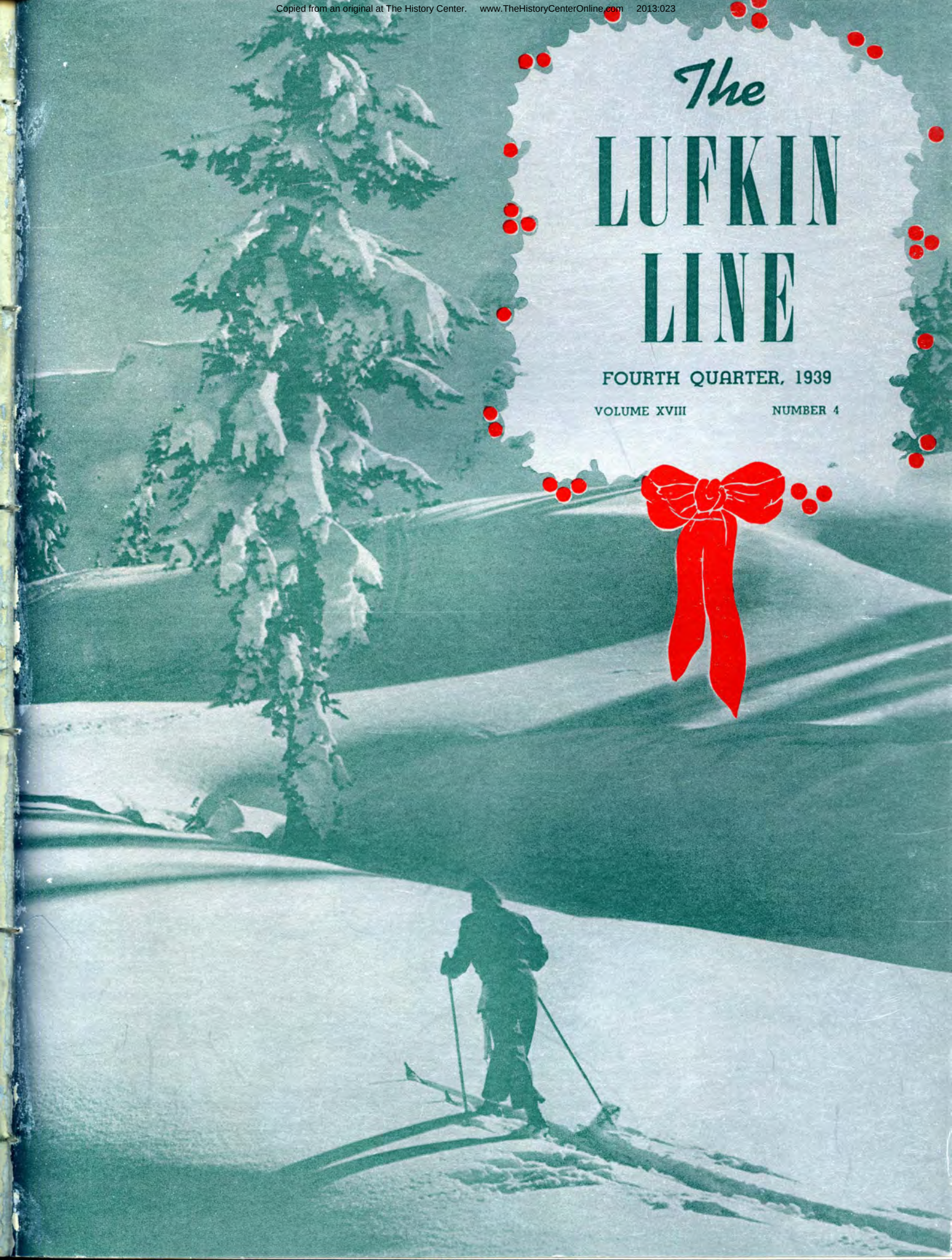
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The LUFKIN LINE

FOURTH QUARTER, 1939

VOLUME XVIII NUMBER 4

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Wake Up, America!

By CHANNING POLLOCK

"Extracts from a recent address before a New York teachers' convention"

★ ★ ★ ★

IN 1912, the finest and safest vessel that had ever been built—the unsinkable Titanic—struck an iceberg, and sank with nearly everyone on board. "The staggering fact," an editorial commented, "is not that the ship went down, but that she went down after 15 hours of radio warnings, her engines at full speed, her band playing, her passengers dancing, and, apparently, nobody caring that there was ice ahead."

To many of us that is the staggering fact about contemporary America—warnings everywhere, engines at full speed, bands playing, and nobody caring.

Even the war has not brought us to serious and informed consideration of dangers that may end our democracy. We think Hitler should be beaten, and we are perfectly willing to let George—King George—do it. Our views on neutrality and involvement seem to boil down to the fact that we didn't get our money back after the last war, and didn't raise our boy to be a soldier.

Our annoyance at what has happened in Austria, Czecho-Slovakia, and Poland is only slightly greater than it would have been if the cook had left without notice. America has been playing golf and bridge; struggling for more money or less work, or both; wearing paper caps and blowing tin horns on cruises, reading about the new hats, and the former Mrs. Simpson, and how the motion picture stars got that way, while whole nations revert to barbarism, liberty disappears from the face of the earth, and civilization crumbles about our ears.

Every people satisfied with bread and circuses has fallen into the hands of a Caligula—a Mussolini, a Hitler, or a Stalin.

There was a time when a tax on tea aroused us. Today, few of us even notice that we are taxed on everything we eat, drink, and wear; on light, heat, radios, refrigerators, automobiles, gasoline, and toilet articles, besides paying sales taxes, emergency taxes, income taxes, inheritance taxes, and state, county and municipal taxes.

Inflation would ruin all of us; yet, for five years, we have talked of inflation as though it were a bit of toast someone had ordered, and that we were sure to find on tomorrow's tray. The tyranny and paralysis of uncurbed and irresponsible labor unionism in alliance with politices; crime, graft and corruption leave us cold. Faced with Fascism or Communism, or a neat blend of both, we read that "party thinker-uppers" are doing the business of their lives, the most successful of this year having been a hotel "barnyard party" with a cow that gave champagne instead of milk.

★

Few democracies have survived more than 200 years.

The process is always the same—a simple, vigorous people fighting for existence, acquiring luxury, becoming enervated and decadent, learning to live without labor, bartering its liberties for governmental largess, and finally passing from the grip of domestic tyrants into that of foreign tyrants.

As tribute brought ease to Rome, and the contributions of the Ionic league luxury to Athens, so the end of the war brought lush years to us here in America. In time, we came to assume that the world owed us that kind of a living. If we couldn't pay $2 a pair for silk stockings, something was wrong with the social system. So long as we could, nothing was wrong with anything. Public and private morality went into a state of total eclipse not only with our bankers and big-business men, but with janitors, tradesmen, and politicians. The bankers have reformed somewhat; the politicians are about as usual.

Our American supremacy in crime is due largely to the fact that we cannot abhor the criminal who sins to satisfy desires so nearly our own . . . We have adopted the old Roman custom of importing slaves to do our manual labor. This concentration upon what are regarded as "soft jobs" has given us an amazing number of middlemen, who, in a measure, explain high prices. It is not only the unemployed we are supporting in idleness; it is the millions in kid-gloved and supererogatory occupants.

When the world no longer could support us in the style to which we were accustomed, we didn't tighten our belts and roll up our sleeves; we simply limbered our thumbs, and looked for the first motorcar that was going our way.

A population that, for 150 years, had execrated Benedict Arnold, became willing to sell its birthright for a bonus, an easy job, or a dole.

★

These tendencies must be checked unless we are to fall into a common disaster. Democracy is in its last ditch everywhere in the world. There is a prospect of it facing a union of all the totalitarian states. There is no secret in the success of dictatorship. It derives from the very qualities that were ours during our first 132 years—that is, from discipline, from union of purpose and effort, from a certain rugger asceticism, and from a common dedication to the common good.

Eternal vigilance is the price of liberty, and eternal vigilance cannot be the quality of a people more interested in golf than in government. We need to get away from easy thinking, easy living, easy money, unreasoning prejudice, and meaningless shibboleths. We should read carefully every day at least one newspaper on each side of vital questions and keep informed.

When you make up your mind, do it so far as possible without selfish bias. The fact that you have a son of

■ CONTINUED ON PAGE 18

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The Lufkin Line

Published to promote Friendship and Good Will with its customers and friends and to advance the interest of its products by the Lufkin Foundry & Machine Company, Lufkin, Texas.
AL E. CUDLIPP, Editor

Volume XVIII | 4TH QUARTER, 1939 | Number 4

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DID YOU KNOW

That, where at the turn of the century it cost a driver about 30 cents a mile to operate his automobile, today, as a result of industrial research, the average cost is less than three cents a mile?

▼

That a job in industry today is backed by an investment—$6,500—on the average 242 percent greater than 40 years ago?

▼

That, despite gloomy predictions that the glass bottling machine would destroy jobs, it created thousands of new ones? Today more men deliver bottled milk than the total number of glass blowers before this machine was used.

▼

That as a matter of fact, it's little business that's BIG in this country? 80 percent of the economic activity of the U. S. A. is carried on by individuals and personal partnerships.

▼

That more than 16,000 theaters in the United States now show sound films? The country with the next largest number of sound film theaters has only 5,271, and many of these are wholly or in large part dependent upon American films.

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DISCOVERING AMERICA ANEW . .

By Harriet Geithmann



Above—One of Washington's white-enameled volcanoes, Rainier, which saw us off and welcomed us home.



Left—The author, Harriet Geithmann, Seattle, Washington, on the edge of the famous Trail Ridge Road, elevation 12,183 feet.

FROM WASHINGTON STATE to Washington city and back again by highway, circling Robin Hood's barn en route, that's discovering America anew. Not only is such a tour a rollicking vacation but it is a liberal education to boot.

Choosing harvest time to roll eastward in the face of the rising sun and holiday time to roll westward in the face of the setting sun we actually reviewed 14 states going and 17 returning. Going east by Greyhound afforded us an intimate picture of each state. Traveling from 4 to 15 hours a day and stopping off every night to sleep and swim, this tour worked like a charm. While more than 90 per cent of the passengers preferred to travel day and night, we preferred to drop off at sundown and pull the latchstring of the hospitable innkeepers at Pendleton, Ore., Twin Falls, Ida., Rock Springs, Wyo., Denver and Estes Park, Colo., Oakley, Kans., Boonville and St. Louis, Mo., Cincinnati, Ohio and Table Rock, Md., en route to Washington, D. C. Thus it took us 11 days to cross this vast country.

Leaving the "Evergreen State" with its forests and white-enameled volcanoes, we followed Oregon's famous Columbia River highway chiseled from rocky cliffs, past the Bonneville Dam and across the sagebrush ranges of Idaho. Colorful characters met our stage, cowboys with ten gallon

ONE OF THE MOST ENCHANTING STRETCHES in the entire tour was that between Eureka, California, and the Oregon line where the giant Sequoias flank the Highway.

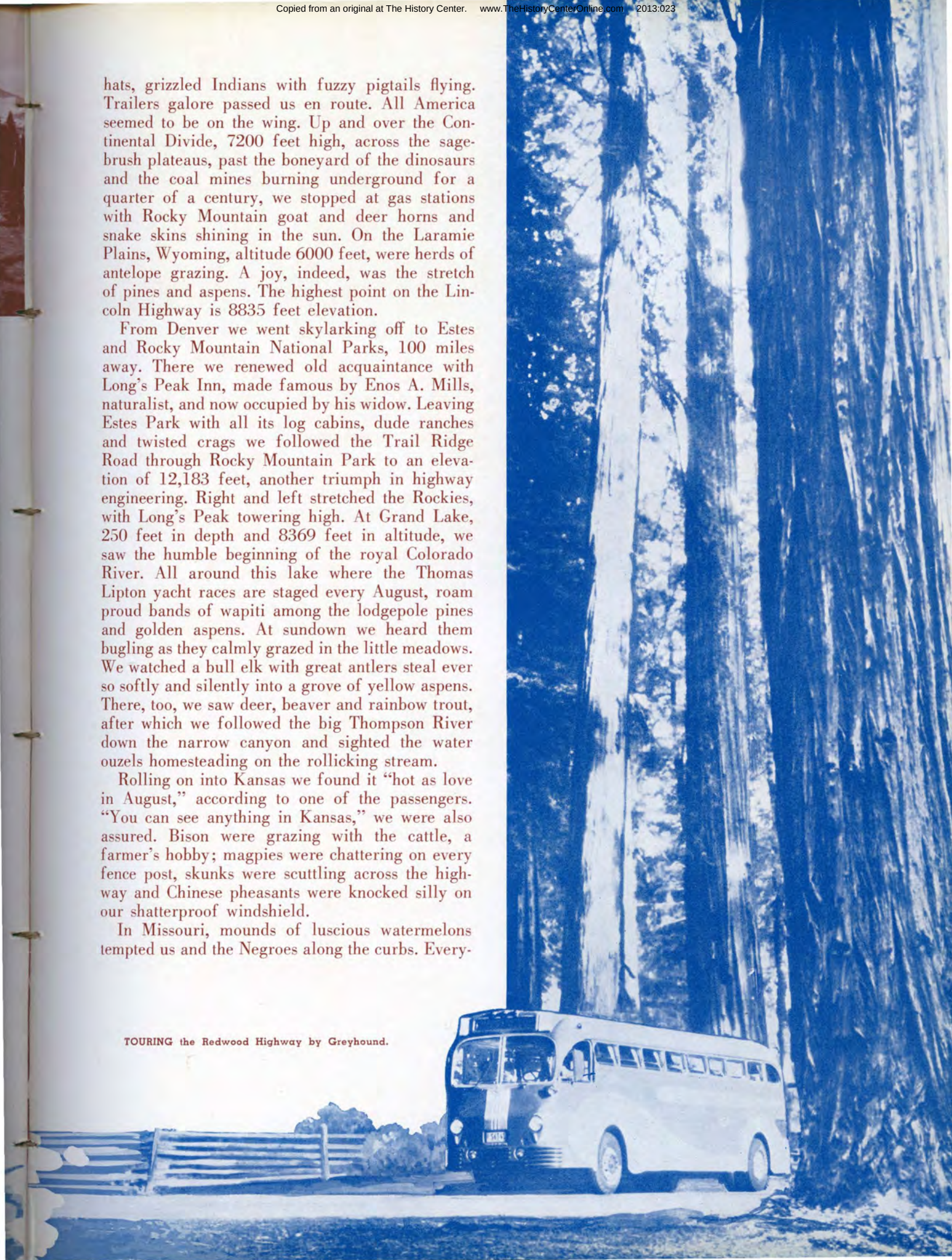
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hats, grizzled Indians with fuzzy pigtails flying. Trailers galore passed us en route. All America seemed to be on the wing. Up and over the Continental Divide, 7200 feet high, across the sagebrush plateaus, past the boneyard of the dinosaurs and the coal mines burning underground for a quarter of a century, we stopped at gas stations with Rocky Mountain goat and deer horns and snake skins shining in the sun. On the Laramie Plains, Wyoming, altitude 6000 feet, were herds of antelope grazing. A joy, indeed, was the stretch of pines and aspens. The highest point on the Lincoln Highway is 8835 feet elevation.

From Denver we went skylarking off to Estes and Rocky Mountain National Parks, 100 miles away. There we renewed old acquaintance with Long's Peak Inn, made famous by Enos A. Mills, naturalist, and now occupied by his widow. Leaving Estes Park with all its log cabins, dude ranches and twisted crags we followed the Trail Ridge Road through Rocky Mountain Park to an elevation of 12,183 feet, another triumph in highway engineering. Right and left stretched the Rockies, with Long's Peak towering high. At Grand Lake, 250 feet in depth and 8369 feet in altitude, we saw the humble beginning of the royal Colorado River. All around this lake where the Thomas Lipton yacht races are staged every August, roam proud bands of wapiti among the lodgepole pines and golden aspens. At sundown we heard them bugling as they calmly grazed in the little meadows. We watched a bull elk with great antlers steal ever so softly and silently into a grove of yellow aspens. There, too, we saw deer, beaver and rainbow trout, after which we followed the big Thompson River down the narrow canyon and sighted the water ouzels homesteading on the rollicking stream.

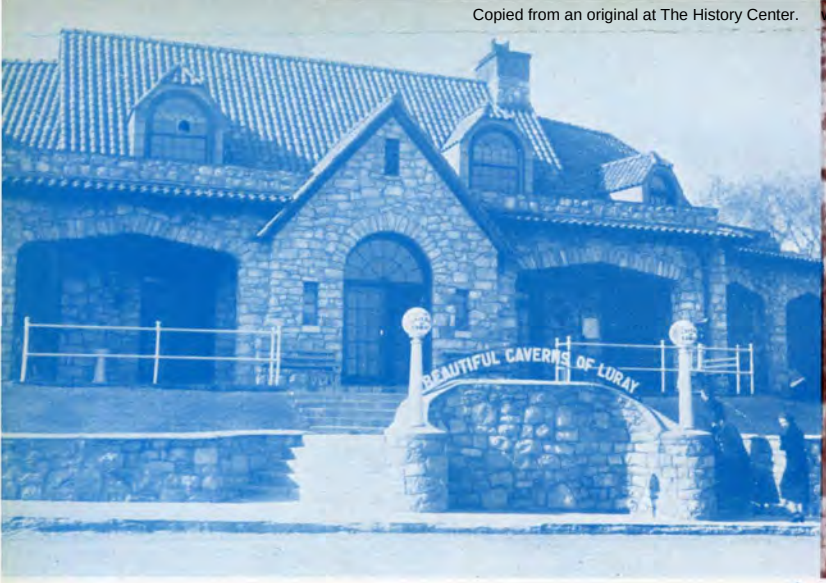
Rolling on into Kansas we found it "hot as love in August," according to one of the passengers. "You can see anything in Kansas," we were also assured. Bison were grazing with the cattle, a farmer's hobby; magpies were chattering on every fence post, skunks were scuttling across the highway and Chinese pheasants were knocked silly on our shatterproof windshield.

In Missouri, mounds of luscious watermelons tempted us and the Negroes along the curbs. Every-



TOURING the Redwood Highway by Greyhound.

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where were rosy apples, tobacco drying, sugar beets being harvested. Corn in the shock and pumpkin on the vine. In Ohio we heard of another coal mine which has been burning steadily underground for half a century, destroying $50,000,000 worth of coal in the neighborhood of New Straitsville.

From Table Rock Inn in the Alleghenies, the highest point on the U. S. Route No. 50, 3095 feet in altitude, we slid down into the Shenandoah Valley National Park of Virginia, aflame with October's brilliant colors. Here, too, we explored the labyrinthine Caverns of Luray, miles and miles of glistening stalactites and stalagmites which lure the traveler and his shekels. Up and over the Blue Ridge Mountains of Virginia and we were in Washington, D. C.

After leisurely paying our western respects to the Capital's three eternal highlights, the Library of Congress where one never asks for a book in vain, the Washington Monument, and the Lincoln Memorial as well as attending the activities of Congress, the Supreme Court and interviewing 1001 attractions such as the gaudy, raucous parrots in the patio palms of the Pan-American Building and the pugnacious pickerels with their overslung underjaws swimming about in the great aquariums of the Commerce Building, we rolled Pacificward one crisp morning in December.

Right—One of Washington's three eternal highlights, the Lincoln Memorial.

Below—New Supreme Court Building, Washington, D. C.





Past picturesque toll houses of 1790 when roads were paid for by travelers as some of our bridges are today we rolled westward with old St. Nicholas. In every hamlet and city across the land Christmas bells were jingling. By private car at the rate of 215 to 649 miles a day to San Francisco and from thence by Greyhound on up the coast to Seattle we pulled latchstrings hanging out at Washington, Penn., Casey, Ill., where it was four degrees above, St. Louis, Mo., Siloam Springs, Ark., Amarillo, Texas, Winslow, Ariz., Kanab, Utah, Bakersfield, Boulder Creek, Oakland and Eureka, California and Reedsport, Oregon.

At St. Louis we studied Colonel Lindbergh's amazing display of trophies at the Jefferson Memorial Museum, a wealth of badges, airplanes and a little experienced canteen. In the Ozarks were little cabins built of hand-hewn logs with a door and a window or two. Likewise interesting were the early homes of the Mormons in Utah. Barns, too, across the nation told a graphic story. In Oklahoma, crows perched on fenceposts, windmills on house-tops and oil wells in front yards. "You'll find the snow knee-high to a tall Indian where you're going," laughed a merchant in Amarillo. Suffice it to say, we rolled through Alburquerque without any hurdles. It was all we could do, not to load up with baskets and chairs of hickory and oak, Navajo blankets and Indian pottery which were on sale along the roadside.

After calling on ancient cliff dwellings along

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Top left—IMPOSING STONE ENTRANCE of labyrinthine Caverns of Luray, in Virginia.

Top center—ANCIENT CORRIDORS of the cliff dwellers at Flagstaff, Arizona.

Above—THE HOPI HOUSE on the rim of the Grand Canyon of the Colorado.

Right—GOLDEN GATE BRIDGE, 7 miles long, 90 feet wide and a single span 4200 feet long.

the limestone walls of Walnut Canyon near Flagstaff, Arizona, we circled the southern, eastern and northern rim of the Grand Canyon at an altitude of 6866 feet and looked down into the "divine abyss," all sunlight and shadows. Everywhere, were Navajos, Hopis and the Apaches with their pueblos and hogans. "Laughing Boy" himself, wrapped in gay blankets, passed us on his shaggy pony. On the north rim of the world's greatest canyon we toured Kaibab National Forest, a wealth of yellow pine carpeted with snow and peopled with bounding mule deer. Crossing Kaibab Pass, 7900 feet in altitude, we slid down to Kanab, a little sheep and cattle town of Utah where roosters and coyotes served as alarm clocks at daybreak.

After breakfast we toured Zion National Park, reveling in its perpendicular cliffs of brilliant hue. Every rock challenged us to return at the first opportunity to see more of this amazing corner of the earth. Promptly upon the heels of Zion came the Mojave Desert of California with its matchless sunset over the distant Sierras and its grotesque Joshua tree, all akimbo, marching beside the highway. Leaving Bakersfield we made a bee-line for the Sequoia National Forest and the General Sherman Tree. This tree alone, about 40 feet in diameter and 100 feet in circumference, the oldest living thing on the planet earth, was worth our entire trans-continental trip. We counted 25 mule deer on the zigzag highway that led us to the 6000-foot plateau where the plumes of the great sequoia mingle with the stars.

Continuing on up the West Coast through peppers, palms and pomegranates, we followed the new skyline boulevard from Santa Cruz to San Francisco, feasting our hungry eyes on all the manifold loveliness visible on every side. Apparently one has to travel afar to green pastures in order to thoroughly appreciate home pastures and the true pot of gold at the end of the rainbow. While sojourning in the Bay Cities we traveled over both Golden Gate and Bay Bridges, continually marveling at the engineering skill of man that produced them.

From Oakland to Seattle we rode in Greyhound's stream-lined super-coaches along the famous Redwood Highway and the Oregon Coast. So matchless is this stretch of a 1000 miles, that every American should see it while he is sojourning on this whirligig of a planet. Flanking the highway of curves, stand the giant sequoias 300 feet above the ground which is 600 feet above the Pacific. A California teacher owns one of these monarchs in which a novel house has been built at the base. Nothing daunts these giants, neither fire nor flood. Leaving the redwoods and the ragged eucalyptus behind us we skirted the Oregon Coast where white foam dashes against rugged black rocks and hundreds of sea lions rear their sleek heads above the

■ CONTINUED ON PAGE 18

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SNAPSHOTS

By the LUFKIN Cameraman



Magnolia's A. F. Haslam



Magnolia's L. L. Looney



1940 class Mechanical Engineering, of University of Texas, in charge of professors Kent and Benson. At extreme right is C. E. Beecher, of Cities Service Oil Company, Bartlesville, Oklahoma



Left to right. Brogan's superintendent, Bud Taylor, Weaver-Perry's E. L. Hand, and Lufkin's Ed Caraway



Texas Company's Bill Burshell, Conroe, Texas, and on right Lufkin's Art Bennett



ALL IN THE DAY'S WORK. Actress Kitty Kelly with make-up for scene in Paramount's "Geronimo" in which she is supposed to have been wounded by Indians. Ralph Morgan is standing by



Magnolia's Farm Boss, Lester Taylor



Arkansas Fuel Oil Company's Arden Waggoner



BING AND HIS PALS . . . Scene from Bing Crosby's Paramount film "The Star Maker"

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Magnolia's Dan Comfort, Cecil Mohr and J. M. Courtney, Rodessa field



Arkansas Fuel Oil Company's assistant superintendent, J. E. Loveall



Magnolia's superintendent, M. C. Bradley, and sons Martin and Joe with kingfish caught at Freeport



(Right) Phillips' V. P. Ethredge, superintendent, and (left) A. L. Kinchen, district engineer, Corpus district



(Left) Shell's E. R. Shorey, Wichita Falls, and Lufkin's Harold Blodgett, and Shell's G. F. Isley

J.C. FAULKNER SAYS



J. C. Faulkner says "I can po with pride to a real pumping un I have pumped this well with t original Lufkin unit installation the past 9 years and during t last 5 years have pumped 640 ba rels of fluid daily. The gears sho practically no wear to speak and are today as bright as hound's tooth . . . the only expen has been the replacement of be several years ago. This is typic of many such Lufkin installation



Mr. Faulkner is a pumper for one of the major oil companies on a Gulf Coast lease



Darby's Guy Patton, Hays, Kansas



TEACHER VISITS STAR. Gary Cooper welcomes to Hollywood Dr. John S. Nolen, president of Grinnell College, and Mrs. Nolen



Left to right, Shell's Carroll, Moscrip, and Lufkin's George Henson, all of Kansas



BEAUTY HER ASSET . . . Ellen Drew, sensational beauty contestant from Englewood, New Jersey

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The whole "works" at Lufkin wish you the

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the jolliest Christmas ever

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Efficiency and Load Tests



Test being made with bearing under beam

On a conventional type pumping unit with respect to tail bearing positions.

By BAYO HOPPER*

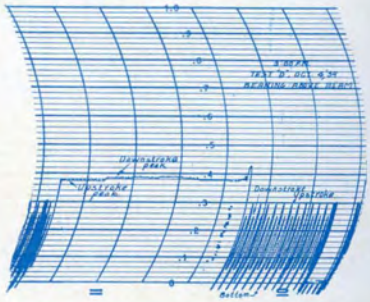


FIG. 4

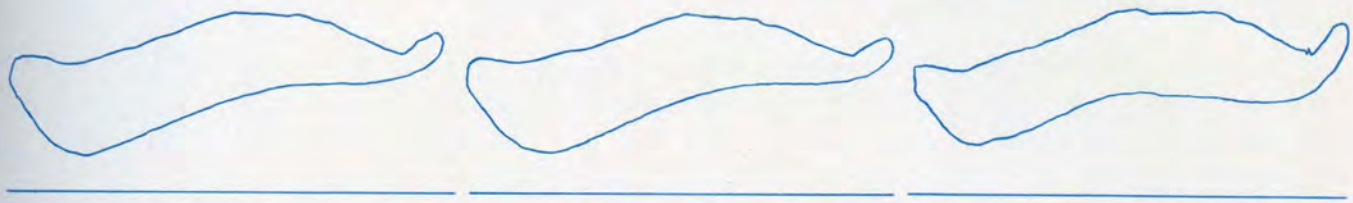
THE OBJECT of these tests was to determine the relative merits of pumping unit designs having (1) the tail bearing below the walking beam on a centerline with the center-bearing, (2) having the tail bearing located above the beam and (3) with the tail bearing above the beam and the gear box set back from its usual position.

*Mechanical Engineer, Lufkin Foundry & Machine Co.

RESULTS

Test No.	UNIT ASSEMBLY	S.P.M.	Polished Rod Stroke	Duration of Test, Hrs.	Power Consumed Per 24 Hrs., K.W.H.	Fluid Produced Per 24 Hrs., Bbls.	K.W. Hours Per Barrel Fluid Produced	Average Horse-power Input	Average Polished Rod H.P.	Overall Efficiency of Unit and Motor, %	PEAK K.W. INPUT			Peak Polished Rod Load, Lbs.	Minimum Polished Rod Loads, Lbs.	Counter-balance, Lbs.
											Up-stroke	Down-stroke	Average			
A	Tail Bearing	22.15	42.75	3.25	191.6	180.9	1.059	10.70	5.596	52.3	19.7	21.35	20.5	63.20	1720	4660
D	Above Beam	22.15	43.0	2.5	192.7	182.4	1.056	10.76	5.658	52.6	19.1	19.5	19.3	6110	1080	4170
Average					192.15	181.65	1.0575	10.73	5.627	52.45	19.4	20.425	19.9	6215	1400	4415
B	Set-back	22.15	41.4375	5.75	181.9	168.0	1.083	10.16	5.21	51.3	19.43	19.83	19.63	6130	1340	4360
E	Set-back	22.15	41.6875	3.0	181.6	168.0	1.081	10.14	5.35	52.8	17.39	16.92	17.155	6040	1300	4300
Average					181.75	168.0	1.082	10.15	5.28	52.05	18.41	18.375	18.39	6085	1320	4330
C	Center-line	22.15	42.8125	3.0	196.6	206.0	0.954	10.98	5.87	53.5	19.85	18.25	19.05	6650	1750	4560
F	Center-line	22.15	42.8125	4.5	190.8	203.3	0.939	10.66	5.758	54.0	18.53	17.03	17.78	6250	1500	4610
G	Center-line	22.15	42.8125	4.0	191.1	200.8	0.952	10.67	5.869	55.0	18.57	18.39	18.48	6360	1510	4700
Average					192.8	203.4	0.948	10.77	5.832	54.17	18.98	17.89	18.44	6420	1587	4623

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Test "A"—Bearing above beam. Test "B"—Unit set-back. Test "F"—Centerline assembly.

FIG. 5—TYPICAL POLISHED ROD CARDS

Description of Equipment

These tests were conducted on a recently abandoned well producing only salt water, located on the extreme west edge of the East Texas field. The well was equipped with 2½" tubing, 2¼" plunger, ¾" rods, with the pump at a depth of 3,000 feet. The well was capable of maintaining a constant fluid level after a brief period of pumping.

The production was gaged in a standard test tank where 1" of fluid depth equals one barrel. There was also installed in the 2" flow line at the well, a regular water meter having a 1" inlet and outlet.

The pumping unit used was a Lufkin Twin Crank 550-7B herringbone geared 11.1 horsepower (54,945 lb. ins. A.P.I. peak torque) unit mounted on a structural base, with adjustable counterbalance cranks of 42" maximum stroke, wire line hanger, 5'-0" and 5'-0" working center walking beam arranged for the tail bearing to be mounted above or below the beam.

Unit was connected by "V" belt drive to a General Electric induction motor, Model 5 KG 405 AX1, Frame 405, Type KG, volts 220/440, amps 59/29.5, 3 phase, 60 cycles, full load speed 865 RPM, 20 horsepower, continuous 50° C. rise, No. 5 310 892.

Power consumed was measured with a General Electric poly phase watthour meter, Type D-14, 60 cycles, 25 amps, 460/480 volts, No. 18 028 123.

Input power peaks were measured with an Esterline Angus wattmeter, Model AW, serial No. 27799, 5 amps. Current transformers of 10 to 1 ratio were used with the wattmeter.

Polished rod loads were measured with a Westinghouse polished rod dynagraph, style No. 1014851-A, serial No. 18. A 1⅛" bronze polished rod was used in order to obtain as large a polished rod card as possible.

Testing Procedure

Before starting a record of the test data, the unit was operated each day for a period of thirty minutes to an hour after the counterbalance weights were adjusted as accurately as possible. Upon starting the test the following readings were taken: Watthour meter and water meter readings were taken simultaneously with the tank gage, the polished rod card was taken immediately afterwards and simultaneously with the counting of the watthour meter disc revolutions. Then a wattmeter chart was obtained.

It has been found that the swing of a wattmeter needle, as it oscillates back and forth to indicate two maximum and two minimum peaks during one pumping stroke, does not reach or indicate the actual peaks on the motor. There is a slight lag in the action of the needle which prevents the natural swing of the needle from going high enough to give a true picture of the power peaks. Assume the needle is going upward to indicate the peak

Test with bearing above beam



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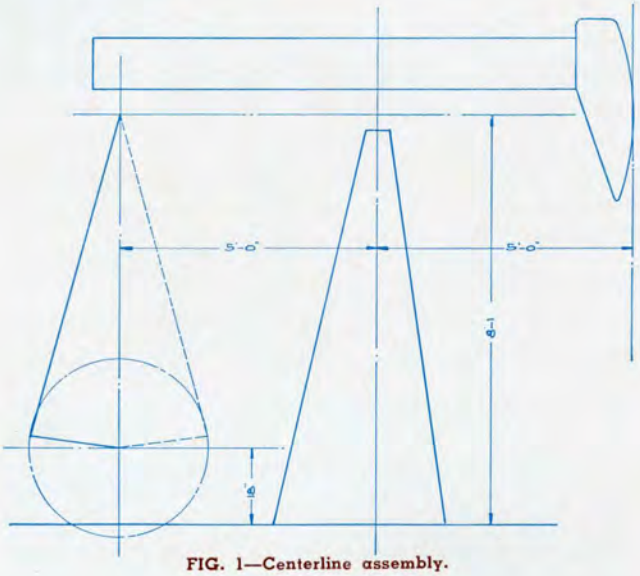


FIG. 1—Centerline assembly.

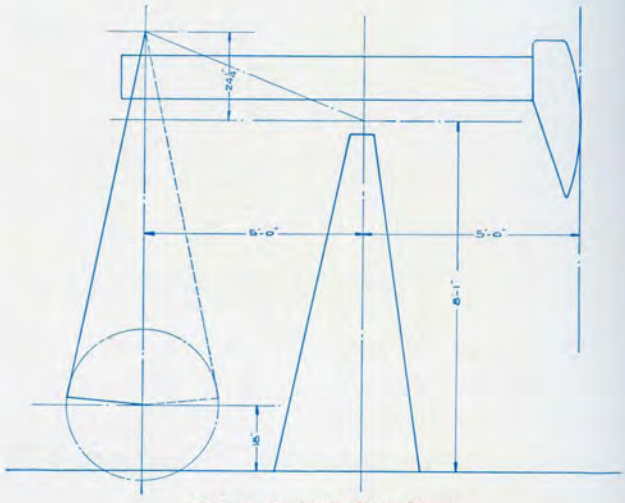


FIG. 2—Bearing above beam.

load on the upstroke of the rods: The impulse for the needle to go upward strikes the needle and is gone almost instantaneously; so that due to the slight lag in the needle, the impulse for the needle to go downward strikes the needle and sends it back before it has had time to reach its true peak. The same thing happens, in the opposite direction, to the minimum peaks.

In order to obtain the load peaks, the needle was held over to the right with a pencil far enough for the needle to give only a slight kick, and this point was taken as the peak.

Readings on all the instruments and polished rod cards were taken at thirty minute intervals, while the tank was gaged every hour and a half. Tests were continued for 4½ to 6 hours and in each case there was evidence of the well having pumped at a static condition for a period of 2.5 to 5.75 hours, as the horsepower input and motor peaks had reached a constant condition.

Only one test was run each day, and the unit assemblies were alternated in the following manner so that a possible change in well condition would not favor or penalize any unit set-up:

Test A. September 29, bearing above beam.
Test B. September 30, bearing above and unit set-back.
Test C. October 3, centerline assembly.
Test D. October 4, bearing above beam.
Test E. October 5, bearing above and unit set-back.
Test F. October 6, centerline assembly.
Test G. October 7, centerline assembly.

The unit was operated only in a counter-clockwise direction, in the 42″ crank stroke and at 22.15 strokes per minute.

Figures 1, 2 and 3 show line drawings of the three assemblies used.

Results and Conclusions

The results of this test indicate beyond doubt that the centerline type pitman tail bearing is the most desirable. Referring to the table of results and comparing the unit having the tail bearing above the beam (Fig. 2) with the centerline beam unit (Fig. 1), it is found that the centerline beam produced 12% more fluid at the same pumping speed and almost exactly the same polished rod stroke. This fluid was produced at about 1/3 of 1% more power per day; so that the cost in kilowatts per barrel was 11.6% more for the bearing above the beam.

The average horsepower input to the motor was approximately the same in both cases, but the centerline type beam produced a better shaped polished rod card having slightly more area which gave that assembly 1¾% greater overall efficiency. The power peaks for the centerline assembly were less than those for the bearing above the beam by about 7.5%. The peak polished rod loads for the centerline type beam were higher by 3-1/3% because more fluid was lifted; however, the minimum loads were also higher by about 13%. Almost 4½% more counterbalance was re-

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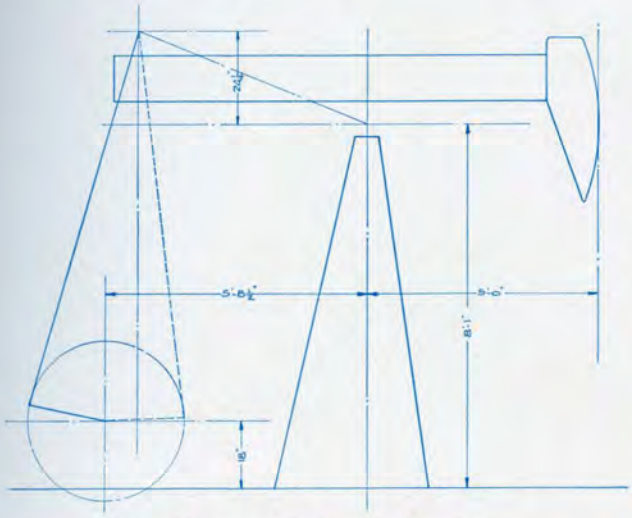


FIG. 3—Unit set-back, bearing above beam.

quired by the centerline set-up because of the additional fluid pumped.

Comparing the centerline type pitman tail bearing assembly (Fig. 1) with the tail bearing above the beam and the unit set-back 8½" (Fig. 3), it was found that the centerline bearing produced 21% more fluid at about 3% longer polished rod stroke and the same speed. This fluid was produced at 6% more power per day; so that the fluid was produced with the bearing above the beam at more than 14% greater cost in kilowatts per barrel.

The average horsepower input to the motor and the polished rod horsepower were both slightly greater for the centerline beam, but the net result was that the centerline beam was better than 2% more efficient. The power peaks to the motor were approximately the same, the actual difference being less than .03 of 1%. The centerline beam showed an increase of 5½% in peak polished rod loads, but an increase of 20% in minimum polished rod loads. The centerline beam required 6¾% more counterbalance due to the greater amount of fluid produced.

It is seen from these results that every point investigated proved definitely to be in favor of the centerline beam except polished rod peaks and counterbalance. These were higher because of the additional fluid pumped, but they did not increase in proportion to the amount of fluid produced.

Comparing the assembly with the tail bearing above the beam (Fig. 2) to the assembly with the tail bearing above the beam and gear box set-back (Fig. 3), it is found that in the set-back position the unit consumed 5½% less power and produced 7½% less fluid which resulted in 2¼% more kilowatt hours per barrel. The overall efficiency is practically the same, but the set-back position showed 7½% lower peaks to the motor.

The extremely low overall efficiency was due to the fact that the power factor was unusually low. Although the power factor was not definitely determined, it was estimated through a rough check by a power company engineer to be not much better than 50%.

In Figure 4 is shown a sample of the wattmeter chart taken on Test "D", with the bearing above the beam. The upstroke peak appears to be considerably higher than the downstroke peak which would indicate an under-counterbalanced condition. However, when the needle is pushed with a pencil up to the farthest position at which it will move, it is found that the downstroke peak is actually somewhat higher than the upstroke peak.

The unit was run clockwise for a short time in the set-back position with a resulting increase of about 20% in power peaks to the motor.

The reason for the difference in polished rod strokes on tests A and D and also on tests B and E is because the bracket for holding the tail bearing in position above the beam was only clamped in place, and in changing tail bearing positions it was necessary to drive a tight fitting pin in and out of place. In making this change, the clamped bracket was shifted forward slightly, resulting in a little longer polished rod stroke on the second round of tests.

In running the tests, every effort was made to read the instruments and record the data as accurately as possible. It has no doubt been noticed that tests A and D, which were on the same unit set-up and which were taken several days apart, show results that are almost identical. The various tests on the other two assemblies also show almost identical results. So that, at least for the pumping conditions investigated, the results obtained and the conclusions made can be depended upon as being close to 100% accurate.

ACKNOWLEDGMENTS

Grateful acknowledgment is hereby made to Sun Oil Company for its cooperation in making these tests. Appreciation is also expressed to the following for their suggestions and assistance: Mr. Charlie Webb, Sun Oil Company; Mr. Riley Aucoin, Humble Oil & Refining Company; Mr. Joe Ward, Mr. Webb, and Mr. Ellis, of Texas Power and Light Company.

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LUFKIN INSTALLATIONS

. . . here, there, everywhere



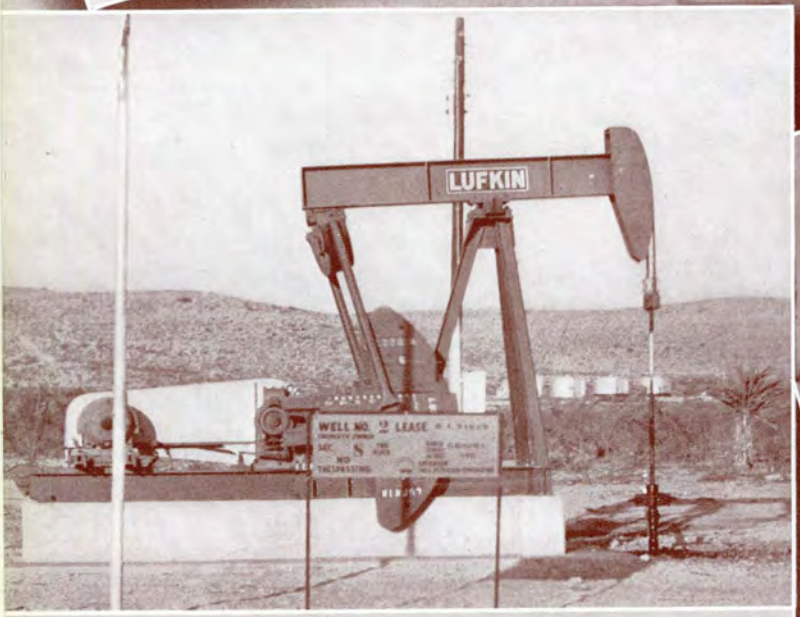
Continental Oil Company, East Texas field.
Lufkin Assembly TC-3-18A



Progressive Oil Company, Elbing Pool, Kansas. Lufkin TC-6-5



Tropical Oil Company, of Central District, Colombia



Shell Oil Company, McCamey



Lufkin TCU-2A-31CH, installation for Glen McCarthy,
West Beaumont field

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Texarkana Oil Company's East Texas Lufkin SC-31C with "A" frame post, back crank, counterbalance swing, with built-in knock-out



BEAUTIES . . . The young lady, Miss Mildred Duty, with Latex Construction Company. Phone number on special request



Texas Company's Manville field TC-1A-41A



Phillips Petroleum Company, Midway pool



Phillips' J. C. Sculley No. 18, Elbing field, Kansas



Typical Lufkin installation Dix field, Illinois

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In Our Town

ALL OVER the United States a pattern is repeated again and again which the traveller is not likely to find anywhere else in the world. The American is so used to this pattern that he never gives it a second thought. But it's a good thing to look into the matter once in a while; it's a good thing to see what holds the pattern together.

The pattern referred to is that of the average American community. Whatever the surface differences, in the width of Main Street or the number of stores in the central shopping district, there is some basic identity among most American towns. Perhaps it can be pinned down in the form of a question: "To what does this community owe its origin?"

Here is the picture again: a number of stores, serving the varied tastes of the town's population; some professional men, doctors, dentists, and lawyers, to iron out the individual's difficulties for him; a school system to educate the young; and most likely, a busy factory or two.

And when it all boils right down, it is the last-named—the busy factory or factories—on which the pattern of this community is almost invariably based. It is the weekly payroll that generates the purchasing power which makes Main Street prosperous. The money from that payroll is sent out through the stores and reaches the farmer many miles away, so that he in turn partly depends for his well-being on the factories in individual towns and cities throughout the nation.

No wonder that the Dean of a leading Midwestern university, in the course of listing the factors he considered most important in the development of a modern community, listed first of all the following:

"Factories, offices, mercantile establishments, in proper number to provide a regular and profitable employment."

In our town—in any town—the factor that creates the pattern of happy and successful living is not hard to find.

Wake Up, America!

■ CONTINUED FROM PAGE 2

military age is not sufficient reason for being an isolationist. The fact that the government is taking care of your wife's sister's husband is not sufficient reason for supporting the New Deal—nor the fact that you can't afford a new car sufficient reason for abusing it.

You will be surprised to find how you can "win friends and influence people" if you know what you are talking about. Make yourself heard and felt. Vote, and vote intelligently. Argue, reason, organize, fight, and win! Thus shall we prove Thomas Jefferson wrong when he wrote that our people "will forget themselves, but in the sole faculty of making money," and Abraham Lincoln prophetic when he spoke of high resolve "that this Nation, under God, shall have a new birth of freedom, and that government of the people, by the people, for the people, shall not perish from the earth."

Discovering America Anew

■ CONTINUED FROM PAGE 7

surf. Cranes in the lagoons, sand dunes gleaming, long lines of jade green breakers marching on the land and white-tailed deer bounding across the highway. Then north from Portland to Seattle where snowy sentinels, the Mountains Hood, Adams, St. Helens and Rainier welcomed us home.

All in all, as we review this 8500-mile round trip, 14 weeks long to the nation's capital and home again, we are impressed not only with America's vast wealth of natural resources typified by her National Parks, Forests, Monuments, Reservations and broad agricultural lands, but we are equally amazed at the astonishing network of highways that crisscross the country and the infinite ease with which an American today may turn Christopher Columbus and discover for himself America anew.

"They"

A BUNCH from the plant were over at Gus Stone's place Sunday. It was the last warm day of the year, so we were all out in the back yard enjoying the sunshine and listening to Gus's new portable radio. It can be carried all over the place, and doesn't have to be hooked up to anything in order to be used.

We sat around for awhile, admiring the tone and all, and finally somebody said, "What will they do next?"

Nobody answered for a minute, and then some other guy asked: "What do you mean—'they'?"

Then we set to work trying to figure that one out. Thinking it over, we realized that all of us were accustomed to referring in that way to many of the new products coming from industry. But we'd never stopped before and tried to analyze exactly what we meant by "they."

Finally Gus Stone spoke up.

"I've got it figured out," he said. "'They' means everyone concerned in turning out that radio. First of all there's the inventor—the guy with the idea. Then there are the men who put up the money to back the enterprise, and build the plant, and provide the jobs and payrolls. They're the stockholders. Then there are the guys like us, the workers, and foremen, and managers—the ones who contribute the skill that makes us open our mouths and say, 'What will they do next?'"

"Guess you're right, Gus," somebody said, after a moment's silence. "And by the way—what do you suppose they *will* do next?"

"Don't know," Gus answered, turning the music on the radio up a little louder. "But whatever it is, I've got an idea it will surprise us again!"

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Let's Laugh!

SLIGHTLY OFF CENTER

The man buying neckties tossed a few aside with contempt. After making his purchase, he noted that the clerk put the rejected ties into a separate compartment.

"What do you do with these?" he asked.

"Oh, we sell them to the women coming in here to buy ties for men."

★

A Scotchman visiting a London friend overstayed his welcome. As Christmas was approaching, the host thought a subtle hint might get the desired result.

"Sandy," he asked, "don't you think your wife and family will want you with them at Christmas?"

"Mon," replied the Aberdonian, "I believe you're richt. It's thochtf' o' you. I'll send for 'em richt now."

★

"PLEASE"

The word "please" is said to cost $10,000,000 a year and more through the telegraph offices alone. It has been estimated that this is what the people of the United States pay in telegraph tolls just to add that word. It is money well spent when one considers that the returns from the investment are respect, friendship, and good will in business.

"Life is not so short," says Emerson, "but there is always time for courtesy."

Courtesy—another word for the "you" attitude—also puts profits in the ledger.

"I do not know of a more certain key to success," wrote a big industrialist, "than courtesy. It will carry you further in this world and cost you less than any other single quality you could possess. If I could talk in twenty languages, I would preach courtesy in all of them!"

Striking the right tone is 99 per cent thinking of the customer—First!

★

He: "Here's how!"
She: "Say 'when.' I know how."
—*O'Bannon*

Anxious Man (to hotel clerk): "Where is the men's rest room?"

Clerk: "Why, just around the corner."

A. M.: "What do you mean? I don't want prosperity—I want relief."

★

"I'm going to tell the boss you were peeping through his keyhole and get you fired," fumed the bookkeeper. And the office boy snapped: "G'wan. I'm going to tell him what I saw while I was peeping and get a raise."

"Who's there?" inquired Saint Peter.

"It is I," was the answer.

"Go away. We don't want any more school teachers."

★

Our minister's favorite story is about the woman who, when she got on the street car with ten children, was asked by the friendly motorman if they were all her children or if it was a picnic. "Yes," she snapped, "they are all mine, and it's no picnic."

★

The Negro entering prison was sad.

"Ah cain't do all this sentence," he sighed.

"How long is it?" asked a deputy.

"Life," said the despondent Negro.

"Well," said the deputy kindly, "just do what you can of it."

Lift Up Your Hearts and Rejoice!

What a glorious catalogue of reasons an American Citizen must list this Christmas Day of 1939.

Our contrast to the conditions throughout so much of the rest of the world should bring a gratitude which overflows the banks of personal littlenesses; it should uplift and inspire all of us to higher levels of personal morality.

A Country still at internal and external peace.

A Country still striving for a richer and fuller life for its people.

A Country emerging into the pleasantness of prosperity.

A Country still flaunting the banner of Freedom of Speech, Freedom in religious belief and Freedom from racial oppression.

A Country where its people have the highest known standard of living and material comforts.

A Country where human life has the largest measure of protection and safety.

A Country whose Ideals owe their origin to a philosophy of Christ, and whose Ideals still are preserved.

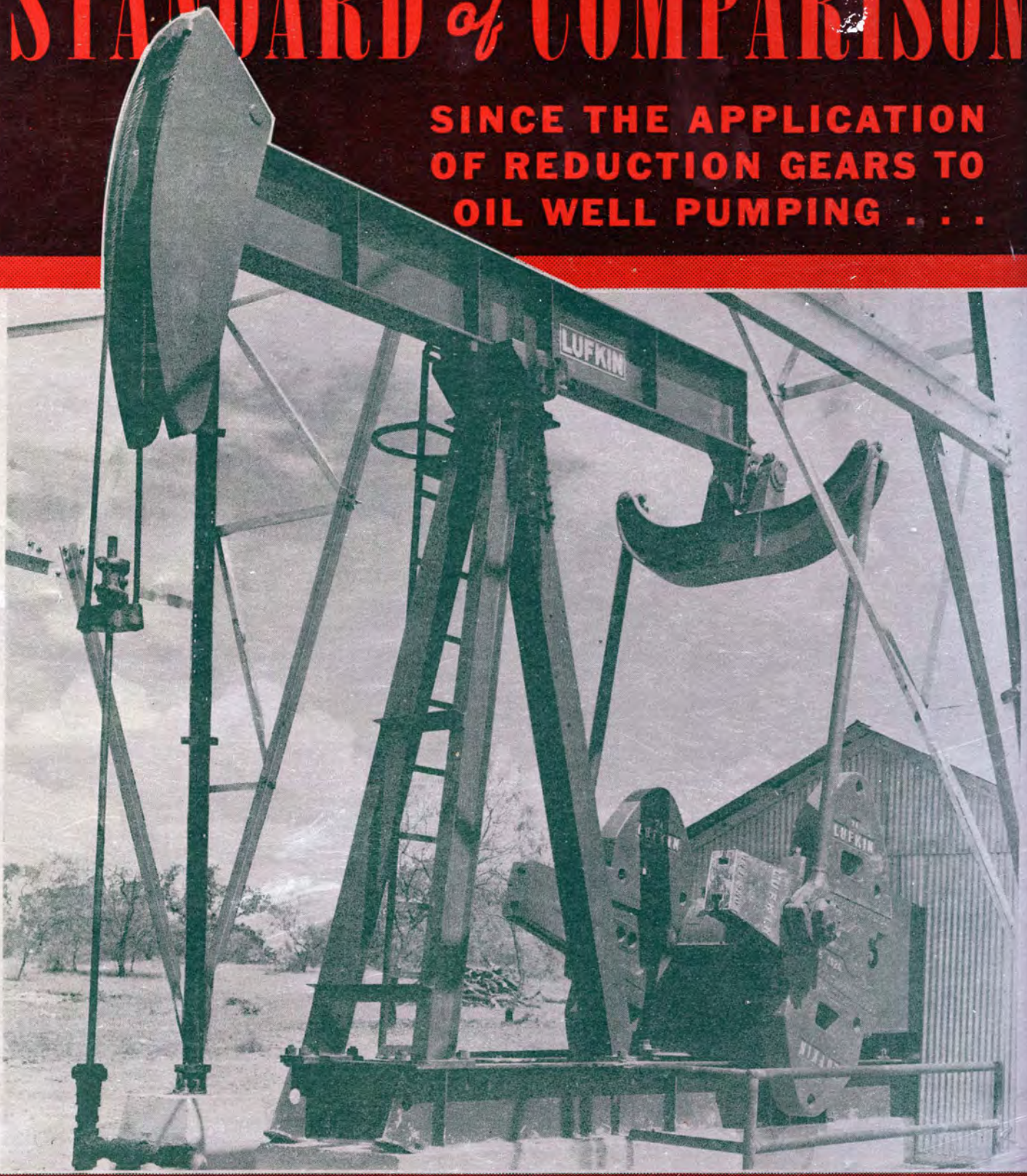
Material security, or unknown patterns in economic or even governmental planning, seem less disturbing or important when balanced against such actualities.

Rejoice, be merry and help others to be glad in face of such a background.

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STANDARD of COMPARISON

SINCE THE APPLICATION OF REDUCTION GEARS TO OIL WELL PUMPING . . .



LUFKIN PUMPING UNITS

LUFKIN UNITS are manufactured in Lufkin, Texas, by the Lufkin Foundry & Machine Company. Branches in principal oil centers