



Dogwood time in the East Texas Pineywoods

E. M. (Buck) Schiwetz

The **LUFKIN** Line
WINTER - 1971

The great thing in this world is not so much where we
stand as in what direction we are moving.
— Oliver Wendell Holmes





OIL FIELD PUMPING UNITS



GEARS FOR INDUSTRY AND SHIP PROPULSION



TRAILERS FOR EVERY HAULING NEED

The **LUFKIN** Line

WINTER, 1971

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Virginia R. Allen, Editor
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COVER: Dogwood Time in the East Texas Pineywoods by E. M. (Buck) Schiwetz. A limited number of framing reproductions are available by request to the Editor

OPPOSITE PAGE: Lemon Reservoir near Durango, Colorado
—Photo by Lester Tinker, Durango, Colorado

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All photos by Author

A VERITABLE winter fairyland, Baldwin, Michigan beckons snowmobilers

Snowmobiling in Michigan's

Winter Wonderland

By Don J. Ingle

FOR a small village of less than 900 people, in an area where the deer outnumber the residents by 5 to 1, the West Michigan village of Baldwin is making a mighty big boast these days. It is calling itself the "Snowmobile Capitol of Michigan." And in Michigan, which leads all states in the number of registered snowmobiles, that's some brag.

The only thing is . . . Baldwin can prove its claim.

This woodland village is located in the heart of the famed Pere Marquette River country, well-known for its hunting and fishing in 1,000 miles of trout waters. Baldwin makes its claim on the basis of having developed the largest concentration of free snowmobile trails in the mid-west.

It boasts a nine-trail cluster of over 250 free miles. These trails fan out from the village of Baldwin into some of the most remote and scenic areas of a state that is noted for its scenics.

When cold winds from Canada begin to hint that snow is on the way, Baldwinites don't prepare, as they once did, for a long winter's hibernation. Instead, they get ready to enjoy one of the midwest's most swinging seasons . . . snowmobile time!

Baldwin has geared itself to meet the needs of the go-snow crowds, numbering in the thousands, that come to sample this snowgoing bonanza of free trails. These trails were carved out of the heavy forests surrounding the village by an army of local citizens who believed in the future of snowmobiling. A



CEDAR CREEK Run offers trail riders wild and beautiful country



THICK forests protect the heavy snows, assuring a long four-month season for snowmobiling



SOMETIMES as many as 120 machines line up for a parade through downtown Baldwin

Winter Wonderland

MAPS depicting the 250 free miles of snowmobile trails are available from Baldwin's Chamber of Commerce



home-grown, grass roots undertaking, it has proved to be a big wintertime economy for the area, and the Baldwin folks really take care of business.

Visitors to Baldwin find they are V.I.P. They can rely on being able to sample such specialties of the area as free guided safaris, snowmobile racing and rallies, cookouts on the trail, and the warming-fire comradeship that once was exclusively reserved for skiers.

Each winter, on the last weekend of January, the annual Sno-In Festival is held. This attraction draws thousands of happy snow-going families to Baldwin for the fun and festivities. Family fun is the rule for there is something to interest all visitors, young and old, in this three-day all-snowmobile festival.

Among the many events are the snow sculptures, Sno-In Queen Pageant, Giant Moonlight Safari and Cookout, Racing, Treasure Hunt, and the giant Snowmobile Parade, which gives a Mardi-Gras flavor with its many floats, clowns and hundreds of Snowmobilers riding down Baldwin's main street.

But it is Baldwin's trails that really bring large numbers of snow-goers to the area. These trails were laid out through heavy forests, along old abandoned railroad grades dating back to the logging era, and on two-track logging roads and unplowed forest routes. They pass by hundreds of small lakes, over glacial hills, and through an area which once rang with sounds of axes and cries of "timber."

All trails are well marked, and a good map showing all nine trails is free for the asking from the Baldwin Chamber of Commerce. Thus the snowgoer can easily follow the trails whether guided or in solo groups without trouble and with a great deal of fun.

The nine trails and their highlights are:

LINCOLN HILLS TRAIL. Beginning at Kaderabek's, a small grocery store and gas station north of Baldwin on M-37, this trail runs through the rugged Lincoln Hills, with a grand view of the beautiful Pine River along its 24-mile route.

LITTLE MANISTEE TRAIL. This 50-mile trail is the longest and most demanding of the Lake Country trails, and it offers the most contrasts in terrain. It runs from the edge of Wolf Lake Hills, past the eerie Baldwin-Luther Swamp, and crosses the Little Manistee River at several points. There are gas and comfort stops enroute.

TIN CUP SPRINGS TRAIL. Students of Michigan's

logging era history will find this trail fascinating. It criss-crosses many old railroad grades left from the logging days. The old lumber town of Luther provides an interesting half-way stop.

WARD HILLS TRAIL. The beautiful, yet challenging Ward Hills provide the setting for this snowmobiler's freeway. Beginning at Timber Creek Campground (open for winter camping) this trail winds through 35 miles of some of the country's wildest land. The snowmobiler can see timber being harvested, and can tackle a series of SSSSSBoom Bowls.

SWEETWATER TRAIL. One of two trails that begins right inside of Baldwin, it is perhaps the most popular of all. Twenty-three miles of some of the best scenery in the Pere Marquette River valley and a giant SSSSSBoom Bowl are the highlights of this run.

CLAYBANKS TRAIL. The other trail that starts in Baldwin, Claybanks offers fantastic scenery along its short 10-mile length, including part of the old Hoboes Trail, Carpenter Marsh, and the Claybanks of the Baldwin River.

BLOOD CREEK TRAIL. The Fox-Den Basin, home of the legendary "Henny, the King Fox," and one whale of a big SSSSSBoom Bowl await the snowgoer on this 27 miles of hilly beauty.

HONEYMOON LAKE TRAIL. Starting near Big Star Lake, this trail takes you through 30 miles of exciting scenery. Huge pine plantations, dating back to the CCC days, line the route. Rugged Chain O' Lakes Hills offer plenty of challenge to the adventuresome snowmobiler.

CEDAR CREEK RUN. Starting near the village of Bitely, this trail runs through some of the wildest and most beautiful country with a myriad of lakes, streams and abundant wildlife. It is not surprising to find a deer or two sharing the trail with snowmobilers who are encouraged to enjoy the sight but asked not to chase them.

It is no wonder that Baldwin claims the title of Michigan's Snowmobile Capitol . . . with all these trails to back it up. Little wonder, also, that so many participants in this fastest growing winter sport are finding Baldwin the place to go.

Perhaps one day another area will outdo Baldwin in the trail department. But until this happens Baldwin is the place to be for snowmobiling when winter comes.

HIGH SPEED GEARS

Another Lufkin Specialty

LUFKIN INDUSTRIES, Inc. is a name known throughout the world as the home of the "work-horse" of the oilpatch. For almost 50 years now, LUFKIN has produced the finest oilfield pumping units. Three pumps are manufactured to meet various needs of producers—the conventional crank balanced unit, the air balanced unit and the Mark II unitorque unit.

Back in 1939, LUFKIN threw its hat into the gear business. Having pioneered the geared pumping unit, LUFKIN was a natural to diversify to the manufacturing of gear units for industry.

For 33 years this company produced speed increasers and reducers for many industrial applications. Some of these include refineries and paper, rubber, sugar and steel mills. Others using LUFKIN gears are the mining, metal working and air conditioning industries. Still other uses of LUFKIN gears are cutter heads and pumps on dredges, flood gate hoists for dams and elevating mechanisms for offshore drilling barges.

As industry needs changed and expanded, so did LUFKIN change to meet and serve these needs. Hundreds of thousands of dollars were invested in plant expansion and the purchase of the most modern machine tools available. Many tape controlled machines were added to the manufacturing shops. Also LUFKIN purchased precision hobbing machines from Germany manufactured by Pfauter and Schiess.

The Schiess, largest gear cutting machine south of Chicago, can cut gears as large as 16 feet in diameter with face widths up to 48 inches. A super precision Pfauter is scheduled for delivery to LUF-

KIN within the next few weeks.

As industry needs expanded still further, the company entered the relatively new field of gear grinding, purchasing an extremely precise Maag gear grinder from Switzerland which can produce high precision gears.

For the past three years, LUFKIN has been improving its capability to produce high speed gearing for industrial applications. Personnel have been trained to engineer, manufacture, assemble and test these high speed units. Today the company can manufacture and test high speed gearing to 30,000HP.

Before a gear order is sent to the manufacturing shops, LUFKIN's engineers make complete computer analysis of the gear system. This includes tooth geometry, correct pitch, helix angle, hardness and face width. Also, journal bearing analysis is made including the requirements for stability type bearings, proper clearance, load carrying area and thrust bearing requirements to transmit coupling thrust.

Finally, engineers use the computer to make a complete lateral critical speed analysis based on bearing dynamic stiffness and the influence of unbalance produced by the floating part of the coupling.

To produce high speed precision gears, LUFKIN invested additional monies in gear inspection equipment and sensitive dynamic balancing equipment. Personnel were trained to operate this equipment and material specifications were tightened with the added requirement of ultrasonic inspection of all material and a Magnaglo check on the higher speed parts.

HIGH SPEED GEARS

When it comes to gear housings, LUFKIN takes a back seat to none. The housings are either heavy sectioned cast iron or welded construction. Each one is carefully stress relieved before machining for dimensional stability during machining and operating life. Housing bore sizes and alignment are certified correct before assembly.

All precision gear cutting and inspection equipment are in temperature controlled areas of the plant. This assures absolute control of gear accuracy.

Each gear is finish cut using Class AA hobs. The surface finish after hobbing is approximately 40 to 50 microinches RMS. After hobbing, the gear and pinion are matched using a fine lapping compound which improves the surface finish to less than 32 microinches RMS.

Gear assembly is closely supervised to assure compliance with engineering requirements of each job. Each assembly is checked for bearing contact, clearance and tooth contact.

After assembly, all gears go to LUFKIN's test facility which ranks second to none in the industry. This test facility consists of 500 HP and 700 HP electric motors and an 800 HP DC motor.

The 800 HP DC motor has a variable speed control which delivers full horsepower over a range of 400 to 1200 RPM and constant torque from 40 to 400 RPM. Connected to this motor is a two-stage speed increaser with three output shafts giving a speed range from 40 RPM to 21,500 RPM.

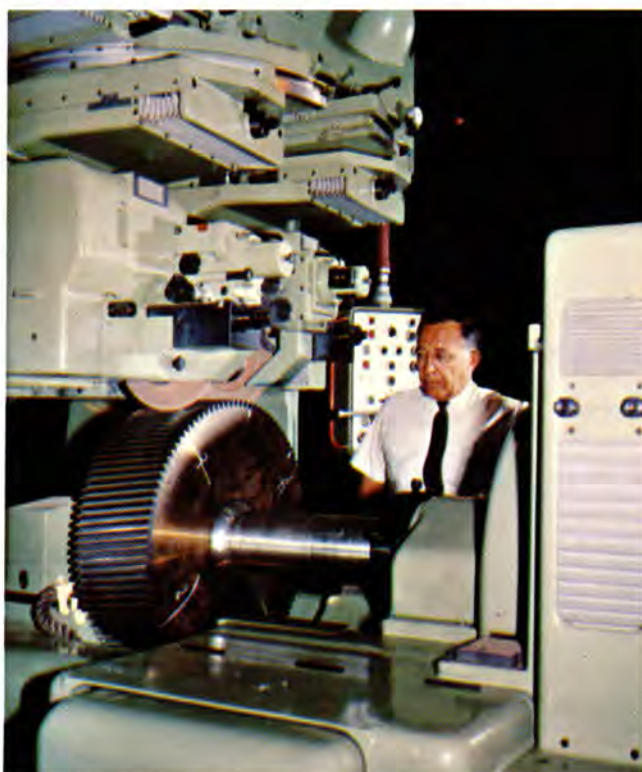
Load testing is performed using either a 600 HP dynamometer or locked torque (four square) loading. Under the locked torque test, gear units with 20,000 HP ratings can be tested at full load.

LUFKIN monitors these tests with vibration analysis including non-contact probes, sound level meters, thermocouple temperature sensors and oil flow meters.

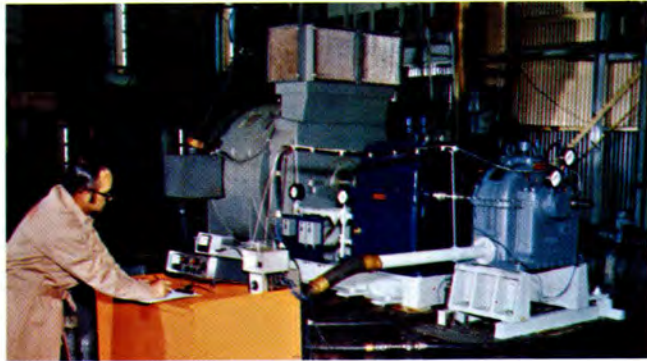
Not content to rest on its laurels, LUFKIN continues each day to search for newer and better ways to engineer and manufacture the finest high speed gearing that money can buy.



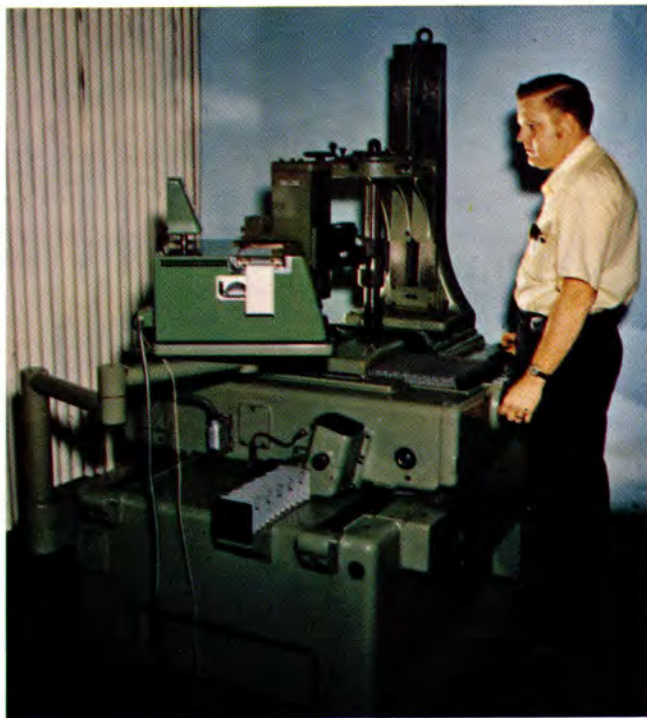
THIS Pfauter is one of several high precision gear hobbers.



THIS Maag gear grinder produces high precision gears up to 32" pitch diameter



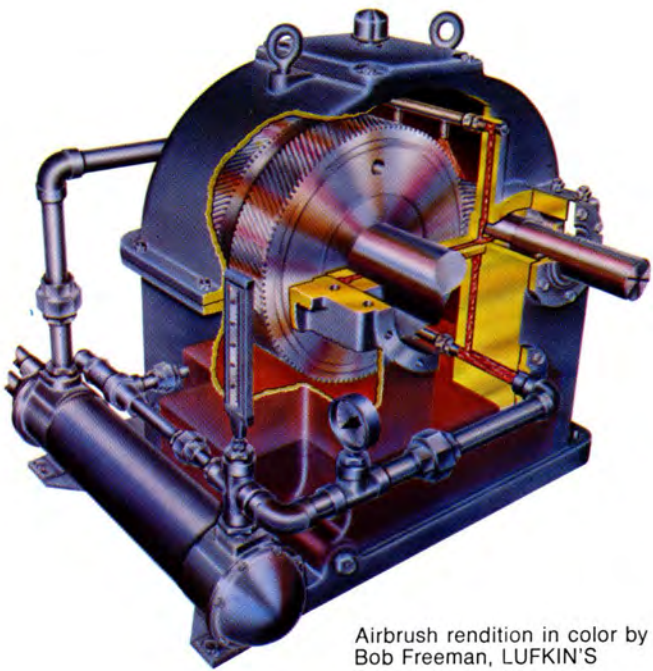
GEAR test stand using 800 HP DC motor and LUFKIN two-stage gear for test input speeds of 40 RPM to 21,500 RPM



GEAR inspection equipment is used to assure gear accuracy

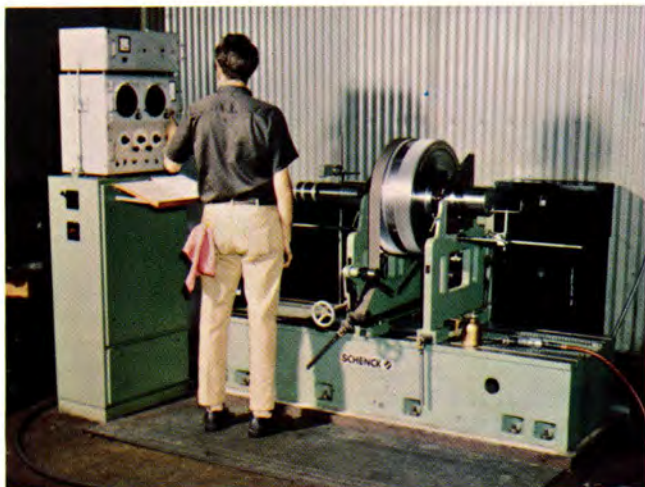


MATERIAL quality is assured by using ultrasonic and Mag-naglo inspection equipment. All forgings are certified before final machining



Airbrush rendition in color by Bob Freeman, LUFKIN'S commercial artist

THIS LUFKIN high speed gear unit shows heavy duty construction with oversize shafting and heavy cast housing to maintain alignment under load



All high speed gears and pinions are dynamically balanced to precision tolerances on modern equipment. Maximum balancing capacity is 10 feet diameter and 13,000 pounds

Lufkin's Plant Visitors



Front row, left to right: PAUL SCALLON, Sun Oil Co., Premont, Texas; ROBERTO AHUMADA, Ministry of Petroleum and Mines, Bogota, Colombia; LUIS A. CHIRINOS, Creole Petroleum Corp., Monogas, Venezuela; ABRAHIM A. EL-ZAWAHRY, Gulf of Suez Petroleum, Cairo, Egypt; JOSE TRINIDAD VILL-ASMIL, Texas Petroleum Co., Caracas, Venezuela; TIRTO-SAPUTRO B. SOELETTER, Pertamina, Pladju, Palembang, Indonesia; LUIS A. ANGULO, Corporacion Venezolana del Petroleo, Anzoategui, Venezuela; SASTROWIHARDJO HARD-JONO, Lemigas Indonesia Petroleum Institute, Djakarta, Indonesia; CLYDE JONES, Houston Natural Gas, Winnie, Texas; GERALD H. McMACKIN, Sun Oil Co., Corpus Christi, Texas; JEROME SIRUS, Sun Oil Co., Premont, Texas; CALVIN SCARBROUGH, LUFKIN, Lufkin.

Second row: WILLIAM A. CAIN, Mobil Oil Corp., Bakersfield, Calif.; CHARLES VINSON, LUFKIN, Lufkin; F. A. CHINCHILLA, Colombian Petroleum and Mines, Bogota, Colombia; CESAR A. SUAREZ, Texas Petroleum Co., Anaco, Venezuela; FREDERICK J. STINER, Humble Oil & Refining Co., Houston; ABDEL-KADER ABDEL LATIF NADA, The General Petroleum Co., Cairo, Egypt; JORGE V. MORALES, Petroleos del Peru, Talara, Peru; LARRY L. WESTON, Getty Oil Co., Taft, Calif.; WADE G. BINGHAM, Texas Pacific Oil Co., Odessa; JERRY CROFFORD, LUFKIN, Lufkin; MANOUCHEHR SADOOGHI, National Iranian Oil Co., Tehran, Iran.

Third row: GERALD W. KINARD, Murphy Oil Co., Hattiesburg, Mississippi; NILES L. DUGAN, Getty Oil Co, Bakersfield, Calif.; R. W. PENDLETON, Sun Oil Co., Houston; KENNETH TERRELL, Atlantic Richfield Co., Big Spring, Texas; TOM CROWDER, LUFKIN, Kilgore, Texas; WILLIAM M. ANDERSON, Atlantic Richfield Co., Eldorado, Texas; H. E. (ED) BOWERS, Cities Service Oil Co., Lafayette, La.; M. GOKHAN TARKAN, Mobil Exploration Mediterranean, Ankara, Turkey; BERNARDO EICHNER, Corporacion Venezolana del Petroleo, Maracaibo, Venezuela.

Fourth row: CURTIS KRUSE, director, School of Production Technology, Kilgore, Texas; R. E. BLAKE, Sun Oil Co., McAllen, Texas; RICHARD SMELLEY, LUFKIN, Lufkin; MILTON WALTHER, LUFKIN, Lufkin; SAM GIBBS, Nabla Corp., Midland, Texas; JOE DAVIS, LUFKIN, Lufkin; LLOYD R. PAFF, Standard Oil Co. of Calif., Taft, Calif; BYRON C. TEER, Humble Oil & Refining Co., Baytown, Texas; HOWARD NORTHCUTT, Mobil Oil Libya, Ltd., Tripoli, Libya; L. DALE SCOTT, Mobil Oil Libya, Ltd., Tripoli; ROLLINS MONARD ROTH, Texas Pacific Oil Co., Hamlin, Texas; D. L. KENNEDY, Getty Oil Co., Andrews, Texas.



Front row, left to right: JIM SIMMONS, Getty Oil Co., Houston; ELMER MUHLBACH and BOB WILLIAMS, both with Monsanto Co., Houston; ED TRIPPLETT and DON MOORE, both with Shell Oil Co., Conroe, Texas. Second row: BILL HOOD, J. M. Huber Co., Houston; C. B. EDDINGS, Getty Oil Company, Houston; BOB MASON, Shell Oil Co., Houston; LAWRENCE PAYNE, Monsanto Co., Houston; ED PATTERSON, LUFKIN, Houston. Third row: BILL MINER, retired, LUFKIN, Houston; BILL TROUT and MILTON WALTHER, both with LUFKIN, Lufkin; JOHN GREENIT, Shell Oil Co., Houston; JOE BYRD, LUFKIN, Lufkin.



Front row, left to right: R. L. POLAND, president, LUFKIN; GEORGE BAGNALL, Bagnall & Barber, Victoria, Texas; EARL DEFENBAUGH, Mobil Oil Corp., Corpus Christi; RICK REAGAN, Bagnall & Barber, Victoria; LEONARD FRANKLIN, Mobil Oil Corp., Corpus Christi; E. W. PATTERSON, LUFKIN, Houston. Second row: HOYLE CLANTON, Magnolia, Arkansas, and A. D. BOYETT, Longview, Texas, both with McAlester Fuel Co.; BILL TROUT, Lufkin, LUTHER TACKETT, Kilgore, Texas, and J. D. BRADLEY, Lufkin, all with LUFKIN.



Front row, left to right: HAYWARD STEVENS, Union Oil Co. of Calif., Olney, Ill.; DICK SORENSEN, Amoco International Oil Co., Chicago; JIM MASON, Union Pump Co., Battle Creek, Mich.; GERRY ROTHROCK, Union Oil Co. of Calif., Olney; TED STEKLACH and CARL YOUNG, both with Electro Motive Div., General Motors Corp., La Grange, Ill.

Second row: JIM ROE, LUFKIN, Houston; CALVIN EARHART and GARY HILL, both with Union Oil Co. of Calif., Olney; R. L. POLAND, president, LUFKIN.

Third row: MORGAN FLOURNOY, LUFKIN, Lufkin; GREG WYANT and JIM HUNTER, both with Union Oil Co. of Calif., Olney; JACK BAXTER, Amoco International Oil Co., Chicago; MERLE STECKEL, Union Oil Co. of Calif., Olney.

Fourth row: JOE DAVIS, Lufkin, G. W. NICHOLS, Crystal Lake, Ill., JOHN FINNEY, Pittsburgh, and BILL TROUT, Lufkin, all with LUFKIN; BUCK HOUSLEY, Union Oil of Calif., Olney.



Front row, left to right: JIM BROWN and LEN HENE, both with Dresser Industries, Inc., Connersville, Indiana; R. L. POLAND, president, LUFKIN; DICK EVANS, Dresser Industries, Inc., Connersville. Second row: BOB NICHOLAS, LUFKIN, Crystal Lake, Illinois; GLEN HUNT, Dresser Industries, Inc., Connersville; JACK BEHL, Elliott Company, Chicago. Third row: BOB ESHLEMAN, Dresser Industries, Inc., Connersville; BILL TROUT, LUFKIN, Lufkin.



Left to right: JOHN SWANSON, LUFKIN, Cleveland, Ohio; JOHN ADAMCHIK and GEORGE MARTIRES, both with Arthur G. McKee & Co., Cleveland; BILL TROUT, LUFKIN, Lufkin; RAY WYSOCKI, Cooper Industries, Cleveland.

Front row, left to right: BILL HANOVER, LUFKIN, Houston; BILL ALOI, Carrier Corp., Syracuse, N.Y.; JOHN MOFFITT, Interlake, Inc., Newport, Ky.; BOB POORMAN, Pittsburgh, Pa. Second row: HUGH McWILLIAMS, LUFKIN, Baltimore, Md.; JOE MURPHY, Ingersoll-Rand, Allentown, Pa.; JOHN FINNEY, LUFKIN, Pittsburgh; RAY DOWNEN, White Superior Div., White Motor Corp., Springfield, Ohio; J. D. BRADLEY, LUFKIN, Lufkin. Third row: JOE DAVIS and BILL TROUT, both with LUFKIN, Lufkin; FLOYD LUX, Ingersoll-Rand, Allentown; JACK CRESS, JOE LESNEFSKY and BOB SCHICK, all with Black Clawson, Hamilton, Ohio.



Front row, left to right: AL JOHNSON, Ingersoll-Rand, Phillipsburg, N.J.; HUGH McWILLIAMS, LUFKIN, Baltimore, Md.; PAUL SCHREFFLER, Fuller Co., Allentown, Pa.; JIM WALL-EART, Heyl & Patterson, Pittsburgh, Pa.; BOB POTTER, Mesta Machine Co., Pittsburgh; R. L. POLAND, President LUFKIN.

Second row: BILL TANGO, Production Machinery Corp., Cleveland; FRED KENCHEL, White Superior Div., White Motor Co., Springfield, Ohio; TOM REDMAN and DON BROOKS, both Beckwith, Pittsburgh; KEN DEIL and JOHN MOFFITT, both Interlake Inc., Newport, Ky. Third row: TERRY ROBINSON, Production Machinery Corp., Cleveland, Ohio; RICHARD SMELLEY, LUFKIN, Lufkin; JIM FERRERO, Elliott Co., Philadelphia, Pa.; TED KUMLER, T & G Sales, Cleveland.



LUFKIN INST

1 LUFKIN MODEL N800C Speed Increaser which transmits 300 hp. from an electric motor with a speed of 1780 rpm. driving a centrifugal compressor at a speed of 11,750 rpm. with a ratio of 6.6 to 1, located in a plant near Houston, Texas.

2 FOUR LUFKIN 80 VB Reducers, drive fans are in cells located directly behind wall above slanted grating air intake; National Cash Register, San Diego, California.

—Photo courtesy Ceramic Cooling Tower Co.

3 A BATTERY of LUFKIN Model NM1410H Speed Reducers which transmit 575 HP from steam turbines with speeds of 4000 RPM, coupled to LUFKIN Model TC4421 Speed Reducers driving a suger mill at 6.85 RPM in New Iberia, Louisiana.

4 LUFKIN Model N809C Speed Reducer transmits 2750 HP from a gas turbine at 15,400 RPM driving a centrifugal pump at a speed of 6,000 RPM with a ratio of 2.564 to 1. This Unit furnished to Gas Turbine Power, Inc. in Houston, Texas, for use on a hydraulic power drilling rig.

5 LUFKIN 90 VB Reducer located below ground level; air intake is through red steel grates; discharge is through fluted stack, ratio 7.22 to 1, Brigham Young University, Provo, Utah.

—Photo courtesy Ceramic Cooling Tower Co.

6 LUFKIN C-640D-304-120 Unit, Sivalls Bend Field, Unit #201, near Gainesville, Texas. This is LUFKIN's 100,000th pumping unit shipped on August 27, 1971.

7 LUFKIN M-640D-305-168 Unit, Atlantic Richfield Company, Walnut Bend Field, near Gainesville, Texas.

8 THREE LUFKIN 120 VB Reducers in a three-cell tower, ratio 4.17 to 1, U. S. Steel Company, Irvine Works, West Mifflin, Pennsylvania.

—Photo courtesy Ceramic Cooling Tower Co.



1



4



2



5



3



6

INSTALLATIONS



4



7



5



6



8

Lufkin's Plant Visitors



Front row, left to right: DAVE HUGGINS, Getty Oil Co., Los Angeles, Calif.; JIM FORRESTER, Union Oil Co. of Calif., Santa Maria, Calif.; DICK COUCH, LUFKIN, Bakersfield, Calif.; TRAVIS HENDRICK, Shell Oil Co., Bakersfield; R. L. POLAND, president, and FRED GRIFFIN, both with LUFKIN, Lufkin.

Second row: CARL FRAZER, LUFKIN, Los Angeles; NORM McANNALLY, Atlantic Richfield Co., LLOYD SMITH, Getty Oil Co., and WALTER DUDLEY, Tenneco Oil Co., all at Bakersfield; GEORGE YONKMAN, Getty Oil Co., Brea, Calif.; J. D. BRADLEY, LUFKIN, Lufkin.

Third row: JOE DAVIS, COOPER RICHARDS and BILL TROUT, all with LUFKIN, Lufkin; MIKE BEALESSIO, Getty Oil Co., Santa Maria; MILTON WALTHER, LUFKIN, Lufkin; LES NEBLETT, Westates Petroleum Co., Los Angeles.

Front row, left to right: BILL FARRIS, Chevron Oil Co., Gainesville, Texas; J. R. PUCKETT, Mobil Oil Corp., Oklahoma City; TOM ROCHE, Star Manufacturing, Oklahoma City; CLARK CHANSLOR; R. L. POLAND, president, and MILTON WALTHER, both with LUFKIN, Lufkin.

Second row: GERALD MURPHY, Chevron Oil Co., Gainesville, Texas; JIM SINCLAIR, Atlantic Richfield, Dallas; BILL TROUT, LUFKIN, Lufkin; ED CHANSLOR, Union Oil Co. of Calif., Woodward, Okla.; RICHARD SMELLEY, LUFKIN, Lufkin.

Third row: JACK GISSLER, Dallas, and BOB GIBBS, Houston, both with LUFKIN; C. R. SHRIRAM, Larsen & Toubro, Bombay, India; ERNEST SLAUGHTER, LUFKIN, Oklahoma City.



Front row, left to right: JESS HARGIS and BOB DRAPER, both with General Crude, Houston; TED PURVIS and DENNIS GRIFFITH, both with Continental Oil Co., Houston; HERB SMITH, Getty Oil Co., Houston; R. L. POLAND, president, LUFKIN.

Second row: J. D. BRADLEY, LUFKIN, Lufkin; CHARLES FOSTER, Sun Oil Co., Pampa, Texas; BILL MINER, retired, LUFKIN, Houston; MIKE WOOD, Continental Oil Co., Houston; JERRY JENKINS, Ashland Oil & Refining Co., Houston; MITCH SHIVERS, Humble Oil & Refining Co., Houston.

Third row: HARRY ALLEN, Sun Oil Co., Pampa, Texas; EL-DON (SHORTY) HUDSON, LUFKIN, Pampa; JOE DAVIS, MILTON WALTHER and BILL TROUT, all with LUFKIN, Lufkin; BOB WILKINS, Tenneco Oil Co., Houston; ED PATTERSON, LUFKIN, Houston.

Front row, left to right: RAY BLANDIN and KEN STOVER, both with Cities Service Oil Co., Russell, Kansas; LARRY WRIGHT, Union Oil Co. of Calif., Midland, Texas; E. W. PETERSON, Cities Service Oil Co., Russell; JACK DAISS, Amoco Production Co., Odessa, Texas. Second row: JOE DAVIS, LUFKIN, Lufkin; DON SEVERE, Cities Service Oil Co., Russell; C. E. PETERSON, LUFKIN, Great Bend, Kansas. Third row: JACK HILL, LUFKIN, Odessa; DICK AMBLER, Skelly Oil Co., Midland.





Production Engineering class from Shell Development Co., Exploration and Production Research Center, front row, left to right: MAX HASLER, Midland, Texas; RON HIGGINS, Denver, Colo.; GARY SARGENT, Houston; JERRY SEALE, New Orleans; WALTER STOCK, Edmonton, Alberta, Canada.

Second row: DICK BOZUNG, Ventura, Calif.; WAYNE INGRAM, Houston; RANDY SAUCIER, New Orleans, La.; DON KNOWLES, Midland; JOHN KREBS, New Orleans.

Third row: BILL BAUTE, Midland; STEVE KAISER, New Orleans; BILL CANTRELL, MILTON WALTHER, LYLE CARPENTER and FRED GRIFFIN, all with LUFKIN, Lufkin.

Fourth row: BUFORD NEELY, Houston; BEN ELLIOTT, LUFKIN, Lufkin; BOB LIPPINCOTT, New Orleans.



Left to right: C. D. RICHARDS, Lufkin, and E. W. PATTERSON, Houston, both with LUFKIN; CLAYTON MAXWELL, Tesoro Petroleum Corp., San Antonio; JOE DAVIS, LUFKIN, Lufkin; JIM SHEPHERD and LARRI ELROD, both with Sun Oil Co., Corpus Christi; JACK WATSON, San Antonio, and DICK SELMAN, Ada, Okla., both with W. M. Osborn; CLYDE STOUT, Cities Service Oil Co., Corpus Christi; R. L. POLAND, president, and JOE VARGA, both with LUFKIN, Lufkin.



H. H. (RICK) MULLER, left, LUFKIN, Dallas; DICK WOMACK, Amoco Production Co., Denver, Colorado.



First row, left to right: JUAN LIZARRAGA, Korkut Engineers, Metairie, La.; ALVIN SHERICK and J. W. BEAN, both with C. F. Bean, Inc., Belle Chasse, La. Second row: B. C. BURNETTE, LUFKIN, New Orleans; GARY CHARLES, Hunt Engine & Equipment Co., Harvey, La.; R. E. JEZEK, C. F. Bean, Inc., Belle Chasse.

Left to right: SONNY LEA, Lea Industries, Kilgore, Texas; RAY YOUNG, Tenneco Oil Co., Slocum, Texas; BILL TROUT, LUFKIN, Lufkin; TERRY LACY, Slocum, LARRY OLIVER, Houston, both with Tenneco Oil Co.; LUTHER TACKETT, LUFKIN, Kilgore.



Front row, left to right: MARTUA RADJA SITUMORANG, P.N. Pertamina, Unit I, Djakarta, Indonesia; ROGOWIDJOJO SOEKARJOSO, P.N. Pertamina, Unit IV, Djakarta, Indonesia; LUIS F. PULIDO, Texas Petroleum Co., Bogota, Colombia; K. S. SOEPARMAN, P.N. Pertamina, Djakarta, Indonesia; HAMEED AHMED AL-JOUDI, Iraq Petroleum Co., Ltd., Kirkuk, Iraq.

Second row: J. D. BRADLEY, LUFKIN, Lufkin; AULIA SIAGIAN, P.N. Pertamina, Djakarta, Indonesia; MOCHMAD THAMRIN, P.N. Pertamina, Palembang, Indonesia; JACK TIPPENS, Atlantic Richfield Co., Longview, Texas; BILL D. MALM, Getty Oil Co., Bakersfield, Calif.; JACK LYNN CLAY, Getty Oil Co., Bakersfield; E. M. WONGKAREN, P.N. Pertamina, Unit IV, Djakarta; LUTHER TACKETT, LUFKIN, Kilgore, Texas.

Third row: BOB GIBBS, LUFKIN, Houston; JOE DAVIS, LUFKIN, Lufkin; JIMMIE DALE HARRIS, Amoco Production Co., Harlingen, Texas; I. C. CHAMBLEE, Amoco Production Co., Sweeny, Texas; BILL TROUT, LUFKIN, Lufkin; R. O. LEWIS JR., Atlantic Richfield Co., Lafayette, La.; JIM BARBER, Gulf Oil Company, Hamshire, Texas; TOM CROWDER, LUFKIN, Kilgore, Texas; CURTIS KRUSE, director, School of Production Technology, Kilgore.



M/V Leslie Ann

Luxury Towboat



M/V LESLIE ANN with 36 barges in tow plies the tricky Mississippi effortlessly

ONE of the largest towboats ever built by St. Louis Ship recently was placed in service by the Upper Mississippi Towing Corporation of Minneapolis, Minnesota.

The 7500 hp. M/V LESLIE ANN, the 206th towboat built by the St. Louis firm, is the most powerful in the Upper Mississippi Towing fleet.

Christened April 7, 1971, on the St. Louis riverfront by its namesake, Miss Leslie Ann Baskerville, the triple-screw craft operates on the Mississippi River between St. Louis and New Orleans.

The LESLIE ANN's hull is 198 x 50 x 11½ feet with a normal draft of 8½ feet. The hull is heavily framed longitudinally and transversely with the aft deck raised to provide additional strength to the stern.

Propulsion power is furnished by three General Motors Electro-Motive Division model 16-645E5 marine diesel engines each developing 2500 hp. at 800 rpm. through LUFKIN Model RS3626 reverse and reduction vertically offset marine gear with Fawick pneumatic clutches.

The propellers are 109 inches in diameter, five-blade, stainless steel-lined nozzles.

The engines are cooled with clear water circulated through a St. Louis Ship-designed skin cooling system. The engines are started from the engineroom and controlled from the pilothouse by pneumatic control equipment.

Electric power is furnished by two 150 kw. Caterpillar diesel electric sets with Century generators.

All safety provisions are made for operating personnel. Handrails, grabrails, safety lines and toe rails are located wherever needed. Safety guards cover all dangerous moving machinery.

Fenders of reinforced 5/8-inch steel plate run full length on the sides. Bow corners are built out to fair with the fenders. The tow knees and headlog are of a special heavy design, faced with one-inch plate. Wire rope reels, each with a capacity of 600 feet of one-inch wire rope, are mounted in each tow knee.

The deckhouse is spacious and comfortable.

Quarters for the chief engineer, assistant engineer, mates and four guests are located on the second deck. The captain and pilot are quartered on the third deck with an office for the captain and a general storage room.

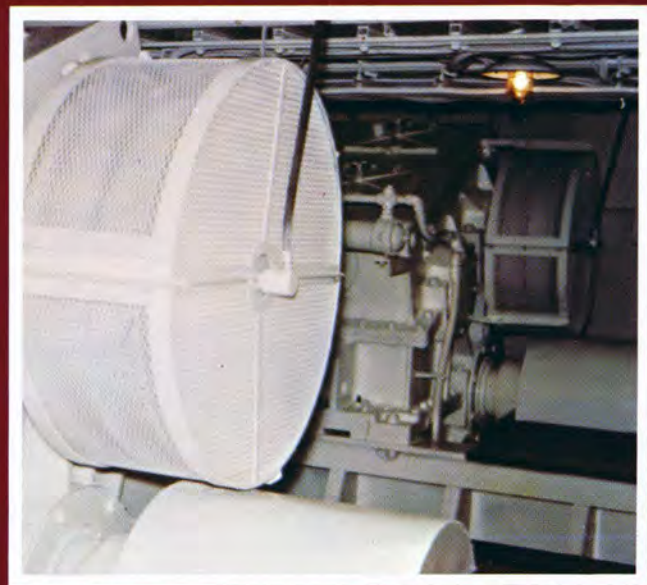
The pilothouse, 21 feet wide and 18 feet fore and aft, is raised seven feet above the fourth deck making the pilot's eye level some 40 feet above water level. All windows are heavy safety glass set in rubber moldings.

The room below the pilothouse houses electronic equipment for the radars, automatic pilot, seachlight rectifiers, etc.

All quarters, the lounge, mess, galley and pilothouse are year-round air-conditioned.

The Upper Mississippi Towing Corporation are specialists in transporting bulk commodities throughout the entire inland waterways.

This luxury towboat joins her sister vessel, the Harriet Ann, plying the waters of the mighty Mississippi.



THIS is the forward clutch for the center LUFKIN gear with the starboard LUFKIN gear in the background

Lufkin Laffs

The director was having difficulty with the amateur actor with whom he was rehearsing a summer show.

"You've got to put timing and feeling into it," he said. "Take that line where you enter and say, 'Cleopatra, Cleopatra, what you done?' Stop after Cleopatra and take a couple of short breaths and then put some umph into 'What have you done?' Get it?"

The aspiring actor nodded. They re-grouped the players, and set the scene again.

Then he re-entered: "Cleopatra," he said, "Cleopatra (sniff, sniff), what have you done?"

"New cocktail for the tense executive: take one jigger of Vodka, then fill up the glass with milk of magnesia. It's called a Phillips screw-driver!

The farmer was busy working in the south forty when his little son, Johnny, came running out to tell him that a man had just driven up to the house in a big automobile.

"Johnny," said the haggard farmer, "run back to the house as fast as your legs will carry you. Ask that man what type of work he does. If he says he is a traveling minister, run down to the cellar and lock up my liquor cabinet. If he says he is a law officer, lock the garage where I keep the still. If he says he is a salesman—sit on your ma's lap until I get there. . ."

Imagine the plight of the second man on a two-man mountain climbing team when they reach the steepest part of the climb and the man just in front of him looks back and says, "Sorry, Joe, but I just gotta go!"

The elderly woman walked into a liquor store with two guns, pointed

them at the owner and said, "Give me six bottles of scotch, all the money, and I want you to take me into the back room and make love to me."

He got the money and the scotch; then took her into the back room where he proceeded to make love to her, her guns still pointed at his temple.

In the excitement of the lovemaking, the woman dropped her guns.

He paused momentarily and said, "Lady, would you mind picking up your guns again; I'm expecting my wife any minute!"

Two fellows were riding along in a car, when one of them turned to the other and said, "This B.O. is terrible. One of us is going to have to change our deodorant.

The other replied, "Well, it will have to be you because I don't even use one."

"Do you believe in Original Sin?"

"That depends on how original you want it to be."

Life begins at 40, but you'll miss a lot of fun if you wait that long.

When the sexy miss walked into police headquarters, the Desk Sergeant told her, "I understand you've come down to sign a complaint about the man who was caught seducing you in a parked car last night."

The girl screamed, "What complaint? I thought the patrolman asked me if I wanted to sign a compliment!"

When the hotel detective had assured himself that a guest on the sixth floor had an unregistered person sharing his room, he reported his findings to the manager.

The manager picked up the house

phone, got the man on the line and without much ado asked him if his guest was a lady.

"Hold the line," came the brash reply, "and I'll ask her."

The little boy was out in the back yard with his chemistry set. He seemed to be driving nails into a board. His father approached and asked, "What are you doing with those nails?"

The son replied, "They're not nails, Dad. They're worms. I apply some of my secret formula to these worms and they get as hard as nails."

The father said, "Make me some of that stuff and I'll buy you a new bicycle."

The kid was thrilled and gave his father a small bottle of the formula. Two days later, sure enough, there was a new bicycle outside the house and beside it, a beautiful motor scooter. The kid hollered, "Thanks for the new bike, Dad, but who's the motor scooter for?"

His father replied, "That's for you too, son. It's a present from your mother."

The night before, he was really polluted. In the morning he rolled over and there beside him in bed was a truly ugly woman, sleeping peacefully.

He got out of bed quietly, dressed, left \$20 on the dresser and started to walk out when he felt a tug at his pant leg. He glanced down and there was a woman who was even uglier than the one in bed.

She gazed up at him and asked, "Nothing for the bridesmaid?"

Jim: "Where are you running to, John?"

John: "It's the children's night out and I've got to get home and take care of the maid."

The Management and Employees of
Lufkin Industries, Inc.
wish you and yours.....

**MERRY
CHRISTMAS
and a
HAPPY
NEW YEAR**



