they may earn a B.S. degree with a major in petroleum distribution.

In either case, they learn about the distribution end of the oil industry and get valuable experience in several phases of marketing.

In all, 62 academic hours of credit are earned by students in petroleum distribution during their two and a half years of study. Of this, about two-thirds are in general business subjects such as communication, science, economics, marketing, accounting and advertising. The remaining one-third of classroom time is spent on petroleum distribution and related fields.

Courses include: "Introduction to the Petroleum Industry," "Selling Petroleum Products," "Petroleum Product Applications" and "Petroleum Products Handling and Distribution Techniques."

### Two-Week Tour

One of the highlights of the program is a series of tours early in the school year. For two weeks, the students travel to various oil and related installations where they get a first-hand view of the industry's tremendous scope. They visit refineries, jobber facilities, drilling and exploration sites, marine and pipeline terminals, research laboratories (including Ethyl Corporation's Research Labora-

tories at Detroit), automobile manufacturing plants, and product and equipment suppliers.

As the course is presently set up, students spend four semesters in classroom work and 12 months on various jobs, alternating between the two.

In on-the-job training, they receive the going salary for the job they fill, earning from \$2,500 to \$3,000 over the two-and-a-half-year period. Financial assistance in the form of grants and aids from several companies also is available to some students.

So far as their practical training is concerned, students are expected to work in five different marketing fields—service stations, warehouses, of-



... and diversified on-the-job training.

fices, transportation and a miscellaneous field such as maintenance or wholesale and consumer sales.

Among the companies currently providing employment for the on-the-job training of students are Citrin Oil; Farmers Petroleum Cooperative; Gulf Oil; Lakeside Refining; Leonard Refineries; Ryder Fuel; Naph-Sol Refining; Norman-Navan Advertising; Ohio Oil; Pure Oil; River States Oil; Shell Oil; Socony Mobil; Speedway Petroleum; Theisen Clemens (Cities Service distributor); John Wood Co., Bennett Pump Division; Atlantic Refining; Standard of Indiana and Central West Oil.

Western Michigan's petroleum distribution course was first offered in the fall of 1956, but its beginnings go back earlier. They can be traced to L. T. White, vice president of Cities Service Petroleum.

#### Advisory Committee

Long interested in good training for petroleum distribution, Mr. White was responsible, along with Paul V. Sangren, president of WMU, other university officials and Michigan oilmen, for establishing the course. This formative group later became known as the Advisory Committee on Petroleum Distribution. Western Michigan was chosen because of its experience in "terminal" type education.

Mr. Adrian Trimpe, head of the Distributive

Education department and Dr. George Kohrman, dean of Applied Arts and Sciences at WMU, were given responsibility for the university's part of the program. Professor Wendall Fidler became coordinator of the course.

Working with Professor Fidler, the Committee assisted in setting up the curriculum, making arrangements to furnish experienced speakers for every phase of the petroleum industry covered by the course, and finding on-the-job training spots.

Meanwhile, the oilmen of Michigan helped recruit the first students.

#### Training Positions Needed

Although it is now in its third successful year, the program is not completely free of problems. One of the big challenges facing the Advisory Committee and the University at present is finding an adequate number of high-caliber on-the-job training positions for their growing list of students.

Initially, there were just six students enrolled in the course; now there are 65. Ultimately, it is hoped that 200 will come in annually.

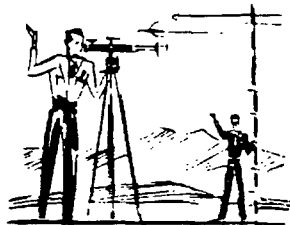
But no matter what the number, the oilmen and educators behind the program will continue to stress quality, and not mere quantity, in preparing young men for careers in petroleum distribution. #

On the Advisory Committee are: Ralph Townsend, Pure Oil; Donald Thompson, Speedway Petroleum; Adrian Trimpe, WMU; Deane Birkes, Ethyl; Russell Spooner, Standard of Indiana; Truman Gish, Naph-Sol Refining;

Joseph Hadley, Michigan Petroleum Assn.; Lawrence Thomson, Michigan Office of Education, George Kohrman and Wendall Fidler, WMU; and Jack Green, Associated Petroleum Industries of Michigan.



# Only Pennies a Pound



We in the oil industry are engaged in handling and moving a very heavy, bulky, and rather unspectacular commodity.

We search for it in the bowels of the earth.

We lift it out of the ground,

put it in tanks,

pump it out of the tanks and through a pipeline to a refinery

where we lift it, process it and reprocess it,

put it in more tanks,

clean it up,

mix it up,

put it in a ship, tank car, truck or another pipeline,

move it to a terminal,

unload it,

load it up again,

haul it to a bulk plant,

unload it,

reload it,

take it to a service station,

put it in another tank,

pump it out into the customer's automobile tank,

wipe his windshield,

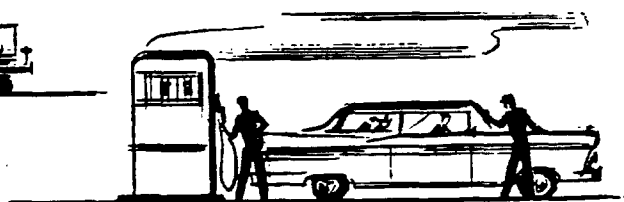
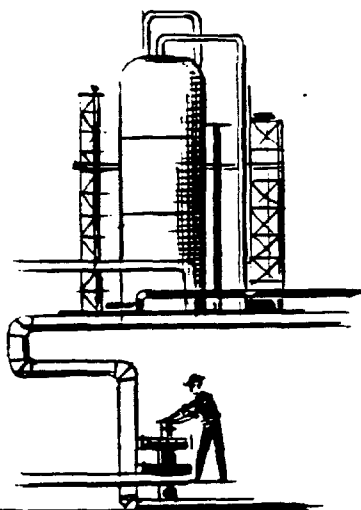
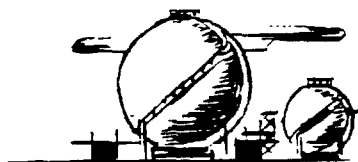
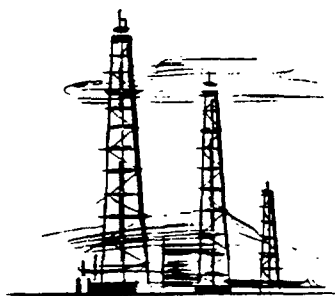
give him free air, water and rest room facilities,

and charge him, exclusive of taxes, less than

4 cents a pound.

What other product that requires all that labor and energy in its handling and processing can be purchased for anywhere near that price?

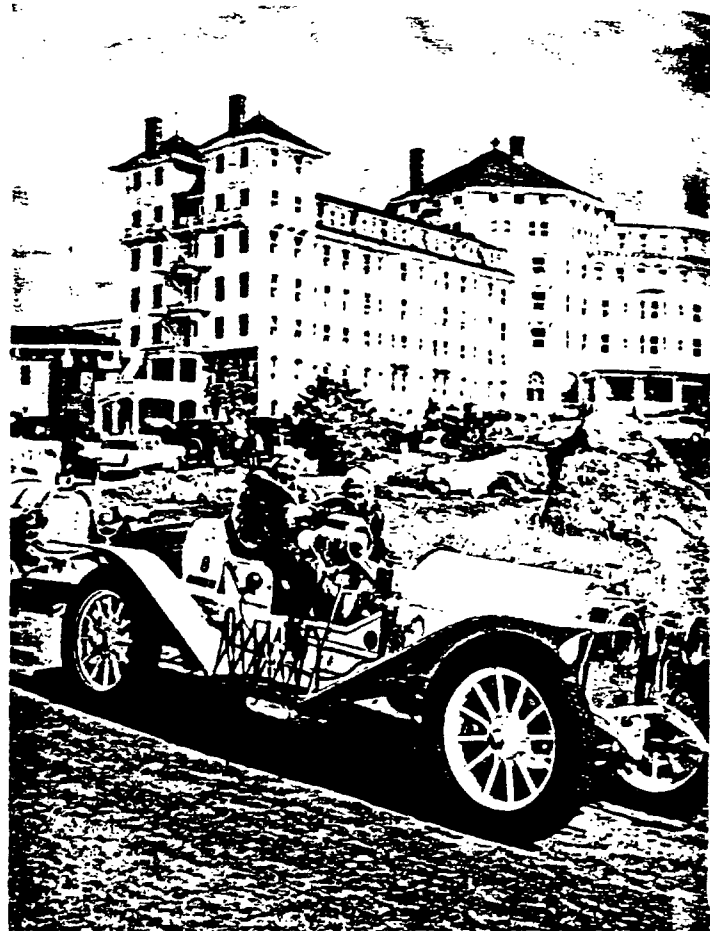
—From a talk by Robert L. Minckler  
President, General Petroleum Corporation



# TOUR



Above, oilman Robert DeHart was general chairman of the event . . . Right, Mr. and Mrs. Paul Rutherford, Jr., of West Hartford, Conn., in their 1910 Thomas Flyer . . . Below, on a backwoods road, a varied group of older Glidden Tour cars lines up for the photographer.



# INTO YESTERYEAR

This year's Glidden Tour of antique automobiles covered four New England states

by Thom Yates

FIFTY-FOUR YEARS AGO, when the motor car was as new on the scene as earth satellites are today, the American Automobile Association hit upon a spectacular way to prove to a skeptical public that the "horseless carriage" was here to stay.

It sponsored, from 1904 through 1914, what were termed "reliability runs." The idea was to prove that—despite such handicaps as inadequate highways and mechanical breakdowns—the future of the motor vehicle was assured.

The event immediately became known as the Glidden Tour, after Charles H. Glidden, prominent Bostonian and inveterate traveler, who donated the trophy awarded annually to publicize the "reliability runs."

Long gone is the time when it was necessary to convince Americans of the convenience, comfort and economy of the automobile, but the annual Glidden Tour continues. It is now conducted as a means of bringing together antique car owners to display their "old timers."

Actually there are two sections of the Glidden

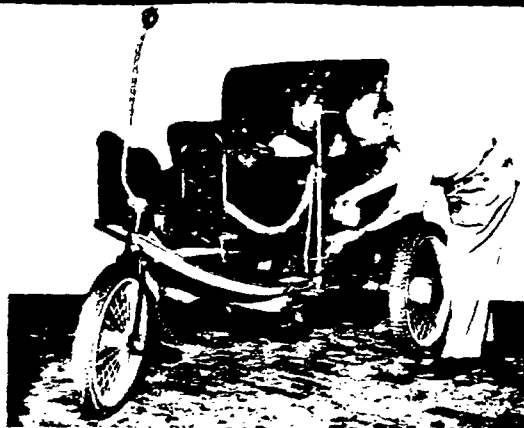
Firestone and Esso Standard provided "Mr. Fixit" services, as usual. Below, William E. Swigart, Jr., of Huntingdon, Pa., gets a tire changed on his 1903



Well protected against the chill and damp weather are Mr. and Mrs. Malcolm E. Wallace, of Marlboro, Mass., in their 1906 Cadillac roadster.

Oldsmobile . . . Below right, on-the-road service for J. Leonard Rhinehart, of Havre de Grace, Md., owner of a 1909 Mitchell.

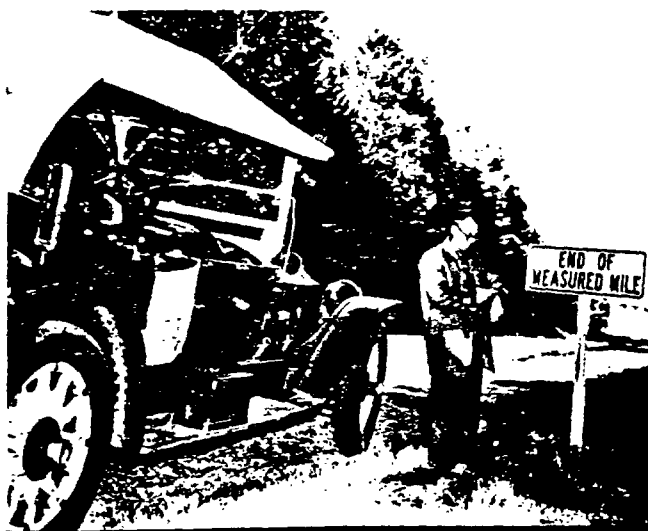




Roger Johnson, of Hadley, Mass., oils his three-wheeled 1901 Knox, oldest car on the Tour.



Above, reading about New Hampshire's famed "Old Man of the Mountain" are J. Albert Thomas, of Lynn, Mass., at the wheel of his 1912 Buick; L. H. Blatchford, Ethyl Corporation fleet engineer; Mrs. Thomas (left) and Mrs. Blatchford.



Left, George H. Gaynor, of Fairview Village, Pa., pauses to check his 1915 Packard touring car's time over a measured mile in the White Mountains.

Tour as it is now conducted. One consists of cars built during the original Glidden Tour era; the other, the National Tour group, includes vehicles produced from 1914 through 1929.

This year's Glidden Tour, held early in September, covered four New England states, with New Hampshire the center of activity. It retraced much of the route of the second Glidden Tour staged in 1905 and the revival tours of 1947 and 1954.

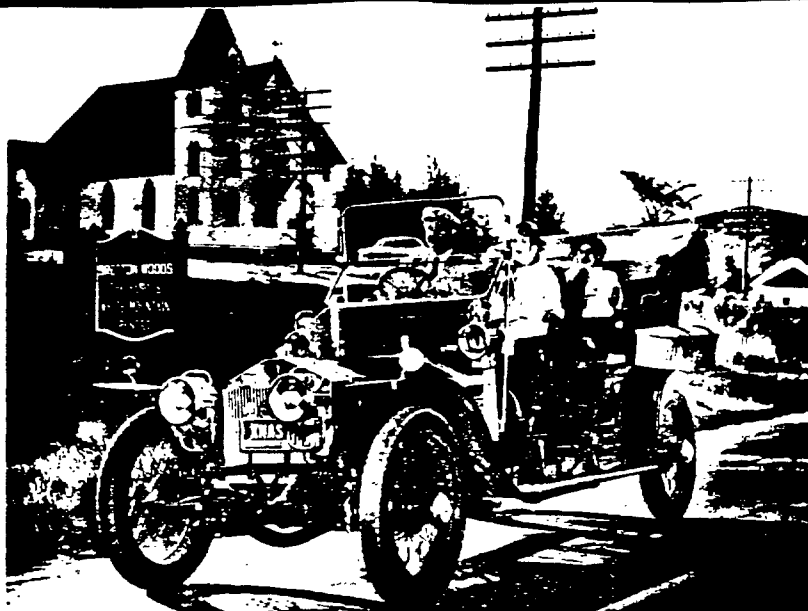
Almost 275 cars, dating back to a three-wheeled 1901 Knox runabout, took part. Their owners came from almost half the states of the Union and two Canadian provinces. General chairman was oilman Robert DeHart, Massachusetts district manager for Esso Standard Oil Company and himself the proud possessor of a 1912 Buick touring car.

For the first two days, the Glidden Tour-ists meandered along carefully-planned routes throughout the scenic White Mountains. Then on the middle day of the week, they made a 140-mile trek to that small stretch of New Hampshire which touches the Atlantic Ocean. From there, they fanned out for two days of picturesque tours into nearby Maine and southeastern New Hampshire.

#### Trophies Awarded

The 1958 Glidden Tour concluded with a rendezvous at Brookline, Mass., national headquarters of The Veteran Motor Car Club of America. Highlight of the rendezvous was the awarding of trophies provided by interested groups and companies for such as "best restored," "most interesting" and "best performing" cars.

With the Brookline ceremonies at an end, the owners of these historic and impressive relics of a bygone motoring era nosed their vehicles toward home. As they rambled through villages and cities en route, they provided a touch of nostalgia for the older residents of those communities and an unforgettable moment for the younger citizens. Also, they proved anew a well-known fact: that America's automobiles are—and have been right from the start—sturdy, dependable machines. #

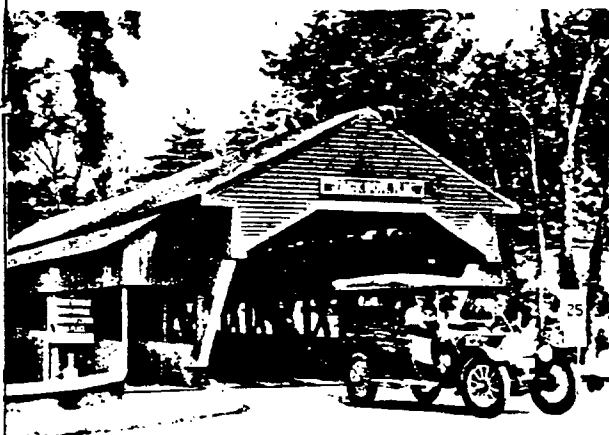


Rolling happily along in their 1907 Rolls Royce touring car are noted singer and radio star James Melton, of Greenwich, Conn., his wife and daughter Margo.

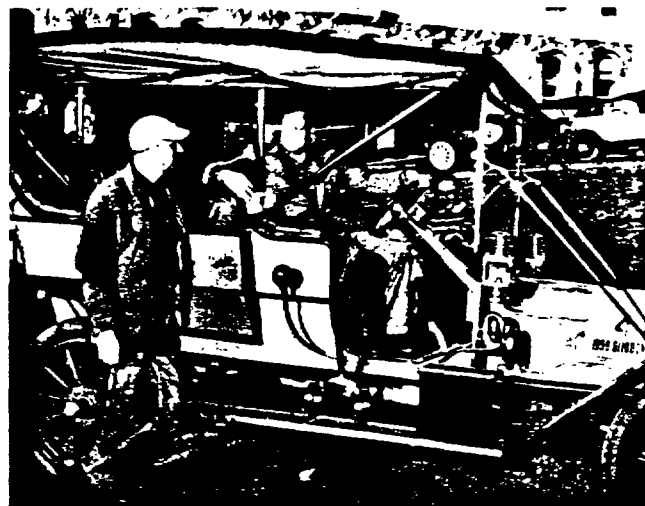


Willis A. Seadler (in white trousers) stops to help a modern motorist in distress. Mr. Seadler came the longest distance for the Glidden Tour. He drove his 1928 Chrysler roadster from Sacramento, where he is a Standard Oil Company of California dealer.

Emerging from one of New England's colorful covered bridges are the J. E. Joseph family, of North Bennington, Vt., in their 1913 Locomobile.



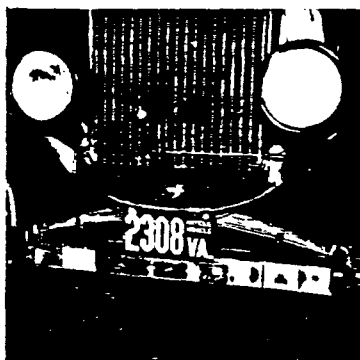
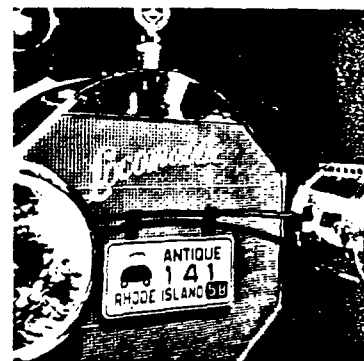
Seated in his 1907 Ford, noted antique car collector Henry A. Clark, Jr., of Southampton, N. Y., chats with Joseph W. Suydam, another Glidden Tour-ist.





Left, some of the old cars are transported to the Glidden Tour scene by trailer. Here, W. Fenton Meredith, of Youngstown, Ohio, backs his 1911 Franklin into its canvas-covered van.

Several states—Connecticut, Rhode Island, Virginia and Michigan among them—issue special plates for the old cars. One vehicle even displayed a 30-year-old "Hoover for President" tag.

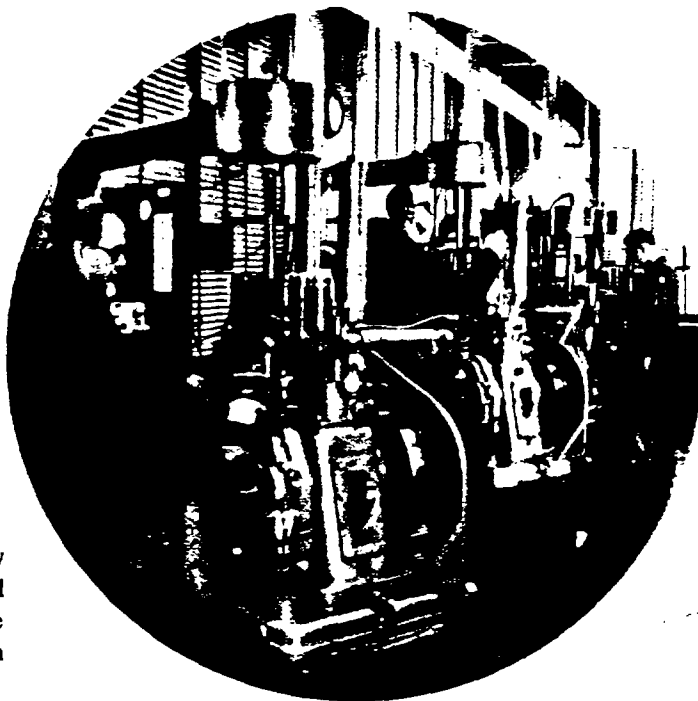


Wherever they went, the antique cars attracted attention—nostalgic reminders of a bygone era.



# Samples of Quality

Ethyl helps oil industry  
meet product control challenges with  
gasoline testing services



AS MOTORISTS ENJOY football games, country fairs, vistas of colorful foliage and other fall activities, they owe much of their driving pleasure to the oil industry's remarkable achievements in assuring gasoline quality.

No matter where the man-behind-the-wheel buys his favorite brand of motor fuel, he always knows its quality will be the same. In taking this brand consistency for granted, few drivers appreciate the careful attention which refiners give to quality control programs.

Closely associated with the growth of control measures, Ethyl Corporation's Gasoline Testing Division is the oldest and most experienced enterprise of its kind for service to the oil industry.

## Five Testing Laboratories

At the same time, Ethyl gasoline quality reports assist the automotive industry in designing the most efficient engines for tomorrow's cars, trucks, buses and other vehicles.

Ethyl's testing is conducted at five laboratories: at Yonkers, N. Y.; Houston, Texas; Kansas City, Mo.; San Bernardino, Cal.; and Tulsa, Okla.

During the 31 years in which the Company has been working with the oil and automotive industries

Knock-testing engines determine octane numbers of gasolines from refineries and service stations.

on quality control, it has made more than two million chemical and physical tests of gasoline samples. More than 150,000 analyses were performed last year on over 30,000 representative fuels from refineries and retail outlets.

An important service for individual customers is testing the gasoline samples each company sends to Ethyl periodically for quality evaluation. Results are sent to refiners on the same day on which their samples are received. The speed of this service is one of its most distinctive features.

In basic tests on gasoline samples, Ethyl measures octane number (Research and Motor), volatility range, vapor pressure, sulfur and gum content, tetraethyl lead concentration and corrosiveness.

Octane number, of course, indicates how well a

**No  
Googols  
Please!**

**By Frank L. Remington**

Let's hope not, though! Most people have trouble grasping the significance of a mere million, billion or trillion, let alone a googol.

Before they find themselves up to their ears in googols, or even novemdecillions (1 followed by 60 zeros), or nonmillions (1 followed by 30 zeros), American taxpayers would do well to get some idea of the size of millions and billions, the terms in which our staggering federal expenditures and national debt are glibly expressed.

## Just how much is a million?

Try counting a million one-dollar bills and you'll really appreciate what a huge chunk of cash it is. Tallying at the rate of 60 bills a minute for a full eight-hour day, five days a week, it would take almost seven weeks to do the job.

Beginning to get the idea a little bit?

Next way station on the astronomical figures tour is a billion. This number—1 followed by nine zeros—is made up of 1,000 millions, yet it represents only one-seventieth of our current annual federal budget and one-two-hundred-and eightieth of the national debt.

A billion dollars is more than six times the amount the entire oil industry spends on its vast research activities in a whole year.

How do you reach a billion? Here's one way: Ride on the propeller of an airplane traveling at a speed of 300 miles an hour and you'll go around a billion times—if the propeller spins constantly 24 hours a day, seven days a week, for two whole years.

### A Long Count

Or look at it this way: At a salary of \$100 a week, a man would have to work 192,307 years to earn a billion dollars. If he were paid in crisp new \$1 bills piled one on top of the other, he'd have a stack 65 miles high. And if he wanted to count his billion dollars' worth of greenbacks, he would be occupied 24 hours a day for about 31 years—counting at the rate of one bill a second.

With an annual budget of upwards of \$70 billion, the federal government is spending each year about what it has been estimated must be invested over the next 10 years by the petroleum industry to keep the nation supplied with oil.

Just because most budgetary and debt talk is in terms of millions and billions, don't get the idea that a trillion is a long way off. Granted, it did take 166 years from the time of George Washington's first presidential inauguration in 1789 through the spring of 1955 for the United States to spend one trillion (1 followed by 12 zeros) dollars. But if we continue to spend at our present rate of some 70 billion dollars a year, we'll push our cumulative total past two trillion dollars (\$2,000,000,000,000) in just 12 more years! In other words, we'll use up in 15 years what it previously had taken us 166 years to spend.

Maybe the day of the googol isn't so far away at that!

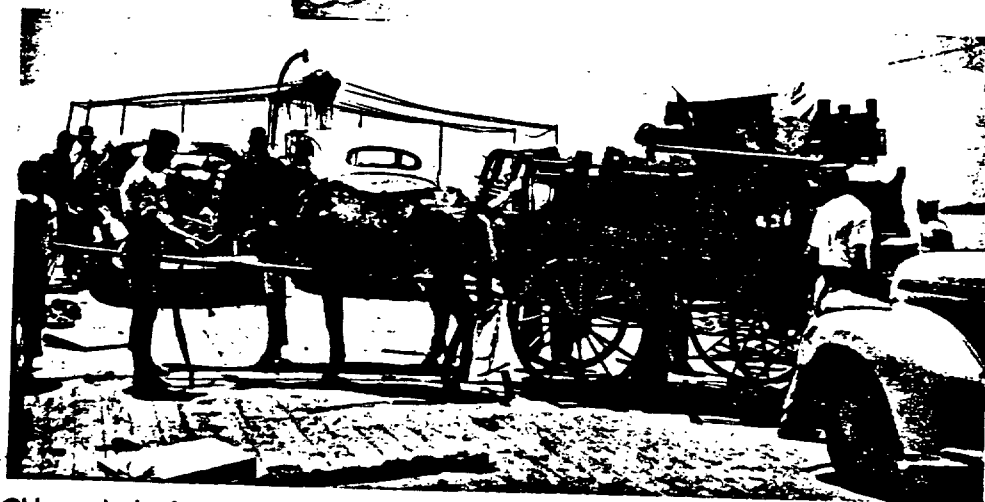
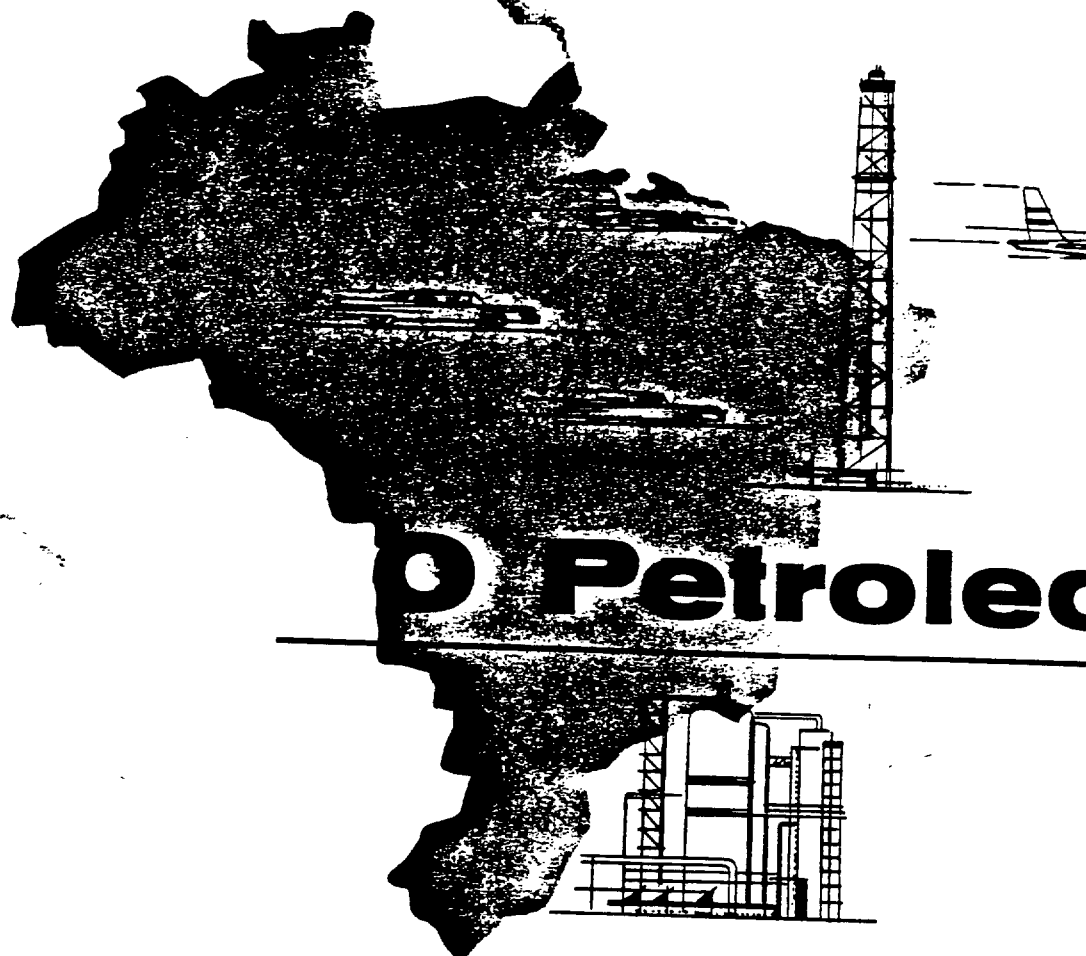
First, of course, in addition to those kingsize figures already cited, come an octillion (1 followed

by 27 zeros), a vigintillion (1 followed by 63 zeros), and other numbers from the upper stratosphere. But let's hope our interest in them remains strictly academic.

Instead of trafficking in astronomical figures—especially in connection with federal spending and indebtedness—Americans need a little more of the philosophy of the African Hottentots. The vocabulary of these simple people doesn't include words for numbers higher than three. Ask a Hottentot how many fingers he has and he'll answer "Many." It's much simpler that way—and there's no worry about googols and such. #

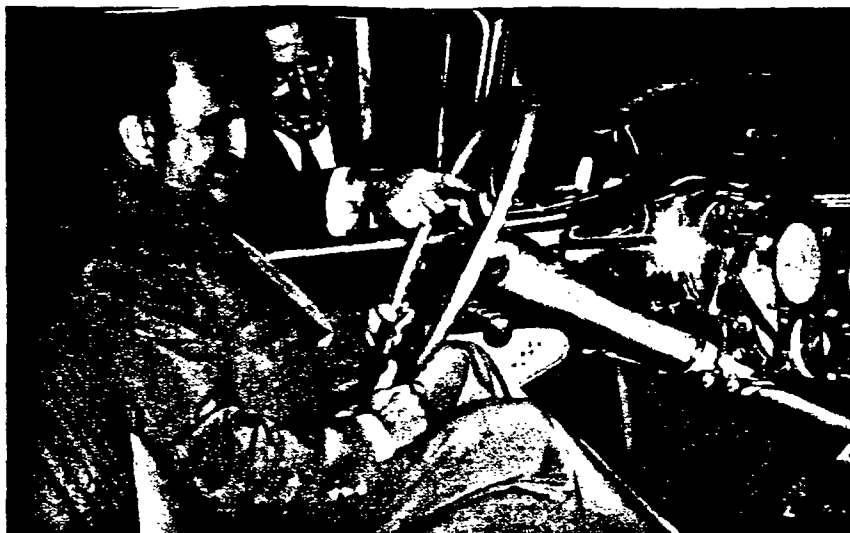
### Numeration Nomenclature

| Name              | Size                            | Number of zeros |
|-------------------|---------------------------------|-----------------|
| Million           | 1,000 thousands                 | 6               |
| Billion           | 1,000 millions                  | 9               |
| Trillion          | 1,000 billions                  | 12              |
| Quadrillion       | 1,000 trillions                 | 15              |
| Quintillion       | 1,000 quadrillions              | 18              |
| Sextillion        | 1,000 quintillions              | 21              |
| Septillion        | 1,000 sextillions               | 24              |
| Octillion         | 1,000 septillions               | 27              |
| Nonillion         | 1,000 octillions                | 30              |
| Decillion         | 1,000 nonillions                | 33              |
| Undecillion       | 1,000 decillions                | 36              |
| Duodecillion      | 1,000 undecillions              | 39              |
| Tredecillion      | 1,000 duodecillions             | 42              |
| Quattuordecillion | 1,000 tredecillions             | 45              |
| Quindecillion     | 1,000 quattuordecillions        | 48              |
| Sextdecillion     | 1,000 quindecillions            | 51              |
| Septendecillion   | 1,000 sextdecillions            | 54              |
| Octodecillion     | 1,000 septendecillions          | 57              |
| Novemdecillion    | 1,000 octodecillions            | 60              |
| Vigintillion      | 1,000 novemdecillions           | 63              |
| Googol            | 10 <sup>100</sup> vigintillions | 100             |



Older methods of travel in Brazil are being crowded out by modern motorized transportation.

ETC 30915



An ETHYL USA representative explains a specially instrumented test car used to evaluate local gasolines to Col. Janary Gentil Nunes, president of Petrobras, the Brazilian government oil agency.

# no Brasil

**The oil in Brazil is contributing to that country's rapid economic development**

**B**RAZIL, like so many other South American countries, is growing—fast. It is shifting from a more or less one-crop agricultural economy to an industrialized nation. Already one of the leading countries of its continent, Brazil is becoming a full-fledged partner in Western Hemisphere progress.

Historically, Brazil—with its vast area of almost 3,300,000 square miles (almost as large as the United States including Alaska)—has had to face the problem of transportation—or lack of it. Now, however, with a population of 62 millions increasing at twice the United States rate, and with the coming industrialization, transportation is picking up too.

Some 760,000 motor vehicles, more than half of which are trucks, travel a road network of almost 330,000 miles, making it one of the hardest working fleets in the world. Nine airlines span great distances, as petroleum powered land and air transport plays a leading role in the development of the country. There are, to cite just one example, 75 daily airline flights between Rio de Janeiro and Sao Paulo—a distance of 250 miles.

Petroleum and petroleum products, of course, are important to the economy of almost every country. But in immense, fast-developing Brazil, they are vital.

What is Brazil doing to supply the oil needs of its transportation facilities and the requirements of its other industrial, agricultural and commercial consumers of petroleum products? The answer is found in the country's expanding oil industry.

## Refinery Capacity Rising

Back in 1950, Brazil refined barely 11,000 barrels of crude oil a day. Today, total refining capacity is about 145,000 barrels, or slightly better than 55 percent of the nation's daily requirements. Refinery construction and expansion now under way, it is hoped, will make it possible for Brazil's processing plants to supply over 80 percent of the nation's total needs in another three years.

In all, there are eight refineries—most of them in the Rio de Janeiro-Sao Paulo area. The largest is the Refinaria Presidente Bernardes. This is located at Cubatao, in the State of Sao Paulo. Currently

this refinery is processing 73,000 barrels a day, but an expansion program, scheduled for completion this year, will raise capacity to the 100,000 barrels-a-day level.

Indicative of the rapid growth of the Brazilian oil industry, geographically as well as physically, is the Cia. de Petroleo da Amazonia refinery at Manaus, some 1,000 miles inland from the mouth of the Amazon River and almost 2,000 airline miles northwest of Rio. Manaus was a great rubber center in bygone years. Today, through its 5,000 barrel-a-day refinery, it is contributing to Brazil's goal of self-sufficiency in finished petroleum products.

### New Processing Plant

The refinery at Manaus won't be Brazil's newest for long. Under construction on a 2,000-acre site in Guanabara Bay, near Rio de Janeiro, is a new processing plant with 90,000 barrel-a-day rated capacity. It is this unit, known as the Duque de Caxias refinery, that will upon completion in 1961 enable Brazil to supply about four-fifths of its own daily petroleum requirements.

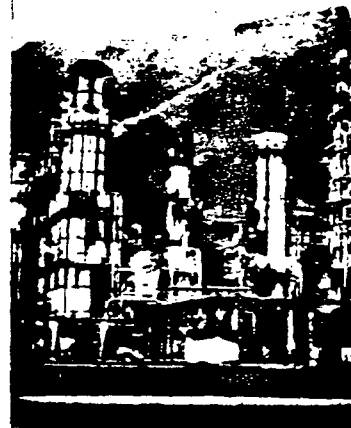
The Duque de Caxias refinery is being constructed by Petroleo Brasileiro S.A., more familiarly known as Petrobras, the state-owned petroleum agency. This company also operates the nation's largest refinery at Cubatao as well as a smaller refinery at Mataripe.

Active in Brazil, beside Petrobras, are several privately-owned and operated oil companies. In addition to the Cia. de Petroleo da Amazonia refinery at Manaus, there are the 20,000 barrel-a-day Refinaria de Petroleo Uniao at Sao Paulo, the 10,000 barrel-a-day Refinaria de Petroleo de Manguinhos at Rio de Janeiro, and the 7,000 barrel-a-day Refinaria de Petroleo Ipiranga at Rio Grande do Sul. The Manguinhos refinery helps supply the fast growing oil requirements of metropolitan Rio.

While the discovery of oil has not kept pace with the nation's increasing refining capacity, Brazil is attempting to reduce its oil imports by pushing exploration and production within its own borders.

Right now, the Bahia field in the east-central coastal state of the same name, is yielding about 40,000 barrels a day. To process the increased production of this high paraffin-base crude, Petrobras is expanding its Mataripe refinery.

When this enlargement is completed late this year, capacity at Mataripe will vault from the pres-



Helping supply the oil requirements

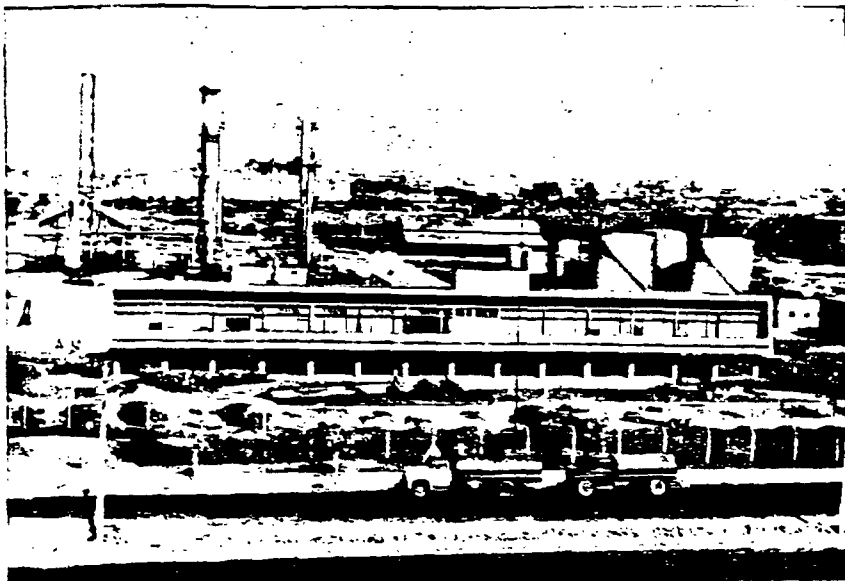
ent 5,000 barrels a day to about 37,000 barrels daily, making it the second largest refinery in the country. The expanded refinery will specialize in lube oils, and is expected to be able to meet the entire Brazilian market requirements for these products within three years.

Ethyl Corporation—known in Brazil and other overseas countries as ETHYL USA—has helped contribute to the advancement of the Brazilian petroleum industry. Refiners in Brazil have available to them, through ETHYL USA, the same array of services provided for refiners in the United States and other nations of the free world.

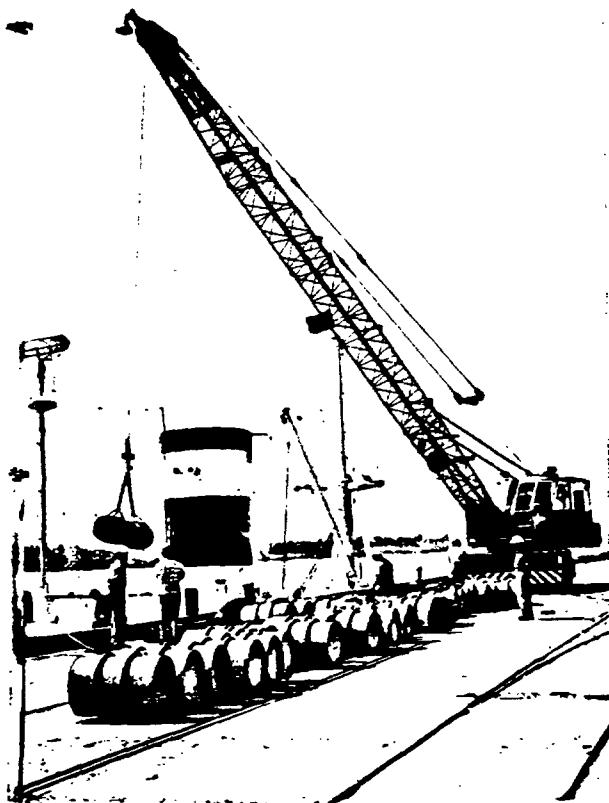
### Road Test Program

In Brazil, particularly valuable is Ethyl's long and unmatched experience in automotive-petroleum technical matters. ETHYL USA technicians sent to Brazil, for instance, worked closely with personnel of Petrobras and other Brazilian oil companies in the evaluation of gasolines under actual road conditions. Much of this work was done with a specially instrumented test car obtained through ETHYL USA.

Through assistance such as the gasoline evaluation studies, oil companies in Brazil have come to rely upon ETHYL USA for many other technical,



Two of the largest refineries in Brazil are Petrobras' Presidente Bernardes refinery at Cubatao and the Manguinhos refinery at Rio de Janeiro.



safety and product services. For its customers, Ethyl provides the latest information on developments and trends in fuels, engines and lubricants. Its refinery technology section makes complete blending studies to help individual refiners produce desired gasolines most efficiently.

Petrobras and the privately-owned oil companies depend, too, upon Ethyl to provide the great bulk of antiknock compounds required to continue the upgrading of Brazilian motor fuel. Of Ethyl's four manufacturing centers (three in the United States and one in Canada) the two largest are in the Gulf Coast region and are the nearest and most convenient sources of supply.

By assuring adequate and on-time deliveries of "Ethyl" antiknock compound and by providing a full program of customer services, ETHYL USA is helping the Brazilian oil industry make progress in supplying the needs of the country's fast-growing economy. #

"Ethyl" antiknock compounds, used widely by Brazilian refiners to upgrade their gasolines, are shipped from convenient ports on the Gulf Coast.

## Stephen B. Rodi Heads Employee Relations



Stephen B. Rodi

**S**TEPHEN B. RODI of Baton Rouge and New Orleans, La., has been appointed director of employee relations for Ethyl Corporation. In his new position Mr. Rodi is responsible for the Company's overall employee relations program at all locations.

Mr. Rodi's headquarters are at Ethyl's home office in New York City. He reports directly to B. B. Turner, Company president.

The employee relations department at Ethyl had been under the direction of G. O. Hayes since the latter part of 1956. Mr. Hayes was subsequently appointed general manager of the Company's Manufacturing department in October of 1957, and served as head of both departments. Mr. Hayes is continuing as general manager of the Manufacturing department.

Before assuming his new position, Mr. Rodi had served as an attorney at Ethyl's Baton Rouge manufacturing plant since 1951. #

## Graduate Fellowships Provided for 22nd Year

**F**OR THE 22ND CONSECUTIVE YEAR, Ethyl Corporation is providing a full program of graduate research fellowships at leading colleges and universities throughout the country.

Total value of the 21 awards for the current academic year—in the fields of chemistry, chemical engineering, mechanical engineering, industrial engineering, and science teaching—is almost \$60,000. Most of the fellowships carry a stipend of \$1,800 each for living expenses plus an allowance for tuition and fees. In addition, each university department concerned receives \$600 for expenses in connection with the fellow's research work.

Institutions at which Ethyl's 1958-1959 fellowships are held, the fields of study, and the names of the recipients are:

University of Cincinnati, chemistry, Fred W. Breitner III; Columbia University, science teaching (individual fellows not identified with contributing companies); Cornell University, mechanical engineering, Michael W. French; University of Delaware, chemical engineering, Donald C. Bogue; University of Detroit, chemistry, Timothy P. Flynn; Florida State University, chemistry, Fred J. Impastato; University of Florida, chemical engineering, Fritz R. Frank.

Georgia Institute of Technology, chemical engineering, Olin M. Fuller, Jr.; University of Illinois, chemistry, Marvin M. Goldstein; State University of Iowa, chemistry, Helmuth M. Gilow; University of Kansas, chemical engineering, Jerry L. VandenBoom; Louisiana State University, chemical engineering, Byron L. Rogillio; University of Minnesota, chemistry, Donald A. Bolon; Ohio State University, chemistry, Carl D. Slater.

University of Oklahoma, chemical engineering, Thomas D. Perkins; Oklahoma State University, industrial engineering, David G. Gates; Purdue University, chemistry, Frank P. Gortsema; Tulane University, chemical engineering, Herbert Behrend III; University of Tulsa, chemical engineering, Jack W. Wright; Wayne State University, chemistry, James L. Coke; and University of Wisconsin, mechanical engineering, Melvin P. Weiss. #

## Ethyl Executives Receive Scientific Awards



Julian M. Avery

**T**WO ETHYL CORPORATION EXECUTIVES have received outstanding scientific awards recently.

Julian M. Avery, technical advisor to the Company, was awarded the Francis J. Clamer medal by the Franklin Institute in Philadelphia for his invention of a high pressure method of blast furnace operation used in the production of pig iron.

Charles M. Gambrill, analytical coordinator at Ethyl's Research Laboratories in Detroit, has received the Anachem award in analytical chemistry from the Association of Analytical Chemists. #



Charles M. Gambrill



ROAD BUILDING

## You can be sure of MORE NEEDS

**I**N THE NEXT FEW YEARS, America will need more than \$500 billion worth of schools, highways, homes and durable equipment.

It is estimated that we will have to spend some \$50 billion just for schools and hospitals.

Our \$60-billion road program calls for 41,000 miles of new super-highways in the next 13 years—to help carry an estimated 73 million motor vehicles with greater ease and safety.

Increasing population stimulates demand for housing of all kinds—especially in the suburbs.

If last year is any indication, over \$20 billion will be spent for home furnishings and appliances annually.

We'll need more community services and new churches, youth centers and welfare institutions.

As we satisfy our mounting needs, we will be contributing to the growth of America. #



HOUSING



HOME FURNISHINGS

SCHOOLS

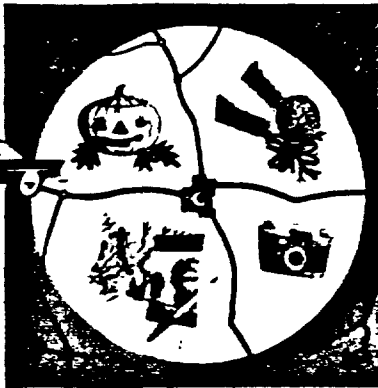


This message is published in cooperation with The Advertising Council's "Confidence in America" campaign.



ETC 30920

Your car makes  
any map  
a Magic Circle

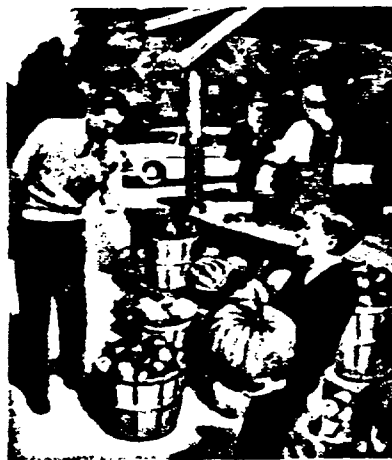


**T**AKE YOUR MAP and draw a line around the spot where you live—circling an area that's within easy driving reach.

Right there, you've got your Magic Circle—full of things to do and places to see. And right now, full of the riotous colors of autumn.



**1. Load up your camera . . .** then load up the family car for a wonderful afternoon of cruising through fall's unbelievable landscapes.



**4. Seek out the roadside stands.** Most likely you'll find several within easy driving distance, and you can fill your car with the cream of the fall harvest.



**2. Follow King Football.** When you get a carful of friends together, it's a fun-filled excursion win or lose.



**3. Try out that new stretch of turnpike . . .** it makes your Magic Circle bigger than ever.

You've got the car, and your Magic Circle fun starts at the end of your driveway. In fact, if you're missing out on *this* kind of driving, you aren't enjoying half of what your car offers you.

Just pick up your map and your car keys and see for yourself.



**ETHYL CORPORATION**

Manufacturers of "Ethyl" antiknock compounds . . . used by oil companies everywhere to improve their gasolines and your driving pleasure



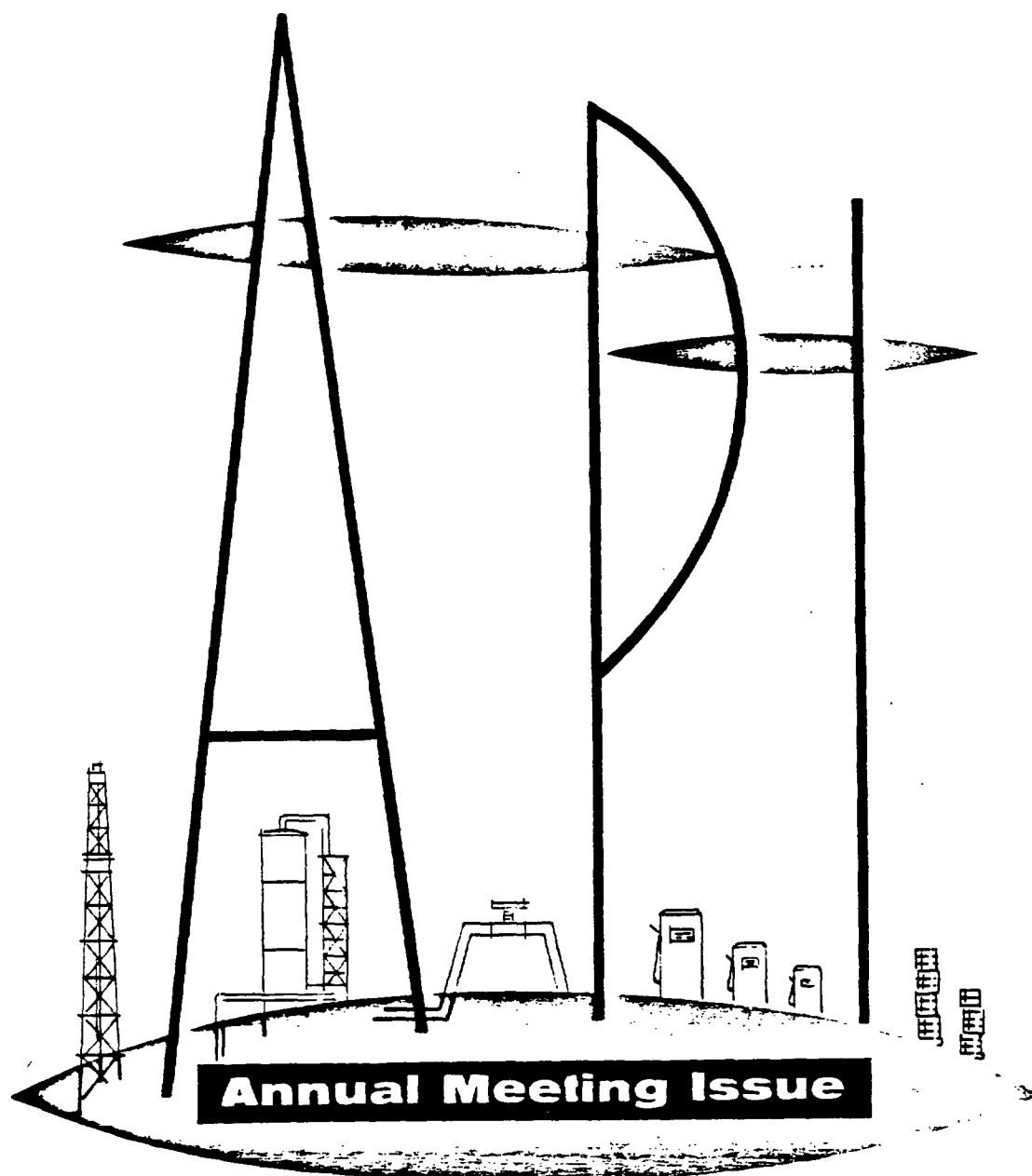
**IT'S FUN TO EXPLORE**

**YOUR MAGIC CIRCLE**

ETC 30921

# ETHYL NEWS

NOVEMBER-DECEMBER 1958



ETC 30922

# ANNUAL MEETINGS

## ETHYL NEWS

NOVEMBER - DECEMBER 1958

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## AMERICAN PETROLEUM INSTITUTE



API

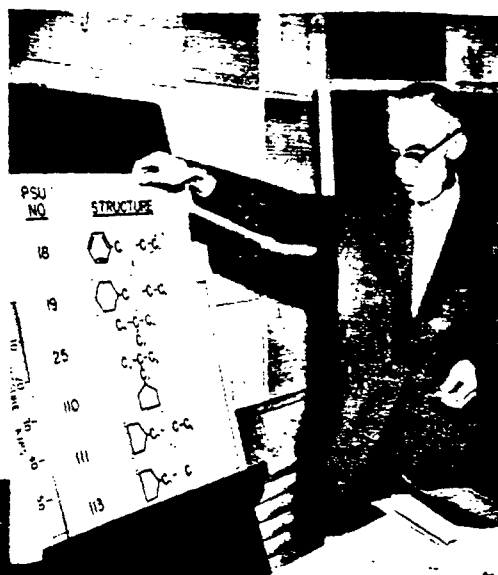


API



ISSUE

API



API



API



API



API

Long after the dates of November 10-12, 1958, have been forgotten, the cumulative impact and significance of the American Petroleum Institute's 38th annual meeting will continue. A carefully-balanced program provided opportunities for oilmen gathered in Chicago to evaluate past accomplishments, concentrate on current projects and prepare for still greater usefulness to the free world in the years ahead. In this its 14th pictorial report on annual API meetings, ETHYL NEWS hopes it has caught a representative part of the oil industry's constructive and progressive spirit of service to mankind. — The Editors

ETC 30924

# Chicago

## Back in



Above, T. B. Kimball, president of Sinclair Refining (right), and Joseph P. Walsh, of Sinclair Oil, checking on their grips with the bell captain at the Conrad Hilton.



Left, E. G. Spottswood and W. R. Remalia, of Amoco, registering for the 38th annual API meeting.

Below, early arrivals on Sunday included these four men from Delhi-Taylor Oil: Lewis Gross, Harry Wamke, E. E. Jackson and Carrol C. Cook . . . Right, C. O. Anderson, of Rock Island Refining, points out his luggage to a bellboy before going upstairs to his hotel room.



ETC 30925

ON THE crest of what many observers believe is a new wave of prosperity for the free world, 6,283 oilmen from the United States, Canada and other nations poured into Chicago this fall for the 38th annual meeting of the API.

Most delegates arrived before the meeting began officially on November 10 and remained until it ended on the 12th, to join in events scheduled at the Conrad Hilton, Palmer House and Congress hotels. Many key committees, however, met as early as November 6. The last one adjourned on the 13th.

Pictures on these pages represent typical arrival and getting-settled activities.

Below, H. G. Pegues and J. P. Robins, United Gas Pipe Line, about to enter the Conrad Hilton's Michigan Avenue entrance.



Below, Randolph Yost, Pan American Petroleum executive vice president, and A. D. Gray, Union Oil of California, filling out their meeting attendance cards.



Herschel Y. Hyde, Tidewater vice president, was among those signing in before most of the crowd had arrived.



Above, arriving early expedited hotel room registration for B. A. Klukoski and R. J. Oosdyke, both of Leonard Refineries . . . Below, others who signed in on Sunday included Dwight F. Benton, Standard of Indiana vice president, and Edward Emrick, Jr., of Ashland Oil & Refining.



## Back In Chicago



E. K. Ketcham, Anderson-Prichard Oil vice president, and J. A. Pell, of the Chase Manhattan Bank, get their hotel accommodations after waiting in line patiently.



Left, Randolph W. Sluter, owner-president of Charles Martin & Co., and L. B. Houghton, Union Oil of California, registering at the Palmer House . . . Below, another delegate, J. F. Beardslee, of Derby Refining, filling out his card.



ETC 30927

Left, Socony Mobil director George S. Dunham and Thomas J. Hartnett, of Clark Oil & Refining, exchange greetings while signing in for the meeting.



Cards with names and company affiliations were available as identification badges at a Hilton balcony booth. In this picture, A. E. Heimburger, Rock Island Refining, and John H. Krestan, Battenfeld Grease & Oil executive vice president, are applying for theirs.



Among oilmen en route to a professional football game on Sunday afternoon, before the annual meeting began, were Midland Cooperatives' T. B. Randall; Laurence D. Reis, of Ethyl; and O. V. Henry and G. F. Poe, both of Ohio Oil.

Sports-minded delegates found buses waiting to take them to a gridiron clash between Chicago's Bears and the Green Bay Packers. This picture shows some of those leaving from the Hilton's 8th Street exit.



Petroleum Week's bulletin board, where the hotel rooms of all in attendance were posted, helped everyone locate friends and business associates easily and quickly.



# Accounting

## Finance and



Ralph A. Martin, Standard of Ohio, received a certificate of appreciation from A. A. Buzzi, of Shell Oil, outgoing API vice president for Finance and Accounting who presided at the division's group sessions.



Up from Tulsa to talk on the subject "Determining the Cost of Finding and Producing Gas under Federal Power Commission Regulation" was S. P. Porter, of Arthur Young and Co.

"What Price Inflation?" was the provocative title of a speech Milton Friedman, University of Chicago economics professor, gave to financial oilmen.



Both of the division's group sessions were well attended. Shown in this photograph is a part of Monday morning's interested audience.



# Finance and Accounting



**I**F GROWING fears of substantial inflation in coming decades are realized, it probably will be as a result of "over-reaction by governmental authorities to economic recessions that occur from time to time." So spoke Prof. Milton Friedman, of the University of Chicago, at the second of two Finance and Accounting group sessions. At the first, S. P. Porter, of Arthur Young and Company, predicted that the Federal Power Commission will face "one of the most complex cost accounting problems ever presented to a regulatory agency" if it attempts to fix the price of natural gas through a system based on determination of the cost of exploration and production.

W. J. Arnold, of Pure Oil, became the first elected API vice president for Finance and Accounting when he was voted into the post a few hours after the board of directors amended by-laws to provide for election to the office instead of appointment as heretofore.

Below, W. J. Arnold, of Pure Oil, who was elected new API vice president for Finance and Accounting, and C. J. Senger, of Warren Petroleum, at the General committee meeting.



Alfred E. Wolf, Standard of Ohio vice president (head of table), presided over the Corporate Finance committee.

## Finance and Accounting



Among those in the Monday morning group session audience was E. G. Sommer, of Standard Oil Company (Kentucky).



P. C. Salman, Socony Mobil, who reported for the division's Nominating committee, and Donald P. Jones, of Sun Oil, talk shop at the committee's Sunday gathering.



M. L. Rufer, Standard of Indiana; A. G. Schei, Shell Oil vice president; and A. F. Hagen, Shell Pipeline vice president, follow the proceedings of a Finance and Accounting meeting.



This financial trio includes Max Lorimore, Union Oil; S. D. Williams, Sohio Petroleum; and C. P. Shields, Standard of Ohio.

Included in a session audience were Hubert H. Raborn, Kerr-McGee Oil Industries; Claude W. Dodger, Jr., Frankfort Oil; and Benjamin S. Adamowski, Great American Oil.





# Public Affairs



Key participants in the Committee on Public Affairs' group session were API board chairman H. S. M. Burns, president of Shell, who presided, and Kerry King, Texas Company vice president, committee chairman.

Right, guest speakers who urged better public relations for the oil industry were Louis B. Seltzer, *Cleveland Press* editor, and Lyle C. Wilson, vice president and Washington manager of United Press International.

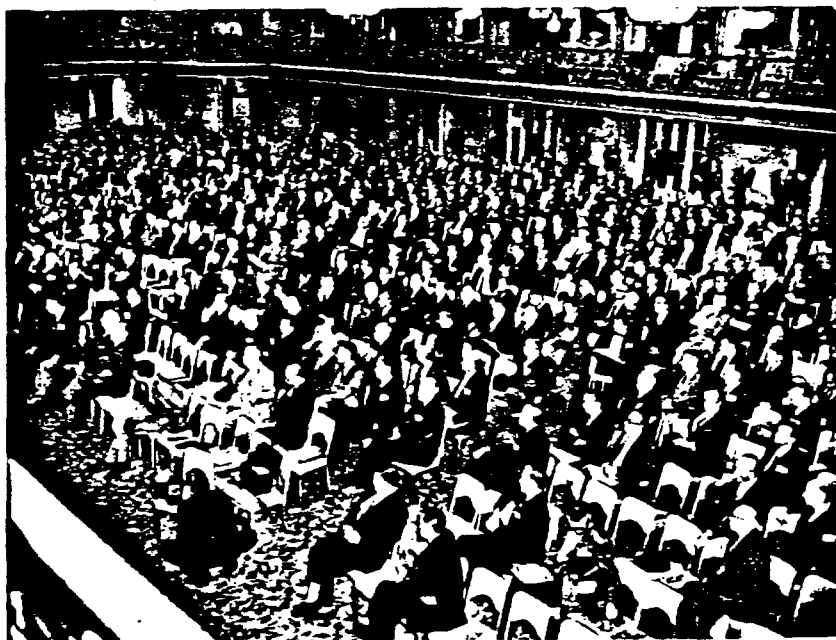
**B**BETTER public understanding and appreciation of the oil industry will require "each one of us to go out and work like blazes." Kerry King, Texaco vice president and chairman of the recently organized API Committee on Public Affairs, stirred his audience with this plea as he reported at a group session on Monday.

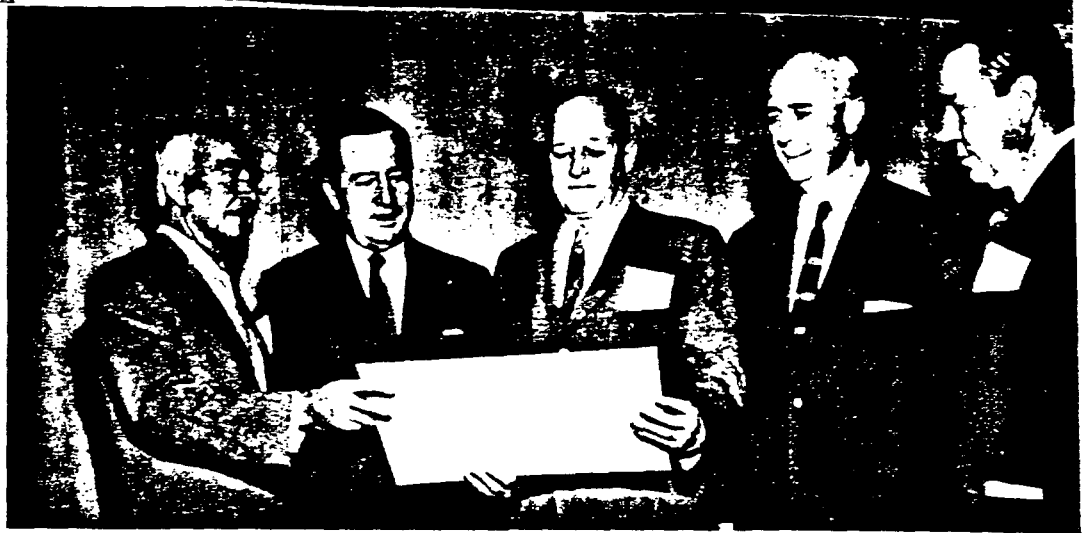
His viewpoint was endorsed and amplified by two guest speakers, Lyle C. Wilson, vice president of United Press International, and Louis B. Seltzer, editor of *The Cleveland Press*.

Certificates of appreciation were awarded 24 members of the new committee's predecessors, the Oil Information Committee and the American Petroleum Industries Committee.



Oilmen listening to speakers summarize public attitudes toward the petroleum industry.



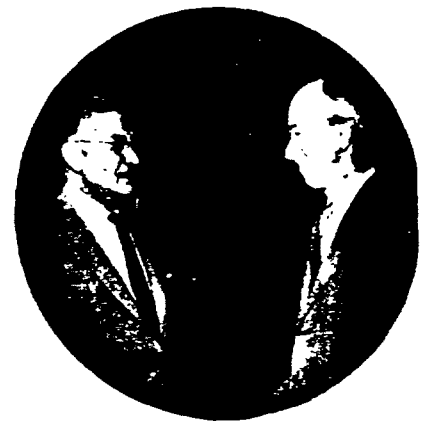


Among those receiving certificates of appreciation as members of the former Oil Information committee and American Petroleum Industries committee were W. A. Alexander, vice president, and W. M. Johnson, both of Shell; James L. Sewell, Delhi-Taylor Oil president; R. L. Milligan, president of Pure Oil; and Merrill H. Utley, Standard Oil of Kentucky.



Right, Oscar John Dorwin, Texaco vice president, was one of nine who received APIC certificates.

This poster outside the ballroom helped draw a full house for the CPA group session. Shown reading it are Stanton K. Smith, president of Smith Oil & Refining; P. C. Humphrey of the API; and R. H. Collocott, Standard of Ohio.



Above, waiting for an elevator in the Conrad Hilton lobby: John H. Bivins, CPA director, and Robert H. Scholl, Esso Standard vice president. . . . Below, M. S. Hauser of Ohio Oil, and his company's president, J. C. Donnell II.



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Above, Franklyn Waltman, of Sun Oil, and James E. Boudreau, of Ethyl Corporation, discuss the public relations value of the ton-mile concept of gasoline progress and the Ethyl display on the subject.

Left, among those in the group session audience were J. W. Jordan, Sinclair Oil and Gas vice chairman and C. F. McGoughran, Sinclair Oil secretary.

Among those discussing the proceedings of the CPA meeting were, below left, T. H. Paulsen, Ashland Oil & Refining, and C. M. Ridgway, Pure Oil, and, below right, Howard Paxton, of Shell Oil, and Bouwe Dykstra, Shell Oil vice president.



# Sessions

## General



**G**ENERAL sessions held on Monday afternoon and Wednesday morning attracted hundreds of oilmen to the Conrad Hilton's grand ballroom. Highlights of the first included presentation of the API gold medal to W. S. S. Rodgers, former Texas Company board chairman; API president Frank M. Porter's annual message; and a stirring talk by George Romney, president of American Motors. Mr. Romney charged both Republicans and Democrats with failing to "provide the public with a choice of action on major issues that will make or break America."

Talks by Morgan J. Davis, president of Humble Oil & Refining; E. V. Murphree, president of Esso Research and Engineering and chairman of the board of directors of the Fifth World Petroleum Congress; and Lee A. DuBridge, president of California Institute of Technology, were features of the second session.



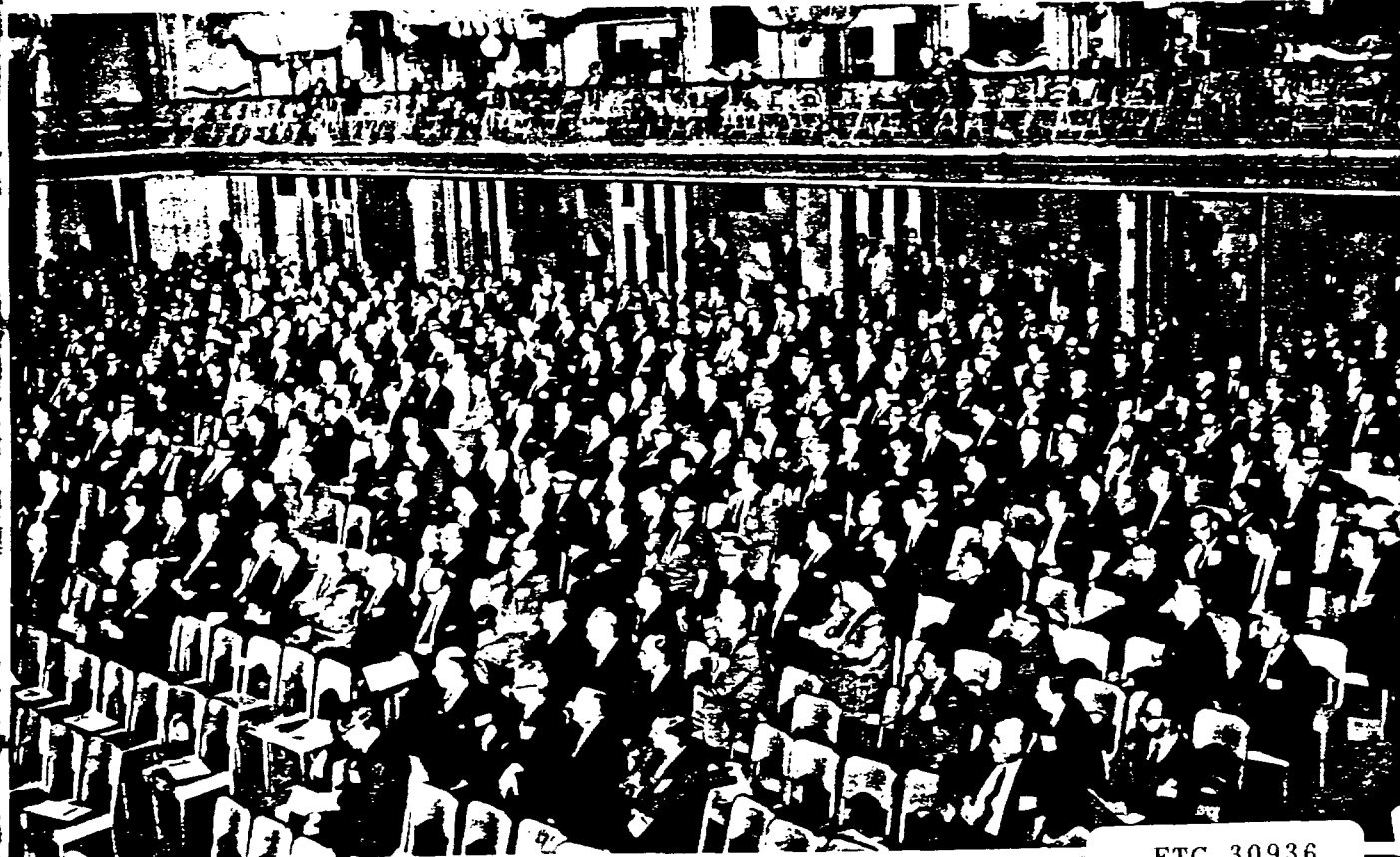
H. S. M. Burns, Shell Oil president and API board chairman, presided at both general sessions. Above left, he presents the API gold medal for distinguished achievement and accompanying certificate to W. S. S. Rodgers, former Texas Company board chairman . . . Left, second general session speakers included E. V. Murphree, president of Esso Research and Engineering and chairman of the board of directors of the Fifth World Petroleum Congress; Lee A. DuBridge, president of California Institute of Technology; and Morgan J. Davis, president of Humble Oil & Refining . . . Below, Willard M. Wilson, API secretary, reported the board of councillors' nominations for members of the board of directors.



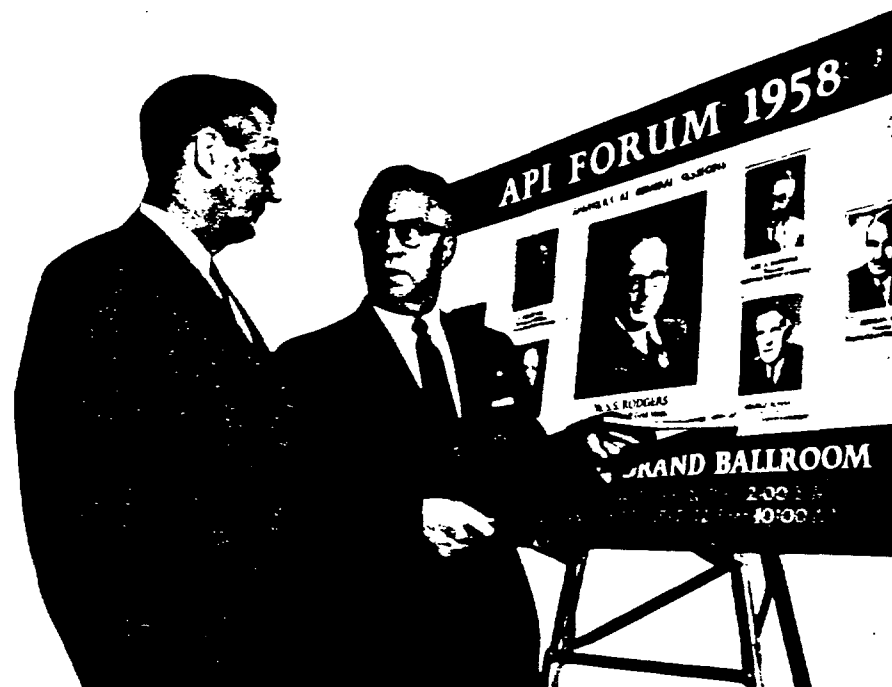
# General Sessions



Above, API president Frank M. Porter, who delivered his annual report at the first general session, and George Romney, American Motors president, who addressed the same session . . . Right, interested spectators at the second general session included these oil company presidents: R. W. McDowell, of D-X Sunray, and Reid Brazell, of Leonard Refineries . . . Below, a portion of one of the large audiences that assembled in the Hilton ballroom for general sessions.



## General Sessions



Above, perusing the poster that announced general session speakers are S. L. Jackson, Standard of Indiana, and L. H. Major, Valvoline Oil vice president.



Left, taking a minute to discuss the meeting's agenda are F. W. Bartlett, Socony Mobil board chairman, and T. A. Pollard, Magnolia Petroleum.



Below left, David Proctor, board chairman, and William L. Naylor, senior vice president, both of Gulf Oil, were photographed before a session's start.



Below, this audience twosome includes T. F. McGarey, Cities Service Oil vice president, and J. F. Nelson, treasurer of Cities Service Company.



Early arrivals at Monday's general session included Robert P. Ferguson, of Esso Standard Oil, and Harry C. Marschalk, of McCann-Erickson, Inc.



This candid audience photo shows Douglas Ragland, of Humble Oil & Refining, and H. W. Haight, president of Creole Petroleum.



Above, among interested session-goers was this Texas Company vice presidential trio. It is made up of S. C. Bartlett, J. S. Worden and T. A. Mangelsdorf.



Right, some Pure Oil representatives at the sessions were Frank W. Lennon, J. W. Spence and John G. Cherry.

# There Here and



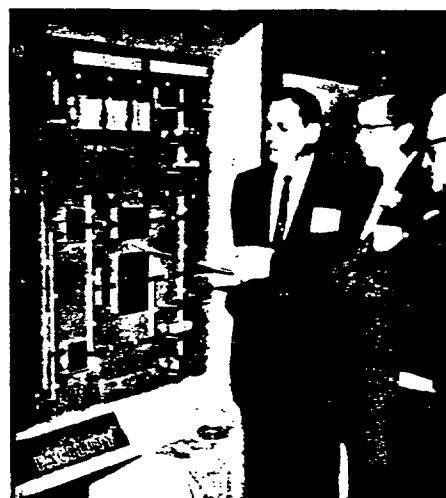
Taking things easy for a moment are Murray Hale and Vice President R. L. Grogan, of Clark Oil, and J. H. Barksdale, executive vice president of Triangle Refineries.



Photographed in a corridor conversation were John F. Smith, of the API, and C. J. Kerwin, of Sunray Mid-Continent Oil.



A threesome of oil company officers—Emil E. Ebner, vice president of Quaker State Oil; Harry A. Logan, Jr., president of United Refining; and Harry R. Lewis, board chairman of Commerce Oil.

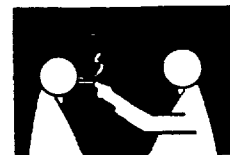


Viewing a wall display are Mites Cowden, of Cooperative Refinery Association; John A. Swanson, of Midland Cooperatives; and A. J. Barth, vice president of Sumner Sollitt Co.



Left, R. J. Potts, of West Branch Refineries; J. R. Fuller, of Osceola Refining; Ray C. Andres, president of Osceola; L. A. Dollahan, of Ethyl; Armond R. Hansen, executive vice president of Osceola Refining; and William L. Warner, also Osceola.

# Here and There



David T. Oakes, of Lion Oil, accepts an out-of-town newspaper from Robert Lough, of American Airlines.



Among those attending the Association of Petroleum Writers' annual dinner were John Cooke, of the API; Lacey Walker, retired API secretary and convention manager; and Clarel B. Mapes, secretary-treasurer of the Mid-Continent Oil and Gas Association.



President W. M. Flowers, of Sinclair Research (center), joins two of his vice presidents, C. J. Francisco and E. J. Martin, for a visit at another company's hospitality suite.



Among the Canadian representatives at the annual meeting were W. T. Askew, Sun Oil of Canada president, and F. G. Crosby, also Sun of Canada.



Enjoying an oyster and shrimp snack are H. E. Cottrell, of Ethyl, and two American Petrofina executives—J. K. MacKinnon and Truett Harlin.

# Transportation

## Division of

**H**EADQUARTERED at the Palmer House, the Division of Transportation held one group session and some 18 committee gatherings during the 38th annual meeting. In addition, many oilmen enjoyed renewing acquaintanceships at the Pipe Liners and Transportation club dinners on Monday evening.

At the group session, Athelstan Spilhaus, of the University of Minnesota, pointed out that man's scientific understanding of the world has been made possible by modern transportation facilities. "Understanding in science is best achieved," he said, "when people sit down face to face and discuss problems."

John S. Burchmore, of the National Industrial Traffic League, the other featured speaker, described himself as an "advocate for shippers" and attributed the problems of railroads to "unequal and unbearable taxation and government-generated inflation."



Athelstan F. Spilhaus, dean of the University of Minnesota Institute of Technology, addressed the group session on the subject "How Vehicles Stretch Our Reach in Geophysics."



At the Transportation division's General committee luncheon head table are R. D. McGranahan, Gulf Oil vice president, and C. E. Spahr, Standard of Ohio president. Mr. Spahr, API vice president for Transportation, presided at the group session.



Right, D. C. Graves, Union Tank Car vice president, and Chairman E. E. Wickman, Shell Oil, at the Committee on Railroad Equipment meeting.

# Division of Transportation



John S. Burchmore, general counsel of the National Industrial Traffic League, was a featured group session speaker.



A. E. Pecore, vice president of Humble Pipe Line, reported for the Nominating committee of which he is chairman.



R. H. Lynch, Atlantic Pipe Line vice president, presided at the Central Committee on Pipeline Transportation meeting.



Above, at the Central Committee on Pipeline Transportation were Charles W. Hubbell, Phillips Petroleum, and Donald F. Sears, Shell Pipe Line vice president.

Right, conferring before the start of the group session are E. A. Locke, Jr., Union Tank Car president, and Fred Ainsworth, Canadian Husky Oil, Ltd.



Below, at the Central Committee on Highway Transportation head table are H. F. Bloodworth and H. D. Carmichael, both Standard of Kentucky; L. E. Reed, Socony Mobil, chairman; and W. O. Brubaker, of the API.



## Division of Transportation

Right, officers of the Pipe Liners Club include Ralph K. Paine, Standard of California, outgoing president; J. Marsten Linehan, Sunray Mid-Continent, incoming president; L. H. True, Magnolia Pipe Line president, member of the board of governors; and Oliver C. Klinger, Jr., Pipeline News, reelected secretary-treasurer.



An overall view of the oil industry transportation audience at the group session in the Palmer House.

Attentive listeners at the group session included R. L. Wagner, Great Lakes Pipe Line vice president; David Gregg, Jr., Buckeye Pipe Line; and C. F. Gearhart, Standard Oil Company (Indiana).



Attending the meeting of the Central Committee on Pipeline Transportation were Sinclair Pipe Liners Lewis B. Moon, vice president; C. H. Lindberg; and A. M. Stafford, also a vice president.



Right, Transportation Club officers in this informal group are (in front) W. H. Adams, Shell Oil, second vice president; and J. R. Lewallen, Anderson-Prichard vice president, new club president; and (in back) L. C. Davidson, Cities Service, incoming board chairman; P. J. Bond, Pure Oil, outgoing board chairman; and C. H. Wager, Shell Oil, outgoing president and new vice chairman of board.



Charles E. Spahr, Standard of Ohio president and API vice president for Transportation (sixth from left), presented certificates of appreciation to William G. Anderson, Atlantic Refining; A. D. Carleton, Standard of California; Mason S. Collett, Atlantic Refining; Fred Hague, Sun Oil; Albert E. Kihn, California Shipping; Edward L. Hoffman, Socony Mobil; Eugene W. Jacobsen, Gulf Research and Development; R. G. Strong, Natural Gas Pipeline of America (retired); and C. H. Wager, Shell Oil.

Below, two vice presidents enjoying the Pipe Liners get-together are C. S. Mitchell, Cities Service, and F. L. Newby, California Crude Sales.



# Refining

## Division of



L. C. Burroughs, of Shell Oil, gave the report of the division's Nominating committee.

**T**HE main speaker at the Refining group session on Tuesday was H. W. Ferguson, vice president of Humble Oil and retiring API vice president for Refining. Mr. Ferguson said that "although seasonal swings pose a continuing problem, the refining industry has adequate flexibility to meet any foreseeable variations in product demand."

Clarence H. Thayer, vice president of Sun Oil, was elected new API vice president for Refining.

Some thirty-five committee meetings also were held by the Refining division beginning as early as Thursday, November 6. The committee meetings covered a multitude of aspects of the refining branch of the industry.

Clarence H. Thayer, Sun Oil vice president, who was elected API vice president for Refining.



C. E. Davis, general secretary of the forthcoming Fifth World Petroleum Congress, and H. W. Ferguson, Humble Oil & Refining vice president, both of whom addressed the Tuesday session.

# Division of Refining



Three members of the group session audience were G. T. Pearson, Continental Oil; J. H. Dunn, Shamrock Oil & Gas president, and D. R. Johnson, also of Continental Oil.



Two Caltex men, Vern A. Raven and H. Catlow, seated in the audience at the forum on Operating Practices.



P. N. Gammelgard, vice president of Pure Oil, and W. R. Argyle, president of Commerce Oil, exchanged remarks at the group session.

Also at the Operating Practices forum were Wilbur G. Guild and George M. Keranen, both of whom are with Standard of Indiana.



Discussing the Tuesday group session are Charles F. Jones and R. H. Venn, both of Humble Oil & Refining.

## Division of Refining



Above, at the Smoke and Fumes committee meeting are C. C. Tate, Phillips Petroleum, committee chairman; Charles A. Jones, API; Jerry McAfee, vice president of Gulf; and W. H. Clausen, of California Research Corporation.



At the Program committee's head table are acting chairman David L. Campbell, vice president of British American Oil, and Ray R. Wright, a member of the API staff.



Above, the Refining division Executive committee. Presiding is J. C. Ducommun, Standard of Indiana, chairman . . . Right, an overall view of the General committee of the Refining division.



# Board of Directors

**T**RANSACTING API business occupied the Board of Directors at its several gatherings at the annual meeting. H. S. M. Burns, Shell Oil president, and Frank M. Porter, Fain-Porter Drilling Company president, were reelected chairman of the board and president, respectively. P. C. Spencer, Sinclair Oil board chairman, was reelected treasurer, and Willard M. Wilson was again

named secretary. Newly elected vice presidents were L. E. Fitzjarrald, Phillips Petroleum (Production); Clarence H. Thayer, Sun Oil vice president (Refining); C. J. Guzzo, Gulf Oil vice president (Marketing); and W. J. Arnold, Pure Oil (Finance and Accounting). C. E. Spahr, Standard of Ohio president, was reelected vice president for Transportation.



Above, H. S. M. Burns, Shell Oil president and API board chairman; Frank M. Porter, API president; and Willard M. Wilson, API secretary, prepare for a board meeting. . . . Right, hard at work at the Board of Councillors session are E. H. Hausner, Sinclair Refining; P. A. Kahle, Frontier Refining vice president; I. J. Staid, Carter Oil; and R. G. Clark, Utah Oil Refining vice president . . . Below, J. E. Howell, Lion Oil vice president, presided over the Board of Councillors.



## Board of Directors

Right, one of the Board of Councillors' groups nominating members of the Board of Directors included W. D. Cross, Jr., Sinclair Refining vice president (back to camera); Jess Knowles, Skelly Oil vice president; R. E. Decker, Plymouth Oil president; L. W. Sweet, Pure Oil vice president; and G. G. Woodruff, Globe Oil secretary.



Photographed at a board luncheon were A. F. Barrett, vice president of Mobil Producing, and G. J. Hanks, board chairman of South Penn Oil.

Board members in this twosome are R. L. Kidd, Cities Service Oil president, and J. Ed Warren, Cities Service executive committee chairman.



The camera made this study of Henderson Supplee, Jr., Atlantic Refining president, before the start of a directors' meeting.

Intent on proceedings of the board are E. L. Winkler, Rock Island Refining; R. L. Milligan, president of Pure Oil; and Wiley Butler, Coastal Oil president.





Talking business in a pre-session get-together are W. Alton Jones, Cities Service board chairman, and Charles S. Jones, Richfield president.



John E. Swearingen, Standard of Indiana president, greets P. C. Spencer, Sinclair Oil board chairman, at a directors' reception.



M. J. Rathbone, Standard Oil Company (New Jersey) president, and L. S. Wescoat, chairman of Pure Oil's executive committee, renew a long-standing acquaintanceship.



Clyde T. Foster, Standard of Ohio board chairman, and Burl S. Watson, Cities Service president, reflect on Institute affairs.

Below, C. Z. Hardwick, executive vice president of Ohio Oil, listens as A. L. Nickerson, Socony Mobil president, makes an interesting point.



Below, Alfred Jacobsen, Amerada Petroleum board chairman, and E. L. Steiniger, Sinclair Oil president, in conversation.



# the Acts

## Between

As always, the annual meeting provided an opportunity for company officials to get together to discuss informally matters of mutual interest. Shown here are B. H. Barnes, vice president of Gulf Oil; B. B. Turner, president of Ethyl Corporation; and J. L. Lenker, vice president of British American Oil.



Left, a between-sessions conversation is enjoyed by Paul H. Boyd and Dr. and Mrs. Robert W. Michaels. Both men are with Wilshire Oil.



Above, A. T. Basye, of Ethyl Corporation; Ralph L. Booker, executive vice president of National Cooperative Refinery Association; Dan W. Cameron, president of Cameron Crude Oil; and J. B. Hesse, National Cooperative Refinery.

Below, helping themselves at a buffet serving table are J. R. Wiggins, of Indiana Farm Bureau, and Ralph Gaden and H. D. Chrislip, both of Kerr-McGee Oil.





Ethyl Corporation's animated display, showing that modern gasoline does 70% more work at 18% less cost, interests John Sleeth, of Union Oil, and C. D. Cordry, of Gulf.

## Between the Acts



Above, C. F. Robertson and R. A. Young, both of M.F.A. Oil Company, take time out from the busy annual meeting schedule for a quick sandwich in a hotel drugstore.



En route to a session, Charles W. Haynie, of Carl M. Loebe Rhoades Company, and W. J. Carthaus, president of Great Northern Oil, stop for a moment's conversation.



New Yorkers all are this threesome—Donald S. Flynn, of Ethyl Corporation; L. C. Kemp, Jr., vice president of The Texas Company; and W. Vaughn Ischie, vice president of Sinclair Refining.



Left, Bert Edwards, of Carter Oil, and E. C. Wells, Jr., also Carter Oil, enjoy a brief get-together.

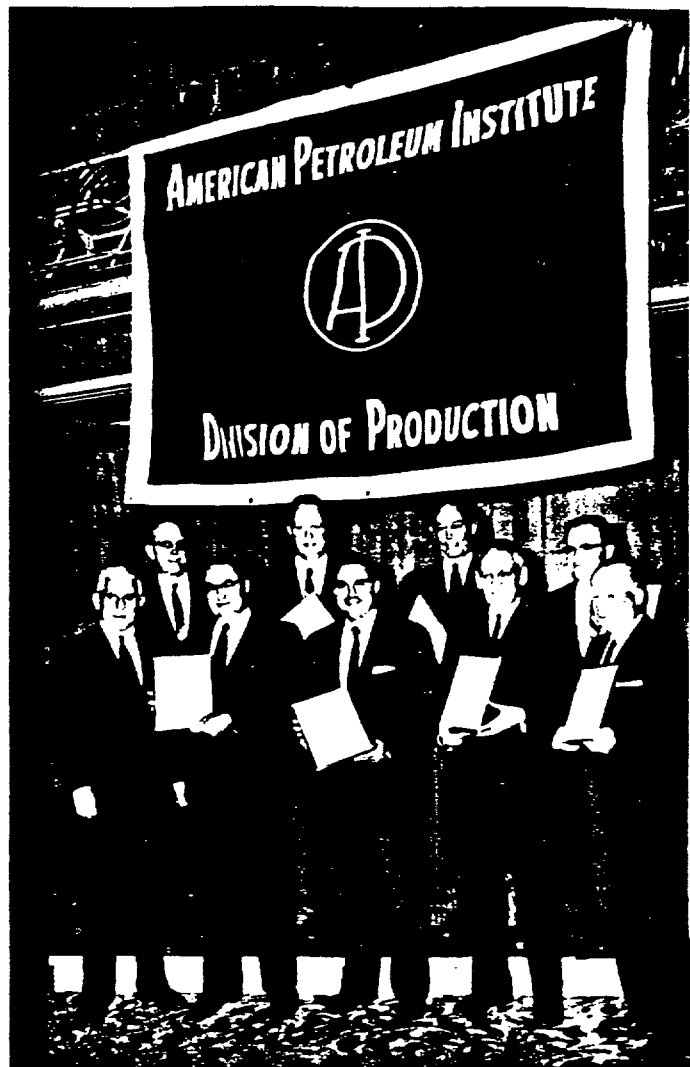
Right, photographed at a company reception, are Charles H. Barre, of Republic Oil, and L. W. Robbie, vice president of Texas City Refining.



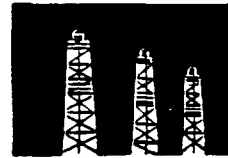
# Production

## Division of

Right, in this certificate of appreciation photo are: (front row) D. L. Connelly, vice president of Warren Petroleum and API Production vice president, who presented the awards; G. B. Kitchel, Kerr-McGee vice president; Milton T. Whitaker, General Petroleum, acting for J. O. Hills of the same company; R. B. Anderson, Columbian Carbon; and Frank H. Willibrand, Sohio Petroleum; and (back row) H. W. Perkins, of Sun; R. C. Craze, of Humble, for Humble's S. E. Buckley; Herbert F. Beardmore, Gulf; and R. S. Crog, Union, for the late Milan G. Arthur of Union. . . . Below, Jake L. Hamon, independent oilman, first to get the Carl A. Young Memorial Award, with Vice President Connelly. . . . Below right, L. E. Fitzjarrald, Phillips, incoming Production vice president, and F. H. Rhees, Sinclair Oil & Gas vice president, Nominating committee chairman.



# Division of Production



**S**PEAKERS focused production men's attention on such basic problems as conservation, oil imports and cost reduction at the division's group session in the Hilton ballroom on November 11. Industry leaders were honored and seven committees held busy meetings. New officers and general committeemen were chosen.

Principal addresses were given by L. F. McCollum, Continental Oil president; Charlton H. Lyons, Sr., partner in Lyons & Logan; and Thomas C. Mann, assistant secretary of state for economic affairs. The division's vice president, D. L. Connelly, vice president of Warren Petroleum, presided at the group session.



A featured group session speaker was L. F. McCollum, Continental Oil president, who discussed reducing production costs.



Another address at Tuesday's session was given by Charlton H. Lyons, Sr., partner in Lyons & Logan, whose topic was "Why Conservation?" . . . Below, Production's Central Committee on Training met on Monday, with participants including J. V. Blacklock, of Humble Oil & Refining; J. F. Smith, of the API; and R. E. Foss, D-X Sunray vice president, committee head.

A guest speaker at the group session was Thomas C. Mann, State Department assistant secretary for economic affairs, who analyzed key factors in the oil industry.



## Division of Production



D. V. Carter, Magnolia Petroleum; J. R. Hatfield, Cities Service Oil; and Eugene G. Leonardon, of Schlumberger Well Surveying, were among those busy at meetings of Production division committees.

Right, D. O. Meek, of the Gardner-Denver Company, and J. A. Tong, Socony Mobil de Venezuela president, listening to an address.



Roy F. Carlson, of the API, and Harold Denton, Sun Oil, chairman of the Executive Committee of the Central Committee on Drilling and Production Practice.



Above, topics covered by all Production speakers were so fundamental that they proved of equal interest to listeners like H. P. Ferris, of Chrysler, and Morral R. McArthur, executive vice president of Husky Oil. . . . Left, a section of the group session audience.





# Petroleum Statistics



"Oil's Challenge to the Economist" was the topic of an address by Robert G. Dunlop, Sun president.

**O**PTIMISM based on renewed upward trends in the nation's business and industrial growth was voiced by speakers at the Committee on Petroleum Statistics' meeting at the Hilton on Tuesday.

R. J. Eggert, of Ford Motor Co., predicted a 20 percent increase in car sales during 1959. Refiners must spend a billion dollars annually for at least 20 years to produce enough petroleum products, according to Austin Cadle, California Standard Oil. Robert G. Dunlop, president of Sun, said that economists will be of increasing importance in the orderly growth of the oil industry.

Right, other Petroleum Statistics speakers were R. J. Eggert, of Ford, and Austin Cadle, Standard Oil of California. They reviewed future prospects for the automotive and petroleum industries.



Below, complex economic aspects of progress in the oil industry were analyzed at the committee's meeting. Those attending included Clute Jensen, of Pan American Petroleum; Henri Schwall, Shell; Maynard I. Landa, Cities Service, committee chairman; James S. Cross, Sun Oil; E. T. Knight, Atlantic Refining; and William Leavitt, Standard Oil of Indiana.



# Buyers

## Industry



D. A. Monro, Standard of Indiana, presided at the group session.

**B**UYERS heard Charles E. Wilson, former Secretary of Defense and former president of General Motors, speak on "Tangible and Intangible Values" at their group session in the Boulevard room.

At the same session, L. R. Boulware, vice president of General Electric, urged businessmen to spend more time in political work in order to live up to their opportunities as citizens as well as representatives of business.

D. A. Monro, of Standard of Indiana, presided at the session. A panel discussion on "Inventory Utilization Program" was also held.



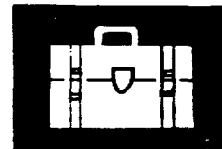
Part of the head table at the session were F. Gayle Hawk, Shell; C. E. Davis, general secretary, Fifth World Petroleum Congress; and Haylett O'Neill, of Humble Oil & Refining.

Among the audience were J. J. Arps, British American Oil Producing vice president; D. Fred Pollock, Military Petroleum Supply Agency; and Robert E. Kepke, British American president.



# Industry

# Buyers



Charles E. Wilson, former Secretary of Defense and former president of General Motors, and Lemuel R. Boulware, vice president of General Electric, were the featured speakers at the session.

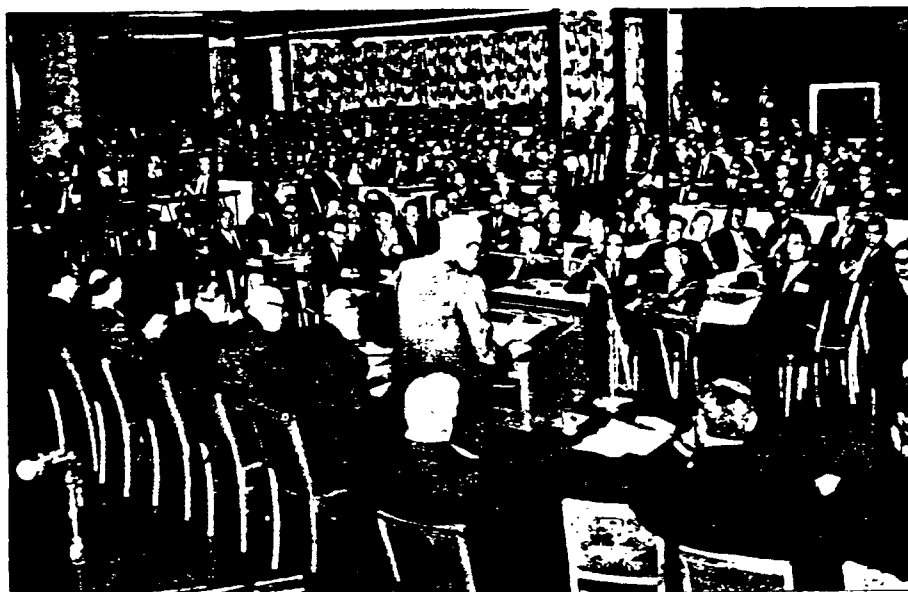


Among those in the group session audience was Walter J. Roberge, Lone Star Gas.



Left, T. C. Banta, Sinclair Refining vice president; J. R. Jones, duPont; and H. E. Chaffetz, of Kirkland, Ellis, Hodson, Chaffetz and Masters, took part in the panel discussion.

Part of the large audience that crowded the Boulevard Room for the group session, as seen from behind the speakers' table.



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# Marketing

## Division of



At the meeting of the General committee, Marketing, H. A. Inness Brown, publisher of *The Gasoline Retailer*, was presented a special resolution of appreciation by J. G. Jordan, Shell Oil vice president and chairman of the Awards committee.

**M**ARKETERS, as usual, were busy discussing the past year and making plans for the future ones. To this end, they held one group session and numerous committee meetings.

Among the new projects announced by the marketers is a \$3,000,000 program to promote the use of oil heat. It is the first major all-industry program to spur the growth of oil heat throughout its primary markets.

Plans were also announced for a new non-profit organization, the National Fueloil Council, Inc. This organization was formed to spur the new oil heat promotion.

Dwight T. Colley, outgoing API vice president for Marketing and Atlantic Refining Company vice president, presided at the group session. Charles J. Guzzo, Gulf Oil vice president, was elected new API vice president for Marketing.



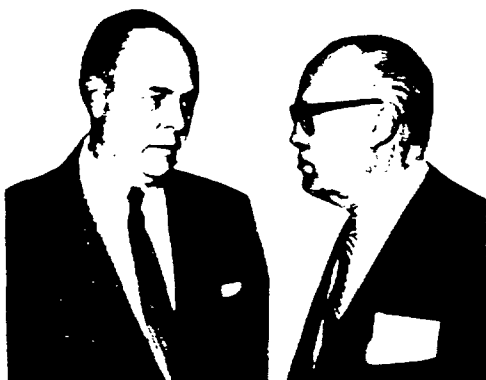
Left, Dwight T. Colley, Atlantic vice president, and recipients of API certificates of appreciation Peter W. Engels, Shell; Samuel Rosenwasser, S. R. Service Stations; and Nelson H. Seubert, Standard of New Jersey. Awards were made at the General committee meeting . . . Above, Roy J. Thompson, president of Apex Motor Fuel, and Charles Guzzo, Gulf vice president and new API vice president for Marketing.



## Division of Marketing



Left, Harry L. Moir, vice president of Pure Oil, was Nominating committee chairman.



W. G. Raith, Jr., of Becker-Marsden, and P. C. Thomas, Shell vice president, visiting at the marketers' buffet.

Below, L. R. Kamperman, vice president of Leonard Refineries, enroute to a table at the buffet luncheon.



At the meeting of the Commission Wholesale Marketers Advisory committee Monday were J. T. Kremer, Cities Service Oil; Clarence S. Boone, Humble Oil & Refining; George M. Sullivan, Continental vice president and committee chairman; Charles H. Miller, Texaco; H. Leonard Allen, of his own company; and Allen G. Griswold, Cities Service.

Participants in the Service Station Advisory committee's full day session included Norman S. Foley, Richfield; Elmer L. Horstmeyer, Ohio Standard Oil; and William K. Tell, of Ohio Oil.



## Division of Marketing



Left, at the podium at the Jobber Advisory committee is chairman R. O. Goodykoontz, Esso. Beside him are Howard Ingersoll, Atlantic, and John Harper, president of Harper Oil . . . Below, enjoying the marketers' buffet in the Congress hotel's Glass Hat room are presidents R. E. Decker, Plymouth Oil, and Fred E. Bergfors, Quincy Oil; and Plymouth vice president H. F. Barnes.



Right, Charles Pall, of Pall Service Station, and Ernest J. Langham, Sun Oil, enjoying luncheon.

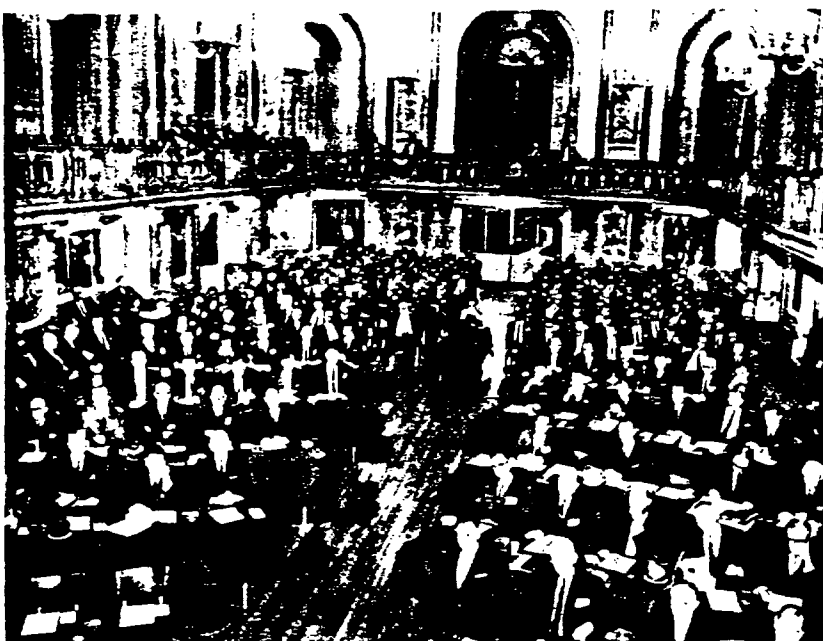


Above, George B. Vaughan, Gulf; Leo J. Hoar, vice president of Sinclair Refining; and Robert M. Jenney, president of Jenney Oil, at the Service Station Advisory committee. Mr. Hoar was chairman . . . Right, an overall view of the Marketers' buffet.





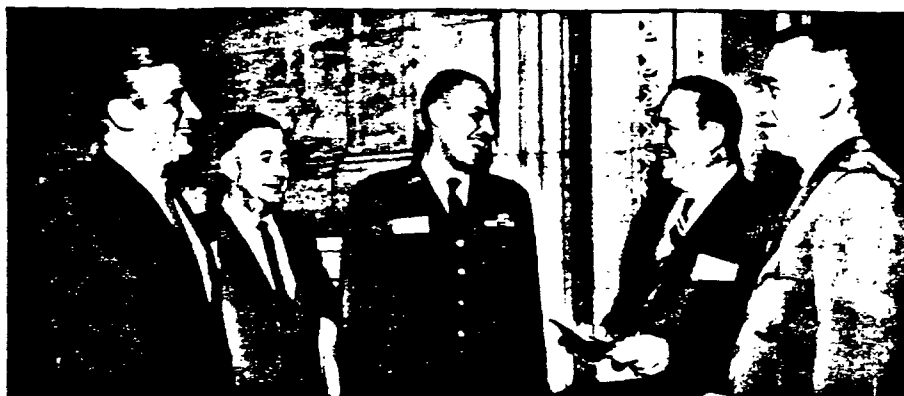
Above, at the Lubrication committee meeting are G. A. Olsen, president of Sunland Refining; G. Harold Osborne, Kendall Refining vice president and committee chairman; Austin Carlin, partner, Crystal Motor Oil; Howard P. Ferguson, Standard of Ohio; and James B. McNallen, API . . . Left, W. S. Mount, Socony Mobil, and Aubrey Keif, Texaco, at the Aviation Technical Service committee luncheon . . . Below left, Ralph Isselhardt, Cities Service, and Joe L. Nolan, Farmers Union Central Exchange, help themselves at the buffet . . . Below, among those at the Service Station Advisory committee meeting were Thomas B. Murphy, vice president of Western Oil & Fuel; C. W. Dyniewicz, Kerr-McGee; and F. W. Bules, Pure Oil.



Left, the General committee met in the spacious Gold Room of the Congress Hotel.

# Camera

## Candid



Above, this lobby gathering consists of E. J. Fourticq, vice president of Eastern States Petroleum and Chemical; H. L. Pond, vice president of Southland Oil; Col. C. F. Hardman, of the Military Petroleum Supply Agency; Douglas R. Brown, of Eastern States Petroleum and Chemical; and Major J. M. Phillips . . . Right, Cliff Burnet, of Shell Oil; D. W. Wilson, of Arthur G. McKee & Company; and Louis R. Goldsmith, of Shell Oil, form this conversation group.



Below, a view of the 25 Year Club's annual dinner. W. K. Whiteford, Gulf Oil president, is the new Club president, and J. Porter Langfitt, executive vice president of Pure Oil, is executive secretary.



A display for the World Petroleum Congress to be held in New York next year is of interest to Thomas L. Culbertson and E. C. Sommer, both of Esso Research & Engineering. The attendant is Miss Vlasta Jurco, of Standard of Indiana.

M. H. Robineau, president of Frontier Refining, and A. E. Johnson, Argo Oil board chairman.





Looking at a scale-model installation are Sumner Sollitt, president of his own company; H. F. Huf, of Atlantic Refining; and James P. Warner, of Esso Standard Oil.



Above, among the visitors from other lands was Carlos Corcuera, of Petroleas Mexicanos (center), shown here with Julian Frey, of Ethyl, and James Shambaugh, of Socony Mobil.

Right, D. L. Anderson, of Vickers Petroleum, and Mrs. Anderson, and A. M. Schrepfer, vice president of Vickers, and Mrs. Schrepfer.



Below right, exchanging comments on the day's program are Grover Kilgore, vice president of Halliburton Oil Well Cementing Company, and Ed Parkes, United Gas Corporation president.



# the Press

## Meet

Hard at work behind the scenes in the fifth floor press room are Roxy Dowling and David V. Stroop, both of the API.



**W**ITH NATIONALLY known industry, education and government figures speaking on subjects of far-reaching importance, plenty of news was made at the 38th annual meeting. On hand to report it in the daily, weekly and monthly press, and on radio and television, was a large corps of experienced reporters. In the bustling API press room, at group sessions and committee gatherings, and in lobbies, corridors and private rooms throughout the three meeting hotels, the oil press was hard at work. Thousands of words were sent round the world, some by special wire.

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The Newsweek Periscope Panel, headed by Ernest K. Lindley, answered a wide range of questions for oilmen gathered in the Hilton's North hall Tuesday noon.



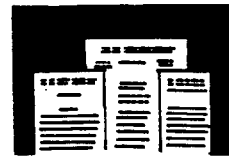
Replying to reporters' queries at a news conference devoted to next year's International Petroleum Exposition are William B. Way, IPE general manager; George Roberts, Jr., Hall of Science chairman; W. K. Warren, IPE president; William J. Sherry, Old Timers committee chairman; and Don L. Collins, IPE Nomad chairman.

Below, new Association of Petroleum Writers officers: J. C. Chatfield, *World Petroleum*, vice president; Thomas Dougherty, *Petroleum Information*, executive committee chairman; Riley W. Wilson, *Tulsa Daily World*, president; and Douglas Renfrow, *The Oil Daily*, secretary-treasurer.



Meet

the Press



API president Frank M. Porter met the press at his traditional conference on Monday morning. At his left was Joseph P. Buder, of the API staff.



Above, discussing their plans for covering the annual meeting are Frank O. Hall, *Wichita Falls Times*; Robert Scott, *World Oil*; and Billy G. Thompson, *Houston Post*.



J. Richard Shaner, API, and Robert E. Spann and William F. Bland, of *Petroleum Week*, enjoy a few moments of relaxation at the annual meeting of the APW.

Marion Cracraft, *Tulsa Tribune*, and David P. Thornton, Jr., Universal Oil Products, in friendly conversation.



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# at Work

## Committees

**G**ENERAL and group sessions drew the largest audiences again this year, but the work of tireless committees contributed more than a proportionate share to significant achievements of the annual API meeting.

Beginning as early as Thursday, November 6, and continuing for a week, 129 committee meetings were held. Although most of them lasted a morning or afternoon, some continued all day. Several groups met jointly.

Even when current problems were resolved, sights were set on the future, in accordance with the oil industry's established ability to move forward progressively.



Above, R. D. Swanson, Mobil Overseas Oil, presided at the Committee on Visual Aids meeting where the Ethyl-produced films "Danger!!! Water!!!" and "Refinery Fire on Signal Hill" were shown.

Right, at the Defense Services committee meeting are Capt. P. D. Chubb, Navy Fuel Supply Office; Rear Adm. O. P. Lattu, Military Petroleum Supply Agency; H. S. Merriman, Socony Mobil, chairman; and Lt. Col. R. H. Schwab, Petroleum Division, Department of the Army. . . . Below, at a meeting of the Medical and Health committee of the board of directors are C. B. Barrett, Texaco senior vice president; D. T. Staples, Tidewater board chairman; Dr. V. C. Baird, Humble Oil; and Dr. Clark R. Miller, Tidewater.



Below, A. L. Lyman, California Research president, and G. H. Denison, of the same company, flank C. E. Moser, Texaco, at a research committee dinner.



# Committees at Work



The Accident Prevention and Fire Protection committees head table included Walter Boon, Sun Oil; J. B. DeLaune, Cities Service Oil; E. G. Miller, Esso Standard; and F. G. Wilson, API.



Above, following proceedings of the Advisory Committee on Fundamental Research on Occurrence and Recovery of Petroleum are J. E. Finley, Continental Oil; P. S. Williams, Jersey Production Research; J. W. Young, Imperial Oil; and H. D. Wilde, Humble Oil.

Below, Sunday's Committee on Agriculture meeting attracted Ed P. Williams, Jr., Magnolia Petroleum; J. D. Peebles, API; and (in rear) W. W. Vandever and J. S. Bridwell, of their own companies.



E. C. Hughes, Standard of Ohio (head of table), presided at the Research Project 45 Advisory committee meeting.

Below, Asphalt committee members (standing) R. V. Rodman, Anderson-Prichard Oil President; M. E. Spaght, Shell Oil executive vice president; T. S. Petersen, Standard of California president; R. S. Blazer, Ashland Oil board chairman; S. H. Elliott, Standard of Ohio vice president; H. J. Kennedy, Continental Oil senior vice president; and (seated) T. M. Martin, Lion Oil president; B. S. Watson, Cities Service president; J. E. Dyer, Sinclair Oil vice chairman; G. E. Nielson, Husky Oil president and committee chairman; and B. L. Ray, Esso Standard Oil vice president.



## Committees at Work



Left, the Safety committee of the board of directors held a luncheon Tuesday noon. Among those in attendance were E. O. Mattocks, of the API; S. A. Montgomery, Standard of Indiana vice president; and committee chairman R. G. Follis, Standard of California board chairman.



From the head of the table, Charles W. Montgomery, of Gulf Research, presided at Sunday's meeting of the Research Project 6 Advisory committee.



A general view of the Research Project 42 Advisory committee in session Monday morning.

Below, Safety and Fire Protection in Manufacturing Operations interested W. C. Bluhm, Shell Oil; L. F. Dougan, Sinclair Oil & Gas; and Carl Adams, Continental Oil.



Below, Philip D. Caesar, Socony Mobil; and chairmen George R. Lake, Union Oil, and Carl E. Johnson, Standard of Indiana, at the Research Projects 48 and 52 Advisory committees meeting.



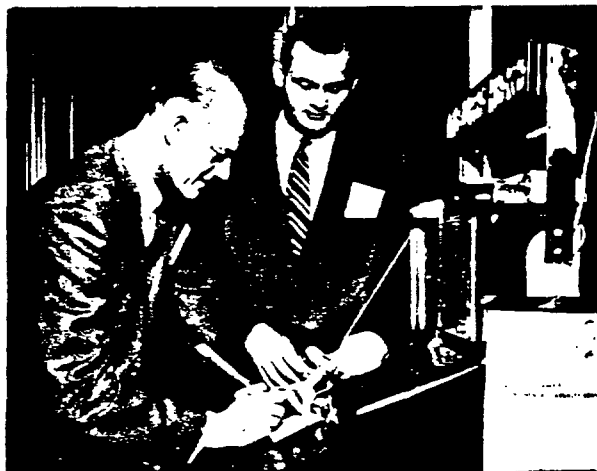


# Going Home

**S**LIGHTLY SHORTER in comparison with those of other years, the 1958 API conclave was nevertheless richly rewarding to oilmen in attendance. In many an informal hotel lobby huddle and in parting conversations, phrases like "see you again next year" were overheard often.

Thanks to air transportation, superhighways and diesel-powered streamliners, coupled with weather ideal for driving, the homeward trek became a simpler, quicker and more comfortable experience than ever. Representatives of some companies left in groups for common destinations. Many were back with their families for dinner on Wednesday.

Right, thinking of his youngster at home in Wichita, Kans., K. E. Anderson, of Socony Mobil, buys a present.



After checking their return flight space, W. Lee Spencer, Union Oil of California, and Donald C. O'Hara, National Petroleum Association, stopped to buy trip insurance.



George C. Benz, of Phillips Petroleum, and L. T. Vice, Standard Oil of California, paying their hotel bills at the cashier's window.



Left, among those arranging to go home by air on Wednesday were Sinclair's Paul W. Zumbrook and J. H. McCabe, Jr., president of E. W. Saybolt & Co., S.A.

## Going Home

Oilmen like W. H. Gauley, Empire Petroleum; Guy B. Hunter, Quaker State Oil president; and F. A. Schaefer, Refiners Petroleum president, wound up taking part in this year's meeting by hoping to attend again in 1959.



As final sessions ended, best wishes and good-byes were exchanged between many hotel lobby groups, among them Warren Erickson, of Calumet Refining; J. N. Waddell, the Henry H. Cross Co.; and Calumet's R. B. Johnson.



Above, delegates like D. R. Luke, of Skelly Oil, and George P. Rosser, Ethyl, kept hotel cashiers busy as accounts were paid when the meeting adjourned on Wednesday noon. . . . Right, after packing grips and checking out of the Hilton, this Bay Petroleum trio left by cab: H. J. Horsch; Leo L. Leabo, vice president; and W. B. Uhlhorn.





CHARLES F. KETTERING 1876-1958

*Scientist - Inventor - Philanthropist*

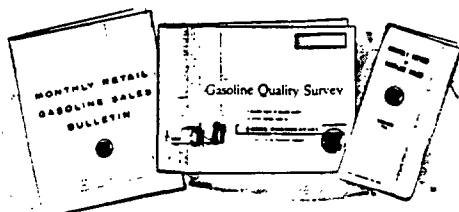
*First president and senior director of Ethyl Corporation*

*Recipient of API Gold Medal for Distinguished Achievement 1948*

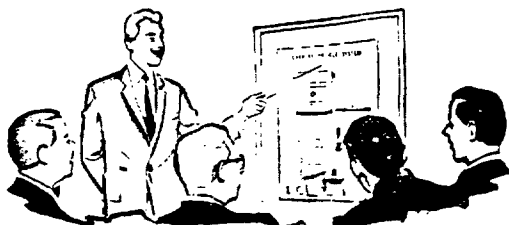
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# How Ethyl serves the Oil Industry

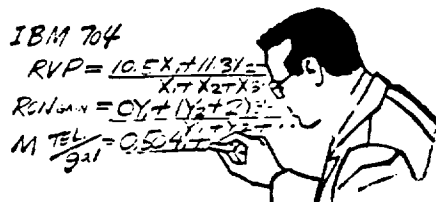
Since its discovery 37 years ago of tetraethyllead as the first practical gasoline antiknock, Ethyl has expanded its service program continually to keep pace with Oil Industry needs. Today Ethyl services are available at every stage in the use of antiknock compounds—typifying Ethyl's belief that service is just as important as product.



MARKET DATA



AUTOMOTIVE SERVICE



REFINERY TECHNOLOGY



TRAINING HELP



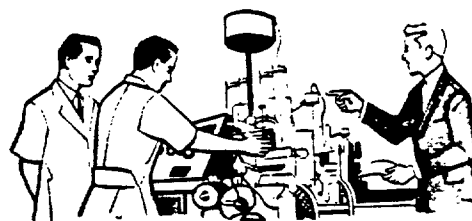
CAPACITY AND FAST DELIVERY



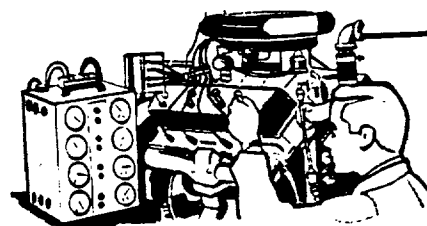
MARKET-EXPANSION PROGRAM



SAFETY SERVICES



GASOLINE TESTING



RESEARCH



PUBLIC RELATIONS