Speeding up our national road-building program is the goal of this design by Russ Henke of Elm Grove, Wisconsin. His behemoth of a machine literally chews up unmapped earth, compacts it with asphalt or macadam, stabilizes it, and lays a ribbon of paved road behind as it rumbles along! Crew and engineers ride in an air-conditioned cabin, and monitor the whole process by control instrumentation.

Tomorrow's roads may be squeezed out like toothpaste, but outstanding ideas for tomorrow are still produced in the old-fashioned, painstaking, human way. And only professionals know how the best in drafting tools can smooth the way from dream to practical project.

In pencils, of course, that means Mars, long the standard of professionals. Some outstanding new products have recently been added to the famous line of Mars-Technico push-button holders and leads, Lumograph pencils, and Tradition-Aquarell painting pencils. These include the Mars Pocket-Technico for field use; the efficient Mars lead sharpener and "Draftsman" pencil sharpener with the adjustable point-length feature; Mars Lumochrom, the color-drafting pencils and leads that make color-coding possible; the new Mars Non-Print pencils and leads that "drop out" your notes and sketches when drawings are reproduced.

Personals

1929
Lee R. Brantley, MS, PhD '30, chairman of the department of chemistry at Occidental College, was a guest lecturer in the Lebanon Valley (Pennsylvania) College department of chemistry last month. He gave two lectures—"The Extracurricular Training of a Chemist" and "Surface Chemistry"—and conducted a research conference.

1932
John L. Cox, associate head of the engineering department at the Naval Ordnance Test Station in China Lake, has a new daughter, Margaret Elizabeth, born last October 27. John's two older children live in Pasadena and the girl, now 18 years old, expects to be married sometime this spring. John also reports that he has been chairman of the China Lake Chapter of the American Ordnance Association for the past two years.

Euclid V. Watts has been appointed manager of producing for Socony Mobil in New York. He has been with the company since 1936. The Watts', who live in Darien, Conn., have three children—Joanna, Robert and Charlotte.

Paul G. Burman writes that he is now in his twentieth year with the American Bosch Arma Corporation in Springfield, Mass. "My present position is consulting mechanical engineer in the advanced engineering section. In addition to advisory service on diesel fuel injection, I am involved in projects on gas turbine injection, liquid propellants, hydraulic controls, and missile components.

"My son, Bruce, is now a junior in electronics at Lowell Tech, and my daughter is a senior in high school. My spare time is spent skiing and sailing."

Karl Hegardt is now outside plant engineer and personnel supervisor in the chief engineer's department of the Pacific Telephone Company in Los Angeles. He is serving this year as director of the Pacific Telephone's Executive Conference in Palo Alto. The Hegardts' second son, William, was born last October.

1933
Philip C. Efromson, formerly a partner of the Calidyne Company in Winchester, Mass., is now treasurer. The company has become a subsidiary of Ling Electronics in Culver City, Calif. With the addition of another boy last October, the Efromson family now consists of three sons.

Lee Carleton writes: "I'm still doing scientific work at the Aerojet General
Corporation in Azusa, in an interesting field covering rocketry and high-energy radiation. I was remarried last year, thereby adding two fine teen-agers (boy and girl) to my original one son. We recently returned from a delayed honeymoon at the Mardi Gras in Mazatlan."

1938

Harper Q. North writes that, since 1954, he has been president and chairman of the board of Pacific Semiconductors, Inc., in Los Angeles, a subsidiary of Thompson-Ramo Woodrifice. He has also been made a fellow of both the American Physical Society and the Institute of Radio Engineers.

1939

Paul L. Smith has been with Douglas Aircraft for 20 years now and is, at present, "chief cook and bottle washer of the new office in St. Louis." He writes: "Our daughter, Susan, was married last summer and is now living at Cape Canaveral; our son, Stephen, is a junior in high school; and Chuck is in the 7th grade.

1940

Victor Wouk, vice president of research and development at Sorensen & Company in South Norwalk, Conn., brings us up to date with: "In July 1956 I sold Beta Electric Corporation to Sorensen & Co., Inc., and at the time of sale it had grown from a two-man operation in 1946 to the world's largest exclusive manufacturer of high voltage power supplies. For this I bow very deeply in the direction of the high voltage labs of Caltech and the leadership of Professor Royal W. Sorensen."

"The relief from many administrative details at Beta has allowed me to be more active in community activities such as: Board of Directors of the 92nd Street Y (the largest in the country), chairman of the New York Commission on Hebrew Religious School Education, and interviewing Caltech applicants, one of the most enjoyable extracurricular activities in which I have ever engaged."

1941

Paul Lieber, MS, PhD '51, was appointed professor of engineering science at the University of California in 1956, and in 1957 was awarded a Fulbright lectureship at the Israel Institute of Technology at Haifa, to conduct research in field theory and advise on programs of studies in engineering.

"We found Israel a very interesting country," Paul writes. "The internal and external problems facing her are formidable and are being met with unflagging courage by some of her people. From a practical standpoint, however, these problems can be realistically met only with the support of a superior technology. To this end Israel must provide maximum opportunity and facilities for training and employing her outstanding talent in technology."

"As for our family, we have five children — Michael, 16; Leonardo, 11; Joseph, 9; Victoria, 7; and Jonathan, 4."

1942

Charles Rutherford writes that "with the exception of a three year period in Washington, D.C., from 1944-47, we've been in the local area. In 1950 I founded my own company in Culver City, and after a short discussion at the board of directors meeting (I'm chairman of the board and my wife and mother are the other members) the company was named the Rutherford Electronics Company. I was also elected president of the company — by a coincidence. After 8 years, we're making a living at it with the help of about 50 employees. I've also got four children to help spend the paycheck."

1944

Phillip B. Smith writes that he's settled for a while in Utrecht, Holland, as group leader of the nuclear physics section at the University. "For the past year and a half," writes Philip, "I've been catching up on my field of work after six years of complete isolation from physics in Brazil."

Joseph M. Phelps, MS '47, has recently gone into partnership with William Rucker as Associated Business Consultants. Located in Pasadena, the new outfit designs and writes technical books, produces industrial films and filmstrips, and takes aerial and industrial photographs. For a hobby, Joe has a boat and he and his family (wife, daughter, and two sons) are all interested in water skiing.

1946

Harold Lambertus, MS, is now general manager of the newly created nuclear fuels department of the Spencer Chemical Company in Kansas City, Mo. He was formerly vice president of the American Bearing Corporation, a division of the National Lead Company. The Lambertuses and their two children will now be living in Kansas City.

1947

William T. Russell, MS, PhD '50, director of the electromechanical laboratory at Space Technology Laboratories, Inc., is now a member of the committee on control, guidance, and navigation for the National Aeronautical and Space Administration.

Jerry Donohue, PhD, professor of chemistry at the University of Southern California, has received a $57,200 three-year grant by the National Science Foundation. He will spend his first year at the Swiss Federal Institute of Technology in Zurich, as a senior postdoctoral research fellow. His research project continued on page 40.
Inner fin is the patented Dunham-Bush development which has revolutionized the design of heat transfer equipment. It has introduced a basic new concept of heat transfer engineering, permitting units of smaller, lighter construction.

Engineering developments such as inner-fin tubing are commonplace at Dunham-Bush...where progress in heating, air conditioning, refrigeration and specialized heat transfer products is an everyday occurrence.
Personals . . . continued

Douglas.

advance in his profession.

for the engineer who wishes to

scope, the multiplying super-

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areas have created a continu-

promotion opportunities at

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It stands to reason that the

biggest field for advancement

lies where the biggest programs

involving advanced technology

are under way.

At Douglas, massive missile,

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both military and commercial

areas have created a continu-

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scientists with backgrounds

outside as well as in the avion-

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As these projects grow in

scope, the multiplying supervi-

sory and executive openings

are filled by Douglas engineers

visually and executive openings

as well as in the avion-

ics, aircraft and missile fields.

For further information,

write to Mr. C. C. LaVene,

Douglas Aircraft Company, Inc., Santa Monica, California.

Section B.

Investigate the outstanding

promotion opportunities at

Douglas.

that he will be married on June 7, in

Stockton, to Marianna Tuttle, a speech

therapist for the Azusa School District.

They originally met at Asilomar in 1956

when they were elected as co-chairmen

of the Regional Student YM-YWCA.

Frank is a design engineer for the L.A.

County Sanitation District.

Curt Johnson, MS '55, is now with the

Hughes Research Laboratories in Culver

City where he is working on low-noise

parametric devices. Curt got his PhD

from Stanford in 1958. The Johnsons

and their two children are living in the

Palos Verde area.

1956

Samuel R. Phillips, MS '57, writes that

"after graduating, I joined Jim Koontz,

'56, and Dan Chilton, '56, in the training

program of the Joy Manufacturing Com-

pany, makers of mining machinery with

headquarters in Pittsburgh. After 7

months and 10,000 miles, I wound up as

half of the two-man R&D department

of the Baush-Ross oil tool division in Hous-

ton. Early this year I started working

for Cosmodyne Corporation in Manhat-

tan Beach, a six-month-old company

which designs auxiliary power units for

space vehicles. I see a good deal of Ross

Brown, '56, and Gil Beebower, '55. Ross

is one of the original hands at Cosmo-

dyne and so is Dan LeMay, '51."

Ted Johnson has completed Harvard

Business School and is now working as a sales engineer for the Digital Equipment

Corporation, a new company in May-

nard, Mass.

1957

Major S. H. Carpenter is now Marine

Corps liaison officer at NOTS in China

Lake. After getting his degree at Cal-

tech, Stan and his family moved to Edon-

ton, N.C., where he was variously exec

of Headquarters Squadron and MAG-14

Aircraft Maintenance Officer. At China

Lake, Stan relieved Major William C.

Benton, USMC, AE '55. The whole family,

including a boy, 11, and the girls, 5, 3½

and 2, agree that the desert beats

the swamps of North Carolina for living

conditions.

Lt. James H. Berrian, PhD, who is in

the Navy Medical Service Corps, repre-

sented the Research Institute of the

National Naval Medical Center at Beth-

esda, Md., at the International Colloqui-

um on Biological Problems of Grafting,

held in Liege, Belgium in March.

Richard L. Kerr, PhD, is now produc-

tion manager of Urethane Intermediates

in the new chemicals group of the Union

Carbide Chemicals Company, a division

of the Union Carbide Corporation. He

was formerly a new chemicals technical

representative.