

# THE CHALLENGE OF LOWER COSTS PERSONALS

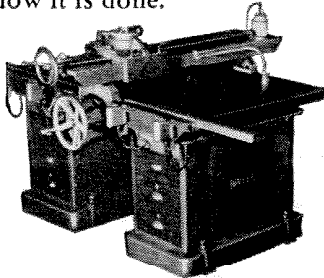
**T**HE engineer who knows how to cut production costs commands the attention of manufacturers everywhere.

Cutting production costs starts with knowing how to use the least costly materials that will both handle the loads and can be fabricated economically.

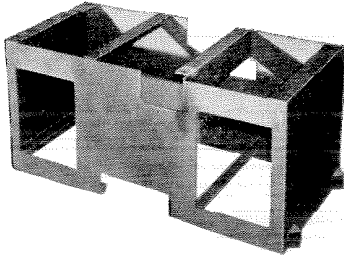
The best material for most products is . . . steel. Here is why:

1. Steel is 2 to 3 times stronger than gray iron.
2. Steel is 2½ times as rigid as iron.
3. Steel costs a third as much per pound.

Utilizing the superior properties of steel to best advantage, material costs can be cut as much as 85%. This means that with today's fast, efficient welding methods, most machine designs can be fabricated with overall reductions in cost averaging up to 50%. Here is an example of how it is done.



Original design made from gray iron. Requires reassembly and realignment in customer's plant after shipment.



Present steel design costs half as much . . . weighs less yet is 40% more rigid than original cast design.

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1917

*Paul D. V. Manning* was recently made an honorary member of the American Institute of Chemists. After receiving his MS at Caltech, Paul got his PhD at Columbia University, then spent the years from 1925 to 1941 in various industrial positions on the West Coast, and lectured in chemical engineering at Stanford on the side. In 1941 he became director of research of the International Minerals and Chemical Corporation in Chicago, and he has been vice-president of the firm since 1943.

1924

*Edgar N. Layton* and his family moved to Concord, California, last year, when Ed was transferred by the Fluor Corp. to serve as assistant manager of Fluor Maintenance, Inc. He writes: "We like the Bay Area and were glad to get out of Smogtown. Have had the same wife, Anne, for 30 years, a son, 12, in school locally, and a daughter who has been married two years, living in San Jose. We recently learned that we will soon be grandparents. Have enjoyed meeting many old-time alumni at the weekly luncheons in San Francisco, and at *Bob Bowman's* ('26) annual alumni barbeque in Concord in September."

1929

*Reymond J. Kircher*, formerly with the Bell Telephone Laboratories, has joined the technical staff of the Systems Laboratories of Hughes Research and Development in Culver City, California.

1931

*John R. McMillan* is now executive vice-president of the Monterey Oil Company in Los Angeles. He was formerly vice-president of the Fullerton Oil Company of Tulsa, which has now become a part of the Los Angeles organization.

1932

*Edward C. Keachie*, associate professor of industrial engineering at the University of California in Berkeley, is now in Darmstadt, Germany, for a year as a Fulbright instructor at the Technische Hochschule. His wife and three children (Stephen, 14, Douglas, 10, and Pamela, 4) are with him. Ed says he expects to gather more material while in Germany for his study of industrial firms' methods of analysis of plant and equipment spending.

1932

*Clark Goodman* is taking a leave of absence from MIT to become assistant director of the Reactor Development Division of the Atomic Energy Commission. Now on a part-time basis, he will probably move to Washington about the beginning of February. "During the past year," Clark says, "my wife and I each had Fulbright Fellowships in Japan. We had a wonderful experience and feel that we learned to understand and appreciate the Japanese people. Our children attended an all-Japanese school and certainly

did their share in furthering international good will."

*William Shockley*, who joined the Bell Telephone Laboratories in 1936, and has been director of transistor physics there since 1954, is now with Beckman Instruments, Inc., in Fullerton, California. He is building a new research group to further development of the semiconductors from which transistors are made.

1933

*Robert S. Rose, Jr.*, PhD, has been named assistant director of the chemical research department of the Atlas Powder Company in Wilmington, Delaware. Bob has been with Atlas since 1935.

1933

*Carlton R. Worth*, PhD, has been appointed assistant professor of mathematics at Ithaca College, New York.

*Ralph Hultgren*, PhD, professor of metallurgy at the University of California, will be at Caltech from February until June next year on a sabbatical leave. While here he will study metallic chemical bonding with Dr. Pauling. Ralph's son, Neilen, has enrolled at Caltech this fall as a graduate student in chemistry.

1934

*G. Sidney Smith*, director of research for Carlon Products, Inc., in Cleveland, writes that, "We are moving into a newly built home in Kent with our sons, 16 and 14, and daughters, 11 and 8. Busy with Soap-Box-Derby clinics, Boy Scouts, A.S.T.M., business trips, and sons' hobbies of radios and chemistry. Spent an evening recently with roommate *Johnny Little* ('34) of Sandusky, Ohio, after 21 years!"

1935

*Hsia-Chien Huang*, MS, PhD '38, an escapee from Red China, is now with the American Institute of Aerological Research in Denver, Colorado. His one regret is that his eldest son is still in China, although his wife (a former high school teacher in China) and his other two sons are here with him. He was head of the department of meteorology in the National Central University before the political changes in China, and established the first nationwide weather reporting system, the Central Weather Bureau of China.

*Oliver C. Dunbar* reports that, after nine and a half years in the U.S., he's "being shipped back overseas, Army Signal Corps, to head the Engineering Branch, Communication Division, at Camp Zama near Tokyo, Japan. This will mean a three-year tour of duty so my family and I probably won't be back until 1959."

*Wallace Johnson*, president of Up-Right Scaffolds, writes from Berkeley, Calif., that he combined a recent pleasure trip to Europe with business and arranged licensing agreements with a company in

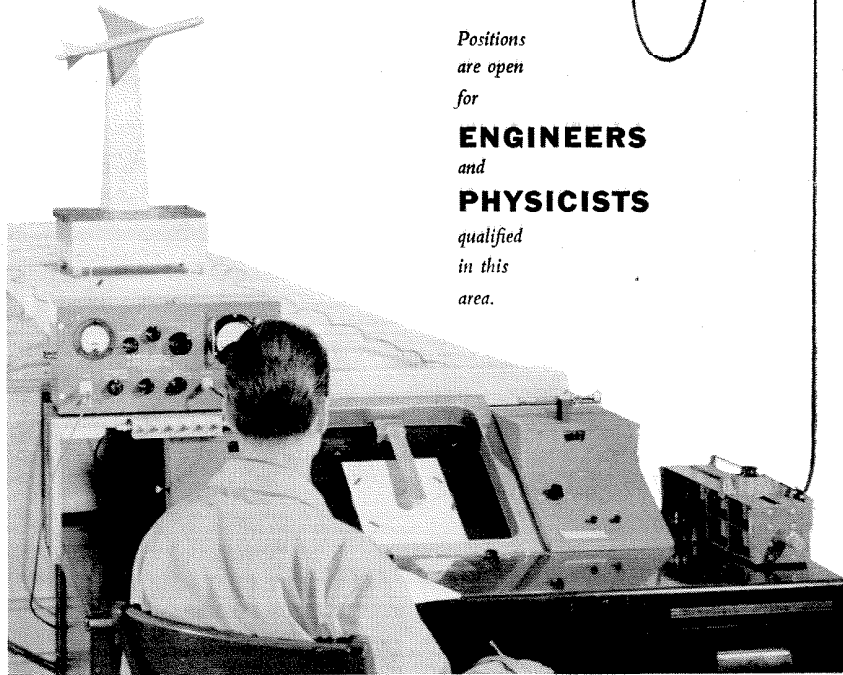
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Instrumentation is developed for new measuring equipment to meet needs of the program. This has included development of automatic impedance and antenna pattern recorders, microwave power supplies stabilized in amplitude and frequency, microwave circuitry, and microwave applications of ferrite devices.

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California

## Personals . . . CONTINUED

England and one in Switzerland to manufacture and sell his aluminum scaffolds.

1936

Frank J. Malina, MS '35, PhD '40, had a one man show in Paris recently of his electro-paintings. He writes: "You might say I am trying in a small way to bridge the gap between science and art. Last year the city of Paris purchased one of my wire screen transparencies, which was both encouraging and satisfying to one who has strayed a long way from rocket research."

F. L. Johnson, manager of physical research and development of the Sun Oil Company in Dallas, has been appointed director of production research and development for the same organization.

1937

John R. Schultz, PhD, has been made chief geologist of the Manu-mine Research and Development Company in Reading, Pa. He had been with the U. S. Engineers in Vicksburg, Miss., for a number of years before this change.

1938

Maurice J. Schlatter, PhD '41, writes that he is "employed at the California Research Corporation in Richmond, and now have a son, four months old. Janie, 12, and Susan, 9, are wholeheartedly exercising their maternal instincts in helping their mother and father bring up Ronald Maurice 'properly.'"

Carlton L. Horine, who has been working at the Naval Ordnance Test Station at Inyokern, has now joined the development department of Brea Chemicals, in Brea, California, as senior process engineer.

1939

Edmund J. Pinney, PhD '42, is associate professor of mathematics at the University of California at Berkeley.

1940

Mark Muir Mills, PhD '48, is now working at the Livermore site of the University of California Radiation Lab as head of the theoretical division, and is also teaching nuclear engineering at Cal. He and his wife, Polly, have two children, Mark John, 9, and Ann, 6.

Miller W. Quarles, Jr., MS '41, resigned his position as chief geophysicist and Gulf Coast manager of the Precision Exploration Company in June. He is now with Ralph E. Fait, Inc., in San Antonio, Texas, as geologist and geophysicist.

Robert S. Neiswander, MS '46, PhD '54, is now a member of the technical staff of the electronics tube laboratory of Hughes Research and Development. He was formerly with Aerojet as an engineer.

1942

Robert A. Spurr, PhD, formerly associate professor of chemistry at the University of Maryland, is now a member of the research laboratories at Hughes Aircraft in Culver City, California.

**Personals . . . CONTINUED**

*Philip O. Johnson*, MS '43, has joined the Semi-Conductor Laboratory at Hughes Aircraft. He had been working at North American Aviation.

**1943**

*Amasa Stone Bishop* is heading the Atomic Energy Commission's Sherwood Project in Washington, D.C., which is doing research on the conversion of sea water into usable energy.

*Raymond Homer Simpson*, MS, died of cancer on March 25 at his home, 105 Highland Avenue Drive, Lamesa, Texas. He was a wholesale agent for the Humble Oil and Refining Company. Ray is survived by his wife, Evelyn Storey Simpson, two sons and one daughter.

*Herbert A. Lassen*, PhD '50, who is with Hughes Aircraft as a senior staff engineer, is teaching a course in advanced kinematics of mechanisms at the UCLA Engineering Extension Division in Los Angeles.

*Richard M. Lemmon*, MS, is a chemist in the radiation laboratory at the University of California in Berkeley. He is also serving as secretary of the California Section of the American Chemical Society.

*Alexander C. Ridland* is now with Solar Aircraft as an experimental engineer in their gas turbine project in San Diego. Before going to Solar, he had worked with Convair in design engineering. Alex, his wife, and two children live in Rancho Santa Fe, near San Diego.

**1946**

*George R. Watt* has been named product planning coordinator for the Consolidated Engineering Corporation in Pasadena. George has been with Consolidated for two years as a market research engineer.

*Donald Gray Furst*, MS '48, has been transferred to Phoenix as an assistant project engineer in charge of development of two gas turbine engines for the AirResearch Manufacturing Company.

*John O. Nigra*, MS, is back at Tulane University after spending a year in Iraq on a Fulbright Fellowship.

*Ali Bulent Cambel*, MS, has received a Fellow Membership in the American Rocket Society. He is an associate professor of mechanical engineering at Northwestern, in charge of the university's gas dynamics laboratory.

**1947**

*David L. Douglas*, PhD '51, recently transferred from the chemistry section of the Knolls Atomic Power Laboratory, operated by General Electric for the AEC, to the G.E. Research Lab (chemistry research department), in Schenectady.

*Telford Oswald*, MS, PhD '51, senior staff engineer in the guided missiles division of Hughes Aircraft, is lecturing in intermediate fluid mechanics this fall at UCLA.

**1948**

*Lt. Col. Edward N. Hall*, MS, has received the Robert H. Goddard Memorial Award from the American Rocket Society for his development of liquid propellant rockets. Ed is supervisor of propulsion at the Western Development Division headquarters of the Air Research and Development Command in Inglewood, California.

*Abner Kaplan*, MS '49, is now working in the aeromechanics group of the Guided Missile Research Division of the Ramo-Wooldrige Corporation in Los Angeles. The Kaplans have two children, Eric David, 4, and Ellen Louise, 1.

*Donald P. Wilkinson*, who was formerly with the technical staff of the Propulsion Research Corporation, has joined the sys-

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*David R. Viglierchio*, PhD, is at the University of California in Davis, Calif. His work is concerned with plant nematology.

*Charles J. Brokaw* is doing graduate work at the University of Cambridge in England.

*Ernest A. Dernburg* has been awarded a graduate assistantship at UCLA and is majoring in zoology.