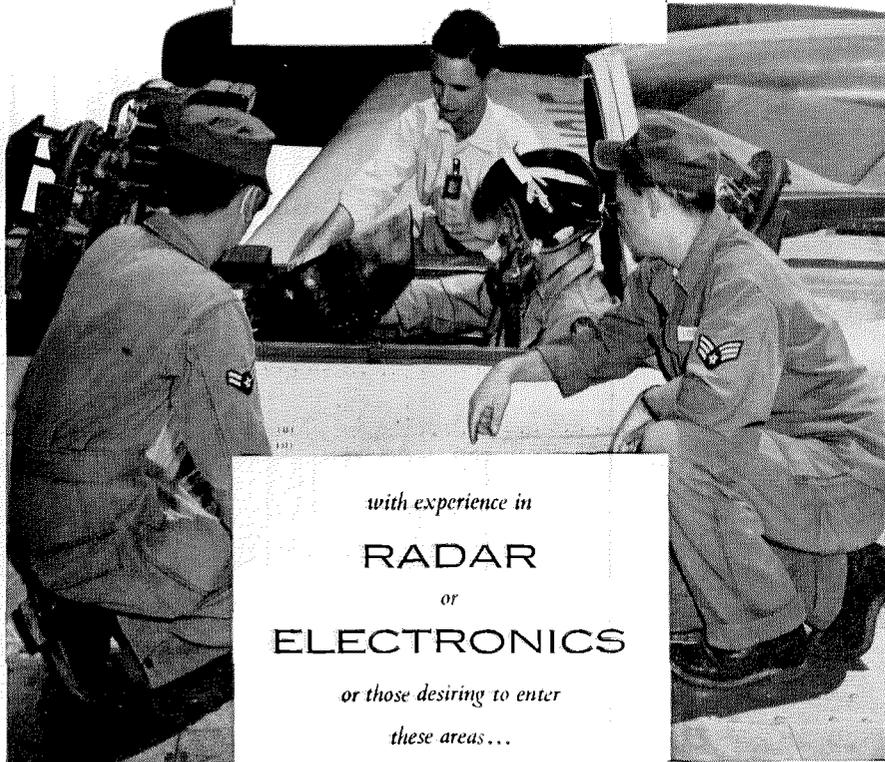


ELECTRICAL
ENGINEERS
or
PHYSICS
GRADUATES



with experience in
RADAR
or
ELECTRONICS
or those desiring to enter
these areas...

The time was never more opportune than now for becoming associated with the field of advanced electronics. Because of military emphasis this is the most rapidly growing and promising sphere of endeavor for the young electrical engineer or physicist.

Since 1948 Hughes Research and Development Laboratories have been engaged in an expanding program for design, development and manufacture of highly complex radar fire control systems for fighter and interceptor aircraft. This requires Hughes technical advisors in the field to serve companies and military agencies employing the equipment.

As one of these field engineers you will become familiar with the entire systems involved, including the most advanced electronic computers. With this advantage you will be ideally situated to broaden your experience and learning more quickly for future application to advanced electronics activity.

Positions are available in the continental United States for married and single men under 35 years of age. Overseas assignments are open to single men only.

Hughes Field Engineer William H. Scott instructs Air Force personnel in connection with Hughes equipment.

Scientific and Engineering Staff

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*Culver City,
Los Angeles
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Assurance is required that relocation of the applicant will not cause disruption of an urgent military project.

PERSONALS

1920

George O. Suman, who has spent many years with the Tide Water Associated Oil Company, was appointed general superintendent of their coastal district last July, with headquarters in Ventura, California. "I find the people and the climate most agreeable," George writes. "And since coming to Ventura have a new wife, Sally. Also became a member of the Satroy Country Club and am busy chasing the elusive golf ball at times."

1925

Neale D. Smith has been living in Santa Rosa, California, for the last year and a half, and is employed as county administrator of Sonoma County. Neale remarks that his three grandchildren make him aware of just how quickly time passes by.

1926

Robert Burt, PhD, and his wife Eleanor, have been traveling for the past year—first through Australia and New Zealand, and now in Europe. "... We followed spring south 3,000 miles in November from the Great Barrier Reef of Northern Australia to the southern tip of Tasmania," Bob writes. "For three months we explored New Zealand, 5,000 miles in our Holden car. First, the North Island with its famed Bay of Islands... jungles of tree ferns and giant Kauri trees, said to be older and larger than our Sequoias; Auckland... and the unique thermal region of Rotorua.

"Flying back to Australia we boarded the SS Orsova for Europe on March 14th. After a day of sunshine in Naples, we disembarked at Marseilles for six weeks on the Riviera."

1928

Edward E. Tuttle has been elected a director of the Hycon Manufacturing Company of Pasadena. Ed, who is a partner in the Los Angeles law firm of Tuttle, Tuttle and Taylor, is the legal counsel for Hycon. He is also executive vice president of the Essick Manufacturing Company, which makes construction equipment and vapor air conditioners.

1933

Robert R. Mead was recently appointed district manager for the Ethyl Corporation, with headquarters in Dayton, Ohio.

1939

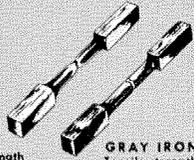
Ronald Connelly, who is living in San Francisco, writes: "I have been in the Bay Area for so long now (15 years) that I feel as though I were a native. The last 10 years have been occupied with work at the San Francisco Naval Shipyard as supervisor in electronics design. A baby girl born March 11th has pushed other activities such as house-building and square dancing to a very low priority for my wife, Barbara, and me."

FACTS THAT FIGURE in lower costs

FACT:

Steel is two to three times as strong as gray iron.

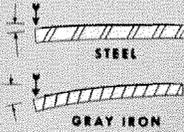
STEEL
Tensile strength
61,800 psi



GRAY IRON
Tensile strength
20 to 30,000 psi

FACT:

Steel is two and one half times more rigid than gray iron.



STEEL

GRAY IRON

FACT:

Steel costs only a third as much as gray iron.



STEEL

GRAY IRON

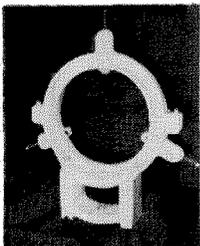
AND SO... by manufacturing your products from welded steel, costs can be reduced an average of 50%.

SUCCESSFUL DESIGNS MUST FIRST BE LOW IN COST

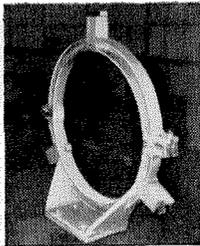
The first demand on every design is low cost to meet price competition. Therefore, as a product engineer you must be sure your designs are economical to manufacture and use the fewest pounds of the lowest cost materials that will do the job.

Study the facts in the above chart. They show you how drastic savings in materials can help you cut the costs of manufacturing machinery up to 50%.

Here is a machine part... a steady rest for a machine tool. By using welded steel construction, the designer has cut down weight, yet has made the component stronger and more rigid to build accurate alignment. The cost of producing the welded steel steady rest is 36% less.



Original Design
of steady rest



Present Steel Design
of steady rest

Data on Designing for Steel is available in Engineering Bulletin and Handbooks by writing

THE LINCOLN ELECTRIC COMPANY
Cleveland 17, Ohio
The World's Largest Manufacturer
of Arc Welding Equipment

PERSONALS . . . CONTINUED

1940

John C. Kupter writes from Claremont, Calif., that he is planning to leave the U. S. Geological Survey this summer to teach geology at Louisiana State. John and his wife now have two children—their new boy having arrived last February.

1941

Dr. Harold K. Fink, MS, a psychoanalyst in private practice, has a new book, *Long Journey* (Julian Press)—the true story of a troubled young man's psychoanalysis. Last year Dr. Fink published another book, *Mind and Performance*, a comparative study of learning of mammals, birds and reptiles. He has been in private practice since 1945, and presently conducts classes for executives in industry at the Brooks Psychological Institute.

1942

Pichel W. Pichel has joined Solar Aircraft as an experimental engineer. Before joining Solar, he had been with the Aerojet-General Corporation in Azusa for more than six years, and had served as project engineer for the past three years. The Pichels have a daughter, Robin, 10, and live in Rancho Santa Fe, California.

Peter L. Nichols, Jr., PhD, is now a section chief at Caltech's Jet Propulsion Lab. Peter is in charge of a newly created section devoted to "Solid Propellant Chemistry." He has been at JPL since 1950.

1943

William H. Halpenny and John A. Zivic, '44, were recently appointed project engineers for the Hunter Engineering Company of Riverside, California. For Bill this means a return to his home town, as he went to school in Riverside. Before joining Hunter he was project engineer for the Fluor Corporation of Pasadena, and had to do quite a bit of traveling. Last year he spent several months each in Alaska, South America, and Canada.

John has been with the Naval Ordnance Test Station at Inyokern, California, ever since his release from the Navy, where he held the rank of lieutenant commander.

1944

Ruben F. Mettler, MS '47, PhD '49, was married early in May to Donna Jean Smith of National City, California, and they are now living in Brentwood. Ruben joined the Ramo-Wooldridge Corporation of Los Angeles last March as director of Ad-

Career Opportunities

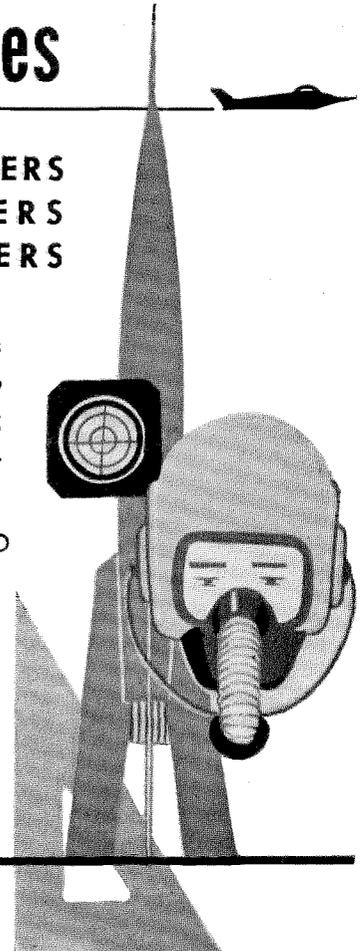
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- ELECTRICAL ENGINEERS
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vanced Systems Planning and director of the Systems Engineering Staff.

1946

Richard Lagerstrom is working for his PhD in electrical engineering at Stanford, and if all goes as planned he will be receiving the degree this year. Dick and his wife Bobbie have a two-year-old son, Jeffrey, and are expecting another family addition in November.

1947

Roderick K. Clayton, PhD, will be spending the summer at the Marine Biological Laboratory at Woods Hole, Massachusetts, studying on a Lalor Fellowship.

1949

William N. Harris just received his commission as an Ensign in the U. S. Navy at the Newport, R.I., Officer's Candidate School. Bill will now be serving three years in the Civil Engineers Corps, starting with two months of school at Port Hueneme, California.

Kenneth W. Gardiner received his MS from MIT last year, and is now working for the Stanford Research Institute of Menlo Park, California. Ken was married in July, 1953, and now he and his wife have a nine-months-old daughter.

Hardy C. Martel and his wife Jean became parents for the first time when Jeffrey Charles was born May 9. Hardy is an instructor in Electrical Engineering here at Caltech.

1950

Edward M. MacKevett, MS, writes: "Since leaving Caltech I've been employed as a geologist with the Mineral Deposits Branch of the U. S. Geological Survey. The past few years I've worked mainly in Inyo County, California, principally in the Darwin Quadrangle. This summer I'm scheduled to map in the southern Sierra Nevada. My wife and I are living in San Jose and have a daughter, Patricia Ann, 2 years plus."

Edsel A. Worrell is now working for the Westinghouse Electronics Division at Baltimore, Maryland. He was married last April to Louise Neuhaus in Baltimore.

1951

Richard Brewer was employed as a propellant chemist at Aerojet right after graduation, and he stayed with them until 1953, when he decided to work on his doctorate at the University of California in Berkeley. Right now all Dick's plans have been interrupted by a two-year hitch in the Army.

William Roberts, MS, and his wife Lorraine, report the birth of "Our First Little Rockhound"—son Randolph, who arrived in February.

1952

Donald Stewart, MS '53, is on military leave from Standard Oil of California in San Francisco, where he was employed in

the engineering department. Don's going to be in the Army until July, 1956, but what with a 40-hour week, off-quarters living, and allowances, he says the Army is almost bearable. He's serving with the Headquarters Material Command in Baltimore.

1953

Duane Marshall is living in Menlo Park, California, and writes: "Same job at Hewlett Packard. Going to Stanford part time . . . get MS in June. No school plans for next year. April 13, '55, we had a boy, named Lance. Other two children, Scott, 3, and Dana, 2, are doing fine."

"Bought a house in Los Trancos Woods . . . a genuine community of civilized, moonshine mountaineers. Have long since sold my assorted motorcycles, but am still sticking to old cars for awhile. During the summer I bicycle the 9.1 miles to work."

"Recently I was thrown off the bike on a bad road and bridge—broke my arm and still have it in a cast. Just got my foot out of a cast—had some missing ligaments replaced in my ankle."

John Wilson came back to visit the Caltech geology department a few months

ago, and reported that he had just completed his requirements for an MS in geology at Kansas University. He now plans to work as an independent consulting geologist in the vicinity of Fremont County, Wyoming.

1954

Francis W. Joyce is returning to Los Angeles this month to begin working for Dames & Moore, right after he receives his MS from the Harvard Grad School. Francis and his wife have two boys, the youngest born a week after he graduated from Tech. "I have been seeing many Tech men at Harvard," Francis writes. "About 10 people of the class of '54 are here, plus others from earlier classes."

Gordon Zentner sends in the following: "Working for Shell Oil Company, presently in Bakersfield, California. Have been in Nevada, Utah, Arizona in the past two months. Was in Ventura, California, last winter with *J. T. Billings, Hans Mol, Bruce Watkins, Bob Olson*, (all class of '54), and *Leon Michaelson, Pat Fazio* and *Wahi Ghauri*, (all class of '53). To be married to Elizabeth Walker of Glendale on June 26th."

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