

the challenge ahead

Industry's demand for lower costs of manufacture offers a promising future to the progressive-minded engineering graduate.

The machine designer who knows how to utilize materials to best advantage will find great demand for his services. That's because the cost of material constitutes a good share of the ultimate cost of a product.

An efficient machine design is one that utilizes the fewest pounds of the least expensive metal that will give required service life.

A basic comparison of materials shows:

1. Steel is 2 to 3 times stronger than gray iron. Only one-third the amount of metal is needed for equal strength in tension.
2. Steel is 2½ times as rigid as iron. Only 40% of the amount of material is needed for equal rigidity.
3. Pound for pound, steel costs a third as much as iron.

As a result, when steel is used to its best advantage, the cost of material amounts to approximately 15% of the cost of iron required for equal rigidity. (40% x 1/3)

The large initial saving in material cost provides a wide margin in which to fabricate the steel and still realize a substantial savings in overall cost.

Engineering students wishing to keep abreast of rapid developments in design may obtain literature on application of welded steel by writing:

THE LINCOLN ELECTRIC COMPANY
Cleveland 17, Ohio

*The World's Largest Manufacturer
of Arc Welding Equipment*

PERSONALS

1924

Edward E. Dorresten, who attended Caltech for several years with the class of '24 before transferring to Stanford, died last July. His entire professional career had been in the field of petroleum refining and chemical plant engineering, and at the time of his death Ed was a vice-president of the Bechtel Corporation, responsible for the company's petroleum and chemical activities.

1926

Robert B. Bowman spent the month of August vacationing in eastern Quebec, Nova Scotia, Newfoundland, and points in between. Bob is an associate director of the California Research Corporation in San Francisco, and is a frequent visitor to southern California in connection with the operation of the company's laboratory at La Habra.

1927

Ralph M. Watson, MS '28, recently accepted appointments as Associate Dean of the L. C. Smith College of Engineering and as Chairman of the Department of Mechanical Engineering at Syracuse University, N.Y. Ralph had been serving as Director of Research for the Worthington Corporation of Harrison, New Jersey—having been associated with that company for the past 19 years.

1928

John W. Thatcher, MS '30, has joined the ElectroData Corporation of Pasadena as Customer Service Manager, heading a department of computer engineers and technicians, responsible for installation and maintenance of "Datatron" high-speed electronic data processing machines. John was previously employed as an engineer with Western Electric, where he worked for 15 years.

1929

Leslie O. Scott, who was just retired as an Army Engineer Colonel, has stepped into another active career, operating his own engineering equipment distributing companies—Valesco, Inc. and Air-Floor Sales & Engineering. Family-man Scott writes: "I have a beautiful wife and three children—David, 14, Christopher, 9, and Heidi, 6."

James W. Dunham was sent to Pakistan last year by the Point Four Program to serve as an advisor on the engineering of a new government fishing harbor. From Karachi, where the harbor is being constructed, Jim reports: "Am now on the last 6 months of my two-year hitch over here with the U. S. Foreign Operations Administration, under a contract with the Ralph M. Parsons Co.

"The fish harbor that I came here to advise on as my primary assignment finally got under way last week after 18

months of wrangling over the site location and over which agency of the Pakistan government would do the work. One either learns the patience of the Orient in these parts or becomes a patient in a psychopathic ward."

1931

Glenn M. Webb has been named director of the hydrocarbon research division of the Standard Oil Company of Indiana. He joined the organization in 1948.

1932

Patrick B. Lyons, who has been with the Western Electric Company since 1942 was recently made superintendent of the company's Chatham Road Shops at Winston-Salem, North Carolina.

1934

Edward B. Doll, MS '35, PhD '38, has joined the staff of the Ramo-Wooldridge Corporation, Los Angeles, as Director of the Project Control Staff, Guided Missile Research Division. Ed has had long experience in the electronics and instrumentation fields, and was technical director for two major special weapons programs for the Army Air Force. Last February he was director of the military effects group at the atomic tests held in Nevada.

1936

Clarence L. Dunn, PhD, was sent to the Netherlands in July on a one-year assignment by the Shell Development Company's Research Center at Emeryville, California. He is head of the physical chemistry department at Emeryville.

Meral W. Hinshaw is president of his own company, Diamond Tool Associates, in Hawthorne, California. "Started a year ago, and going strong!" Meral writes.

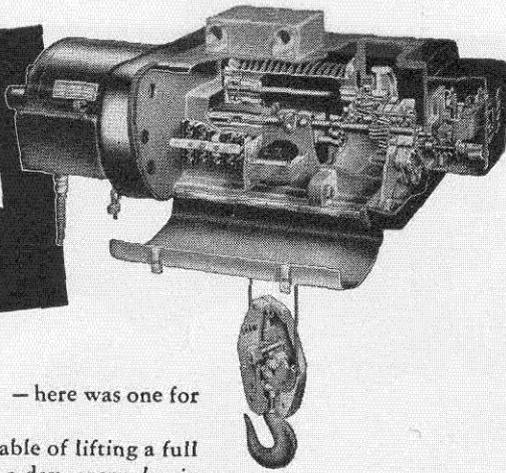
1937

Walton A. Wickett, married after long years of lively bachelorhood, writes: "Married on February 5, 1955, to Hiltgund Tekusch Vorsteher, a Viennese who, passing through the United States en route to India, was side-tracked by English literature at the University of California and the writer, (who interrupted her transit at that institution's Faculty Club). We are home owners in Atherton . . . I teach physics and mathematics at the Menlo School and College, Menlo Park, California."

1938

J. Kneeland Nunan, MS, has been named vice-president and staff adviser to the president of the Consolidated Engineering Corporation in Pasadena. He will act as special adviser to President Phillip Fogg on company policy matters relating to management, marketing, and public relations. Succeeding Kneeland as president of Consolidated's subsidiary, the Consolidated Vacuum Corporation of Rochester, N.Y., is another Caltech grad, *Hugh*

**Keeping the
"kinks" out of
an "industrial
muscle"!**



Talk about engineering "brainteasers" — here was one for the books!

Design a one-ton capacity hoist capable of lifting a full load thirty feet a minute, three shifts a day, every day in the year. Make certain that the power you require will be concentrated on lifting and not shared in overcoming friction. Be sure, too, to provide for smooth, steady performance with a minimum of maintenance. This was the problem facing Manning, Maxwell & Moore's team of electric hoist designers. They solved a big part of it by installing dependable, Fafnir Ball Bearings at every possible source of friction — on the rope drum, trolley assembly, gear shafts, and other critical turning points.

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NOTICE

A motion-sound picture dramatizing high points in the manufacture and use of Fafnir Ball Bearings is available to engineering classes. Write for details.

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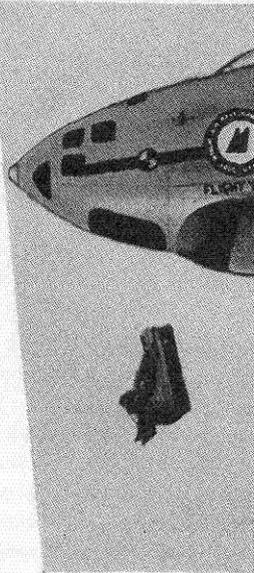
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Personals . . . CONTINUED

F. Colvin, '36. Hugh, who is also vice-president and general manager of Consolidated, will continue to make his home in Pasadena, commuting to Rochester when necessary.

Newman A. Hall, PhD, who has been at the University of Minnesota since 1947, and where he was serving most recently as Professor of Mechanical Engineering, has accepted a position as Assistant Dean in charge of the Graduate Division of the College of Engineering of New York University. Newman, his wife, and two children, are now making their home in New Hartford, Connecticut.

1939

Fred Hoff has completed the MBA course at the Harvard Graduate School of Business Administration, and is now chief engineer of Basic Vegetable Products, Inc., a vegetable dehydrating company in Vacaville, California.

1940

Clark W. Gould, MS, PhD '42, has been appointed a research associate in the analytical chemistry unit at the General Electric Research Laboratory in Schenectady, N.Y. He was previously a research associate in the General Aniline and Film Corporation at Easton, Pennsylvania.

1941

Gilbert A. Jones has two major events to report. First, the birth of a daughter, Carol Elizabeth, last February, and secondly, receipt of his MS in EE from USC in June. Gil has been working for the Metropolitan Water District in Los Angeles for the past two years.

Bill Schuberg, Commander, USN, received his MBA from the Harvard Graduate School of Business Administration, and is now on duty as a technical officer at Point Mugu, California.

1942

Carol Veronda has been transferred to Gainesville, Florida, by the Sperry-Rand Corporation, to head the Engineering Development Department of Sperry's new microwave tube plant. Carol likes Florida fine so far, but is reserving final judgment until he sees what takes the place of smog there. The Verondas have two sons; Bill, 9, and Chris, 3.

1944

Knox Millsaps, PhD, will be a visiting professor in mechanical engineering for the 1955-56 academic year at MIT. Since 1947 Knox has held faculty positions at Ohio State University in aeronautical engineering, and at Alabama Polytechnic Institute in physics. Most recently he has been chief of the Applied Mathematics Research Branch at the Wright Air Development Center, Wright Patterson Air Force Base, Dayton, Ohio.

1945

Robert Schmoker was discharged from the Navy last summer and is now employed as a sales engineer with the American Blower Corporation, working out of the San Francisco branch office. Bob and his wife have two daughters, and are living in Berkeley.

Burton L. Henke, MS, PhD '53, has received a promotion to Assistant Professor of Physics at Pomona College. He has also been awarded a Guggenheim Foundation Fellowship for the second semester of 1955-56, at which time he will visit Spain and Sweden.

William R. Burns joined the staff of the National Life Insurance Company last June as a member of the personnel and purchasing department, primarily concerned with office operations planning. Before joining National he was with the Homesteaders Life Company of Des Moines, Iowa, where he had been directing personnel and office administration for the past five years. Bill, his wife, and two children now make their home in Montpelier, Vermont.

1947

Joseph Rosener, manager of manufac-

turing control for G. M. Giannini & Company in Pasadena, reports that his second child, Doug, was born last January. The Roseners' daughter, Lynn, is now 2½.

1948

Byron L. Youtz has started his third year at the American University of Beirut, Lebanon, as Assistant Professor of Physics. Byron enjoys the teaching very much, and takes every opportunity to do as much travelling as possible. "Last September Margaret Elizabeth escorted us into the happy state of parenthood," Byron writes. "She has been most cooperative in accompanying us on some very interesting journeys into Egypt, Jerusalem, Damascus and Aleppo. We were brave enough this past summer to try a two month trip in Europe, with the International School on Nuclear Physics, Lake Como, as our principle objective. We shall probably see some of the Tech graduates when we return to the U. S. next summer."

George W. Roe, Jr., at last report, was in Japan—one of his stops on a leisurely three-year world tour.

1949

Dennis V. Long, MS '55, has accepted a

position as civil engineer with Harrison and Woolley, consulting engineers of Santa Ana, California.

David Hogness is now at Washington University in St. Louis, Missouri, working in the Department of Microbiology. Dave made this transfer from the New York University Medical School, where he was doing research work.

Gene D. Six and wife Phyllis announced the arrival of Brian David on July 19.

1950

David B. MacKenzie reports the following reunion, which took place on a street in Paris last month. "*Wes Hershey*, in Paris to attend the YMCA Centennial, and *Bob Crichton*, '50, on summer vacation from his teaching job at the Friends Boys School, Ramsallah, Jordan, were sipping aperitifs at a sidewalk cafe when along came *Martin Walt*, '50, stopping in Paris on his way to Geneva as a delegate to the conference on the peaceful uses of atomic energy. All three ran into me wheeling my daughter, Kathy, born April 20,

"We are still part of Catex's petroleum exploration group in Paris, but expect to be transferred to greener (blacker?) fields in the new year."

1952

Thomas W. Hamilton was married last August to Barbara Joanne Stunden, of Sierra Madre, California, and they now make their home in Arcadia. In the wedding party were three of Tom's Tech classmates: *Frank Ludwig*, '53, *Moises Lery*, '52, and *Richard Jaffe*, '53.

1953

Robert D. Inglis and *Georgia Wagner*, of Pasadena, announced their engagement in August. Wedding plans are going to wait, however, until Bob gets through serving his Army hitch. At present he is stationed at Ft. Monmouth, New Jersey.

Donald C. Curran, Lt. Commander, USN, has been flying P2V Neptune Patrol Bombers at Barber's Point Naval Air Station, Oahu, Hawaii, ever since graduation from Tech.

Charles E. Benjamin was married in June to Louise Lowenthal of Highland Park, Illinois. Chuck and his bride are now living in Pittsburgh, where he is working as an engineer in the device development group of Westinghouse's newly formed Semiconductor Department.

Robert E. Gillingham is another '53 man who gave up his bachelor status in June. Bob reports, "I am still at Northrop Aircraft in Hawthorne. Dorothea Ellenor Dixon of Occidental became my bride June 12. We are living in the veteran's housing on the Oxy campus. I ushered at the wedding of *Gordon Zentner*, '54, to *Elizabeth Walker* on the 26th of June. They are now living in Texas."

Now is the time to get the

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