

HOW TO DESIGN FOR LOWER STRUCTURAL COSTS

WITH today's accent on cost, there is a promising future for the designer who can simplify structural designs to save steel and construction manhours. Such savings are being realized every day by the use of arc welding instead of riveting in the construction of all types of industrial plants, multi-story buildings and bridges. By eliminating rivets and taking advantage of rigid framing and continuous beam construction, welded designs help to offset the rising costs in labor and materials.

Shown below is a typical example of how full structural continuity achieved through arc welding effected savings of \$22,000 in the construction of an 87,000 square foot process warehouse. Arc welding actually has saved 1.68 pounds of steel per square foot. At \$0.15 per pound for fabricated steel, the saving amounts to \$22,000 over the cost of steel alone had riveted design been used.

In spite of the rapid progress made in the construction field by the welding industry, new developments are taking place every day which are of prime importance to the structural engineering graduate. Latest information on welded structural designs is available in handbooks and bulletins simply by writing to The Lincoln Electric Company, Cleveland 17, Ohio.



Fig. 1. Process warehouse for the Hale-Halsell Grocery Co., Tulsa, Oklahoma. Size 250' x 350' with 16' clear height. Contractor: Tulsa Rig and Reel and Manufacturing Co. Consulting Engineer: David R. Graham & Associates, Tulsa, Oklahoma.

THE LINCOLN ELECTRIC COMPANY
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**THE WORLD'S LARGEST MANUFACTURER
OF ARC WELDING EQUIPMENT**

PERSONALS

1922

John E. Shield, consulting structural engineer, died on June 1, 1953 in Los Angeles. He was a past president of the Structural Engineers Association of Los Angeles and was formerly in charge of the Earthquake Strength Program for Tanks and Towers of the Board of Fire Underwriters of the Pacific. John served on active duty in the Corps of Engineers of the U. S. Army from January, 1941 to January, 1946 and was an honorary reserve officer in the Corps of Engineers with the rank of Lieutenant Colonel. He was also a director of the Caltech Alumni Association in 1939-40.

Capt. Frederic A. Brossy, Ex., is commander of naval air bases for the Eighth Naval District.

1926

William A. Lewis, Ph.D. '29, was recently elected to the Executive Committee of the Chicago section of the AIEE. He is also serving on the following national AIEE committees: power division, standards, research, protective devices and rotating machinery. The Lewises have a son, Alan Carver, born November 19, 1950; and a daughter, Ellen Elizabeth, born February 17, 1953.

1927

Gustaf W. Hammar, Ph.D., was recently honored for his research in physics with fellowship in the American Physical Society. He joined the Eastman Kodak Company in 1946, and is at present head of a research, development and engineering department of the Company's Navy Ordnance Division.

1930

Truman H. Kuhn took over the position of Graduate Dean at the Colorado School of Mines in Golden in September. He has been Professor of Geology and head of the mining geology option there since 1947.

1931

Carl F. J. Overhage, M.S. '34, Ph.D. '37, assistant director of Eastman Kodak's color technology division, was recently honored with fellowship in the American Physical Society. In 1948, Carl was awarded a presidential Certificate of Merit in recognition of his services at M.I.T.'s Radiation Laboratory. In 1951 he was appointed a member of the scientific advisory board of the Chief of Staff, U. S. Air Force.

Glenn M. Webb was appointed an assistant division director in the Whiting, Indiana, research laboratories of the Standard Oil Co. Glenn served as a research associate with Standard, starting in 1948, and earlier this year was promoted to section leader.

1933

William W. Moore, M.S. '34, addressed a dinner meeting of the Los Angeles Section of the American Society of Civil Engineers on September 9. Bill reported on his recent four-month trip to Pakistan, Iraq and India.

1934

Nick Van Wingen has gone to Turkey, where he will make an engineering evaluation of two oil fields for the Turkish government. He recently resigned as vice-president of Petroleum Technologists, Inc. and is now a consultant petroleum engineer with offices in South Pasadena.

Garford G. Gordon received his Ph.D. in applied physics from the University of Southern California in June.

Carsten C. Steffens has returned to the Stanford Research Institute as technical coordinator of the research division. He was assistant director of the Institute from 1947 to 1949, and for the past four years has been associate professor of chemistry at the University of New Mexico. In 1947 he helped initiate the SRI's study of smog in Los Angeles, and during the time he spent at the University of New Mexico he continued to serve as technical consultant to the Institute's air research laboratories. In his new position he will follow progress of all research groups and act as technical advisor on certain industrial projects.

1935

James J. Halloran is a partner in Electro Engineering Works in Oakland, Calif. He has been associated with the company since 1945.

Bruce B. Gravitt was named manager of General Electric's meter and time-switch sales in the company's meter and instrument department. Bruce was formerly a sales engineer in G.E.'s Los Angeles and San Diego offices. He moved to West Lynn, Mass., in 1951 as manager of instrument transformer sales.

1937

Robert P. Bryson, M.S., is still with the U. S. Geological Survey, Washington, D.C. He is currently chairman of the geologist staffing committee, charged with coordinating, selecting, and assigning geologists in the Survey. Bob is also secretary of the Geologist Society of Washington through 1954, and published "The Coalwood Coal Field, Powder River County, Montana" in the U. S. Geological Survey Bulletin 973-B last year. He and his family—wife and two children, Rob (4) and Belinda (6 months)—live in Arlington, Virginia.

1938

John G. MacLean has been teaching at the Harvard Business School and develop-

ing a new second-year course dealing with the management policies of industrial companies. He has also been doing research and writing in the field of business administration, and consulting work for industrial companies (primarily Continental Oil Co.) and various government organizations, such as the Naval Ordnance Test Station at Inyokern.

John R. Woolson, M.S. '41, has been working for the United Geophysical Company in Fairbanks, Alaska, for the past four years. He says—"We have been working for the Navy on the arctic slope of Alaska, attempting to help them find oil. This has involved many trips across the Arctic Circle, following easily the routes laid out with such difficulty by the explorers of 50 to 75 years ago. One flies almost any place one wishes to go in Alaska, so all of these trips have been by airplane." John has been married since 1942, and has three boys whose ages are five, seven, and nine.

Sidney Bertram joined the Rand Corporation in 1951, shortly after he completed work for a Ph.D. in physics at Ohio State University. Although his home is in Los Angeles, Sid has been on spe-

cial assignment for Rand with the Lincoln Lab in Massachusetts. His wife and three boys (Irving, 7, Henry, 4, and Robert, 3) are enjoying the East.

Carl Friend is aerodynamics engineer at the Lockheed Aircraft Corporation in Marietta, Georgia. The facility is known as the U. S. Government Aircraft Plant No. 6 and is the largest airplane plant under one roof in the world. They are currently building B-47 medium bombers and tooling up for the C-130 medium transport. Carl is in charge of preliminary design, aerodynamics and related work.

Carlton L. Horine is at present in charge of the China Lake Pilot Plant Division and working on propellant and testing problems associated with such rockets as the 2.75-inch FFAR (Mighty Mouse). Although the Horines have been living in China Lake since 1945, they've been able to take several trips. Navy business takes Carlton to Washington several times a year; the whole family took a trip to Carlton's home town—Cristobal, in the Canal Zone—in 1946 by freighter via New Orleans; and he and his wife had a three-week trip to Belgium with a weekend in Paris and Amsterdam in August

of 1951. The Horines have three children—a son 10, and two daughters 8 and 6.

Harrison M. Lavender, Jr. is Assistant Chief Engineer at the California Research Corporation in Richmond, Calif. The report of his death, published last year in *E&S*, was, we are glad to say, highly exaggerated. Harrison's father died at that time.

1939

Walter H. Munk, M.S. '40, has been awarded a Guggenheim Fellowship in recognition of his work involving the effect of winds on ocean currents. He is currently an associate professor of geophysics at the Scripps Institution of Oceanography at La Jolla, where he received his doctor's degree in 1947.

1941

John M. Richardson is now a member of the technical staff of the Radar Laboratories of the Hughes Research and Development Laboratories in Culver City, Calif. He was formerly a research physicist at the U. S. Bureau of Mines.

Col. John K. Arnold, Jr., M.S., was the command pilot of a B-29 type aircraft which was reported missing on January 12, 1953 on a combat mission over North Korea. No further information has been received as yet regarding his exact fate.

1942

John R. Allan is Hull Section Head at Todd Shipyards Corp. in San Pedro, Calif. The Allans have another son, Richard Bruce, one year old.

S. Kendall Gold writes that his second child, Virginia Ann, was born on April 15 in Rye, New York. Kendall is employed at the California-Texas Oil Co. in New York and is Secretary-Treasurer of the New York Alumni Chapter.

1943

Fred H. Tenney received his Ph.D. in physics from the University of Rochester and has a position as Instructor at Princeton for the coming year. The Tenneys have one son, Steven, now ten months old, and expect another child at Christmas time.

William C. Thompson, Jr. married Caroline Cralle on August 15. Caroline is a graduate of Stanford and also attended U.C.L.A. Bill is now employed as an electronics engineer at the Naval Ordnance Test Station in Pasadena.

Arthur O. McCoubrey received his Ph.D. in June from the University of Pittsburgh.

Richard M. Sutton, Ph.D. '47, taught a course in basic concepts in physics at the University of Delaware's summer session this year. He's Professor of Physics at Haverford College, Pa., and a visiting lecturer at the Case Institute of Technology.



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PERSONALS . . . CONTINUED

1944

Bob Freeman has been working in the magnetic materials development group of the Digital Computer Laboratory at M.I.T. for the past year. The Freemans now have three sons—Jeff (5), Jim (3), and a recent arrival, John.

Bert Golding, M.S. '47, is still working in the research laboratory of the United Gas Corporation in Shreveport, Louisiana. He is now supervisor of the reservoir engineering section. He also teaches general chemistry and physical chemistry in night school at Centenary College. The Goldings have two boys, Bruce and Martin. Bert and his wife still spend much of their time trying to assist the spread of Unitarianism, and Bert is chairman of the Shreveport Fellowship.

Fred W. Morris, Jr. returned to California this summer after spending the past few years in New Jersey, where he was Chief of the Research Studies Section, Countermeasures Branch, of the Signal Corps Engineering Laboratories in Fort Monmouth. His new position is in the same field, this time participating with a contractor (Sylvania Electric Products) in the establishment of a wholly new laboratory—the Electronic Defense

Laboratory in Mountain View, Calif. He represents the Chief Signal Officer in the technical direction of this activity.

Thomas A. Carter received an M.S. in mechanical engineering from the University of Southern California last June.

1946

Cassius Richard McEwen and his wife announced the birth of a son, Todd Wells, on August 2, 1953.

Lt. Col. John W. Barnes, M.S., graduated from the Command and General Staff College at Fort Leavenworth, Kansas, and went to Korea in June. His wife, Mary, and three children are waiting for him in Washington, D.C.

Willard A. Ross was recently promoted to Lieutenant and given the new title of Shops Engineer for the Public Works Department at the Naval Station in Great Lakes, Illinois.

Lt. Milton G. Webb received a B.S. degree in engineering electronics from the U. S. Naval Postgraduate School in Monterey in June.

Frederick C. Essig received his Master of Science degree from U.S.C. in June.

1947

John D. Holmgren is now a member of the technical staff of the Radar Labora-

tory at the Hughes Research and Development Laboratories in Culver City, Calif.

Lt. Cdr. Quentin R. Whitmore reports that the Whitmore family now includes two boys and one girl—Bob, 7; Bev, 4; and Greg, 1.

Capt. Spencer R. Baen, M.S., Ph.D. '50, was assigned to Army Field Forces Board No. 2 at Fort Knox, Kentucky, after graduation from Tech. This is part of the Army's Development system. The Baen's third child, Peter Roe, was born in December, 1952. Spencer left Kentucky this summer to attend the Artillery Officers' Advanced Course at Fort Sill, Oklahoma until the spring of 1954.

Richard L. Felberg is now a registered electrical engineer and working at CWT. He has two daughters, and a third child is expected this month.

1948

Byron L. Youtz completed work for a Ph.D. in physics at the University of California at Berkeley in August, and left immediately for Beirut, Lebanon, where he is an assistant professor in the Physics Department at the American University of Beirut. His wife, Bernice, accompanied him.

Julius Bendat received his Ph.D. in mathematics last July from U.S.C., and is now engaged on special applied mathematical problems at Northrup Aircraft. The Bendats now have a year-old daughter to supplement the son born when Julius left Caltech in 1948.

Colonel Harvey R. Fraser, M.S., graduated from Command and General Staff College in Fort Leavenworth, Kansas, in June and is now Professor of Mechanics at the U. S. Military Academy.

Lt. Col. Roy S. Kelley, M.S., was assigned to the Far East Command after graduation from Command and General Staff College last June.

Thomas G. Lang received an M.S. in mechanical engineering from U.S.C. last June.

Lothrop Mittenhal received his M.S. from U.S.C. in June.

Paul MacCready, M.S., Ph.D. '52 won the national soaring championship on July 15 in a 104-mile hop from Elmira to Utica, New York.

1949

Roy W. Gould was awarded a Hughes Fellowship for study toward a Ph.D. in physics at Caltech, and will at the same time be associated with the microwave lab at the Hughes Research and Development Laboratories in Culver City, Calif.

Lt. Col. Albert E. Saari, M.S., has been serving with the Korean Military Advisory Group, comprised of U. S. person-

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nel to advise the South Korean Army in training and in the field. Al is a veteran of 13 years Army service and holds the European-African-Middle Eastern Theater Ribbon with five campaign stars.

1950

Roger A. Picciotto received a Master's degree in industrial chemistry from M.I.T. in June, and has started work with Procter and Gamble in Cincinnati, Ohio.

David B. MacKenzie, who has been doing graduate work at Princeton for the past three years, completed his doctorate thesis last spring and expects to take his final oral examination in October. He has been working as a geologist with American Overseas Petroleum Ltd., a subsidiary of the California-Texas Oil Company in New York. Following a short training period in geophysics in California he will soon be sent overseas, destination unknown. He lists the following Tech graduates who will be returning to Princeton in the fall: Don Baker '50, Manny Bass '48, Gene Shoemaker '47, M.S. '48, Tom Slodowski '53, Fred Eisen '51 and Jim Gerhart '50.

Albert Eschner, Jr. received his M.S. degree in electrical engineering from U.S.C. last June.

1951

E. B. Crichton has accepted a job as instructor at Anatolia College in Thessaloniki, Greece. He took off for a stop-over in Paris at the end of August.

Charles Bates married Nancy Lindheck at Jamestown, New York on June 27. Phil Bates '53 was best man. Charlie is still working at M.I.T., on an AEC contract, on cold sterilization of foods.

Frank Hooper, after two years in the Union Oil Company's sales training program, has been sent to their sales department headquarters in Balboa, Canal Zone. His wife, Claire, accompanied him.

Nathan H. Koenig wrote that he was busy putting in a California-style patio in a new home he bought in Denver this summer. He is now working in the Shell Development Company's Agricultural Research Division.

Richard M. Libbey received his commission in July at the U. S. Naval Officer Candidate School in Newport, Rhode Island.

Reuben Kachadoorian is an engineering geologist with the U. S. Geological Survey, working in cooperation with the Alaskan Road Commission, putting in a road from Paxton to Cantwell, Alaska.

1952

Harry C. Hoyt, Ph.D., is now on the staff of the Scientific Laboratory at Los Alamos, New Mexico.

David L. Hanna was one of a hand-picked group from Korean Communication Zone headquarters supervising prisoner of war exchange this summer in "Operation Big Switch" at Munsan.

Peter Verdier was married on May 29, and he and his wife are living in Cambridge while he continues his studies in chemistry at Harvard.

1953

J. Morgan Ogilvie is Deck Officer on the U. S. Coast and Geodetic Survey Ship Cowie out of Norfolk, Virginia.

Arthur E. Britt is now a member of the technical staff of the Hughes Research and Development Laboratories in Culver City.

John D. Gee is taking the Bethlehem Steel Corporation's Loop Course. This is an intensive indoctrination and training program for selected college graduates conducted from the company's headquarters in Bethlehem, Pa., preparatory to assignment in one of the firm's various operations on the West Coast.

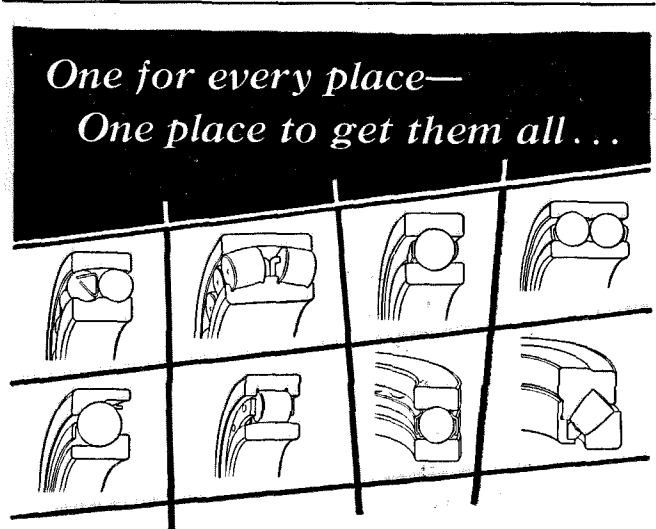


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