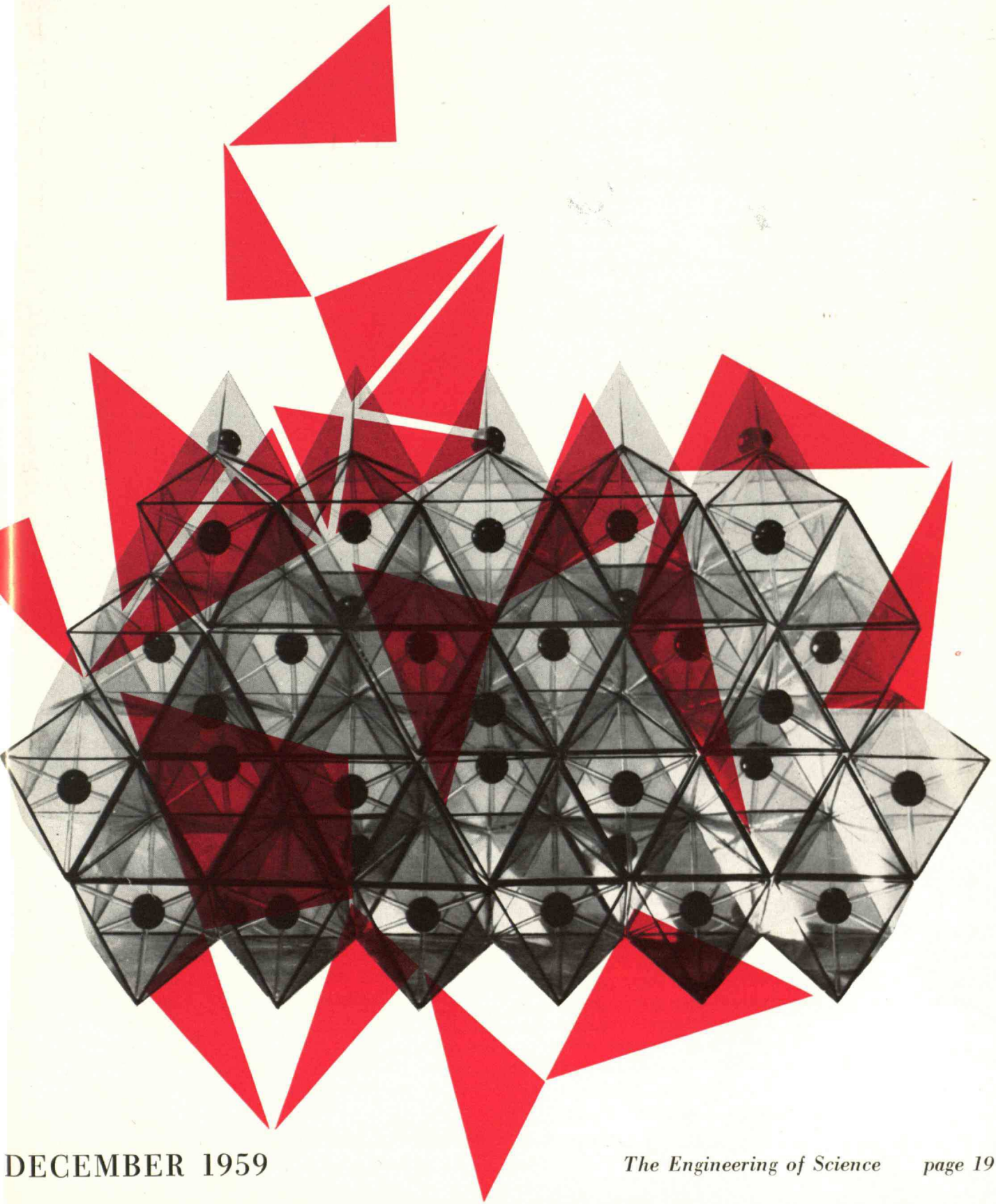
Technology Review



"CREATIVE ENGINEERING" BRINGS BIG ECONOMIES TO WIDE-SCALE HEATING

Nation's largest High Temperature Water installation heats U.S. Air Force Academy

The year 1959 marks a milestone in the history of The United States Air Force—the year in which members of the first graduating class at the U. S. Air Force Academy earned their commissions.

Situated in the Rampart Range of the Rockies north of Colorado Springs, on a 28-square-mile site, the new academy incorporates many notable advances in design and engineering. For example, the heating system which services the widely-spaced buildings utilizes *high temperature water*. This system, compared to steam, frequently offers important advantages for large-scale heating. Since hot water has an inherently higher capacity to contain heat, it not only reduces initial equipment costs, but also makes possible operating and maintenance savings of from 10% to 20%. Smaller-sized pipes can also be used, steam traps and pressure valves are eliminated, and the boiler plant can be smaller—more compact than required by steam—with greater operating control and efficiency.

The installation at the Air Force Academy*, comprised of five C-E La Mont Controlled Circulation Hot Water Boilers, is the largest heating system of its kind in the nation, and is one of many such installations at large military bases, industrial plants and institutions.

Here then is another example of **C**reative **E**ngineering—the C-E approach to providing the most advanced designs of boilers for all fuel, heat and power requirements—from those of small plants to the largest power stations.

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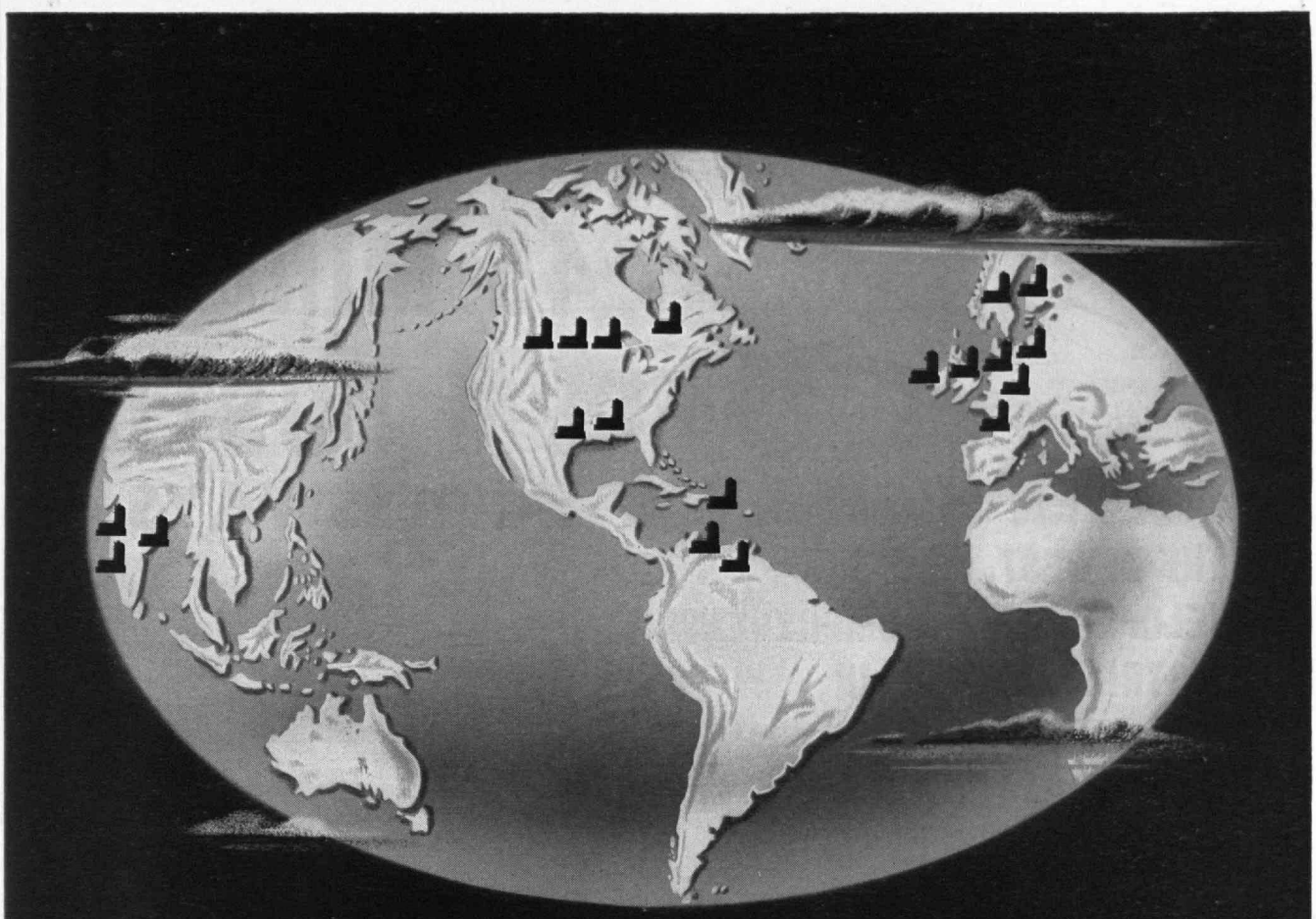

LUMMUS ENGINEERS AND CONSTRUCTS 20 COMPLETE REFINERIES SINCE END OF WORLD WAR II

World-wide Lummus Organization also completed hundreds of other units in same period . . . From Cardon, Venezuela, to Bombay, India—from Corpus Christi, Texas, to Turku, Finland—this string of modern "grass-roots" refineries testifies to the engineering skill of the Lummus staff. That staff includes over 3,000 permanent employees, located in seven branch offices and subsidiaries throughout the world.

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4. Refinery for Societe Generale des Huiles de Petrole at Dunkirk, France
5. "Portable" refinery for U. S. Navy Department
6. Lube oil refinery for Cit-Con Oil Corporation at Lake Charles, Louisiana
7. Refinery for International Refineries Inc. at Wrenshall, Minnesota
8. Refinery for Vacuum Oil Company Ltd. at Coryton, England
9. Refinery for Burmah-Shell Oil Company at Bombay, India
10. Refinery for Standard-Vacuum Oil Company at Bombay, India
11. Refinery for Standard Oil Company (Indiana) at Mandan, North Dakota
12. Refinery for Suntide Refining Company at Corpus Christi, Texas
13. Refinery for Commonwealth Refining Company at Ponce, Puerto Rico
14. Refinery for Esso Standard Oil Company at Antwerp, Belgium
15. Refinery for Caltex at Visakhapatnam, India
16. Refinery for Neste Oy at Turku, Finland
17. Refinery for Irish Refining Co., Ltd., Cork, Ireland
18. Refinery for Esso Standard Française, Bordeaux, France
19. Refinery for Purfina Mineraloelraffineria A.G., Duisburg, Germany
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Technology Review

Reg. U.S. Pat. Off.

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Feedback

Names in Class Notes

FROM RICHARD W. WILLARD, '51:

Provided costs are not prohibitive, I propose the format of the Class Notes be changed so that all names of Alumni appear in boldface. When I prepare a set of Class Notes under the present system, I find myself trying to begin sentences making reference to an alumnus with his name. Were boldface type used for names I would not feel I must have this concern.

As a reader of notes for classes other than mine, I am sure readers would prefer the boldface. I know only part of the Alumni in other classes (and in my own, too), so I am mainly interested as a reader in finding references to those whom I know.

Boldface names would make is obvious that Class Notes are short notes about people. The present format implies that the notes are essays. I am one writer of Class Notes who believes in the former, and who shudders if my notes are considered the latter.

M.I.T., Cambridge, Mass.

(The costs would be higher, but not prohibitive. Some class secretaries have objected to the proposal—ED.)

A Roof for the Rink

FROM SIDNEY ALTMAN, '60:

With the recent completion of the Du Pont Athletic Center, I, speaking in behalf of the present varsity hockey team, wish to bring to the eye of the M.I.T. community and Alumni another project for which there is sore need. That is, construction of a roof over, or enclosure about, the present ice-skating surface.

During the last few years, the ability of the M.I.T. hockey teams to field competent squads has steadily declined because of poor practice facilities in contrast with improving facilities at other schools. Our practice time is cut by snowfalls and the often adverse weather in Boston. But this is not our only reason for wanting action regarding the rink. Throughout the community there are people who express a desire to see hockey games, but are deterred by the thought of standing in the cold for two or three hours. At other schools we visit, the hockey arena is a central meeting place on the campus when games are scheduled. At our school, a group of 30 people is considered a good turnout.

M.I.T., Cambridge, Mass.

ELTING E. MORISON, Professor of History at M.I.T. since 1946, prepared a memorable paper for a Sloan Fellows' convocation, a part of which became the article on page 31 this month.

EDITOR: Volta Torrey; BUSINESS MANAGER: R. T. Jope; CIRCULATION MANAGER: D. P. Severance; EDITORIAL ASSOCIATES: J. J. Rowlands, Francis E. Wylie, John I. Mattill; EDITORIAL STAFF: Ruth King, Diana de Filippi; BUSINESS STAFF: Madeline R. McCormick, Louise E. Ryan; PUBLISHER: H. E. Lobdell.

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This Month — *The Cover*

The photograph that was the basis of this month's cover shows some of the interstitial crystal models invented by Prof. A. L. Loeb and I. L. Morris of the Computer Components and Systems Group which are now used as a teaching aid in the Department of Electrical Engineering. With four different modules (octahedra filled, octahedra empty, tetrahedra filled, and tetrahedra empty), three-dimensional models of lattices found in a wide variety of crystals can be assembled.

Individuals Noteworthy

Aeronautics' Visitor

THE visiting Jerome Clarke Hunsaker Professor of Aeronautical Engineering at M.I.T. this year is Brigadier General Benjamin S. Kelsey, '28, who retired from active duty in the U. S. Air Force in 1955 and has since been a consultant to industrial organizations. He will give the Minta Martin lecture on aviation next March.

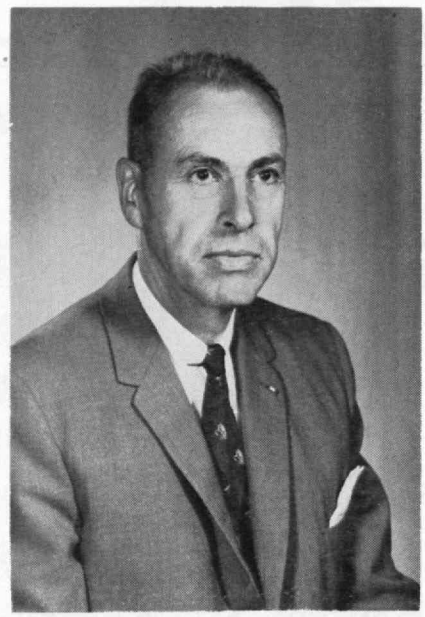
General Kelsey became a test pilot for the U. S. Army Air Corps in 1929, and was attached to the Guggenheim Fog Flying Laboratory where work was done on instrument landing. He was in charge of fighter procurement and production projects at Wright Field from 1934 to 1943, and took part in the first trans-Atlantic ferry flights of the P-38's and 22 combat missions for the Eighth Air Force. Later, he was on the faculty of the National War College and Deputy Director for Research and Development at USAF headquarters in Washington.

He holds the Distinguished Service Medal, Distinguished Flying Cross, Legion of Merit and Air Medal, and the Institute of the Aeronautical Science's 1945 Octave Chanute Award.

Naval Commander

CAPTAIN George L. Street, 3d, of the U.S. Navy became Professor of Naval Science at M.I.T. this fall and took command of the Naval R.O.T.C. Unit and the Naval Administrative Unit. Captain Street participated in the recent Lebanese crisis as commander of the Attack Transport *U.S.S. Fremont* (APA 44). Under his command in World War II, the submarine *U.S.S. Tirante* penetrated Japanese harbors while surfaced and sank a number of enemy craft. He holds the Congressional Medal of Honor, the Presidential Unit Citation, the Navy Cross, the Silver Star, a Gold Star and the Submarine Combat Insignia.

He was graduated from the U.S. Naval Academy in 1937, served on the faculty of the Armed Forces Staff College from 1948 to 1951, and was graduated from the National War College in 1956 after a year's study of international affairs.



Benjamin S. Kelsey

Honors to Alumni

RECENT recipients of medals and other honors have included:

Henry C. Harrison, '13, the Elliott Cresson Medal, from The Franklin Institute . . . *Augustus B. Kinzel, '21,* the Industrial Research Institute Medal for 1960 . . . *Walter Edward Campbell, '26,* the grade of fellow in the American Institute of Architects . . . *Charles Kingsley, Jr., '27,* the grade of fellow in the American Institute of Electrical Engineers;

Gordon S. Brown, '31, the electrical engineering education medal of the American Institute of Electrical Engineers . . . *Brig. Gen. John L. Person, '32,* the Distinguished Service Medal awarded by President Eisenhower . . . *Morris Cohen, '33,* the Francis J. Clamer Medal, from The Franklin Institute . . . *Capt. Loren E. Brunner, '41,* the Legion of Merit by the U. S. Treasury Department;

Randall D. Esten, '45, a second Sustained Superior Performance Award by the U. S. Army Engineer Research and Development Laboratories . . . *Harold G. Ingraham, Jr., '49,* the grade of fellow by the Society of Actuaries . . . *Edward R. Hermann, '49,* the Eddy award of the Federation of Sewage and Industrial Wastes Association . . . *Milton Stern, '50,* the 1958 prize to young authors by the Electrochemical Society . . . *John Dahlen, '52,* the Air Force Commendation Medal . . . *John Musho, '59,* the 1959 Rome Prize for a student of architecture.

Liaison Officers

JOHN F. MAXWELL, JR., '52, and Gary L. Benton, '59, have been appointed Industrial Liaison Officers at M.I.T. Mr. Maxwell, a graduate of the Amos Tuck School of Business Administration at Dartmouth, previously worked with the Northwest Paper Company, the Safe Harbor Water Power Corporation, and the Convair Division of General Dynamics. Mr. Benton, a Carnegie Institute of Technology graduate, held a Whitney Fellowship in the Graduate School at M.I.T. and was a Research Assistant in the Industrial Dynamics Group of the School of Industrial Management.

They succeed Robert D. Haberstroh, '51, who has joined the faculty of Colorado State University, and Merrill J. Baumann, '52, who is now with Merrill, Lynch, Fenner and Smith.

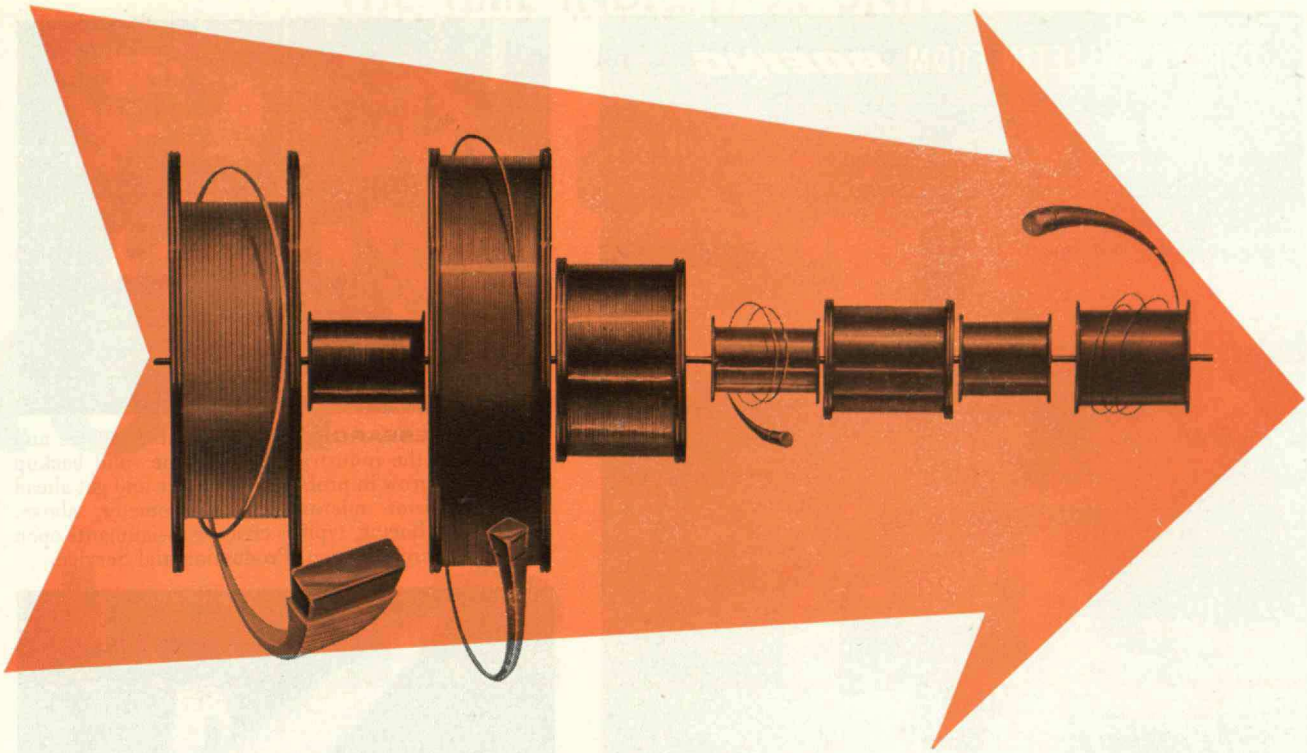
Personnel Relations Director

ROBERT J. DAVIS, who has been responsible for all M.I.T. union relations since 1957, became director of the Office of Personnel Relations in August. Mr. Davis came to M.I.T. from the Atomic Energy Commission in 1956 to be director of union relations at Lincoln Laboratory.

Previously he had been personnel director for the Los Alamos Scientific Laboratory, associated with the Columbia Steel Company, the Kaiser Steel Company, and the American Potash and Chemical Corporation, and in the U.S. Navy. He was graduated in 1937 from the Virginia Polytechnic Institute.

In his new post, he succeeds Malcolm G. Kispert, '44, Administrative Vice Chancellor, to whom he will report.

(Continued on page 8)



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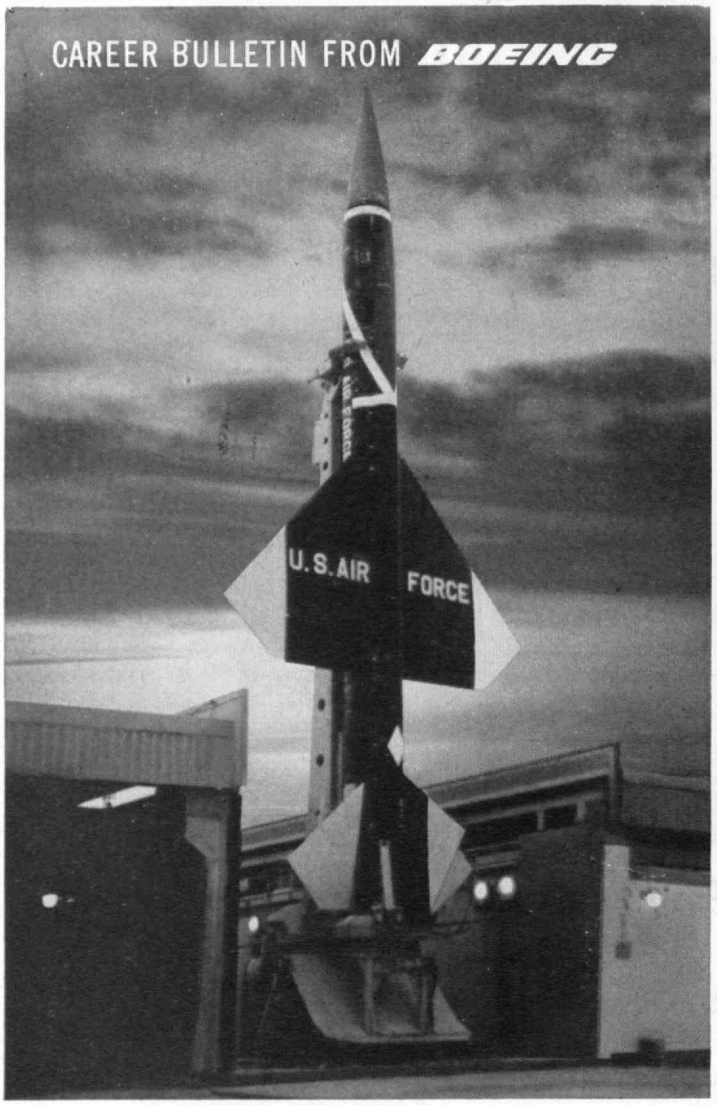
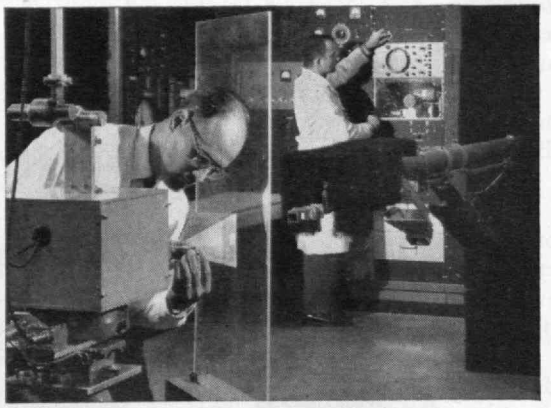


BOMARC, backed by one of the largest production orders in the field of missiles, and other rapidly expanding missile and space-age projects at Boeing offer exceptional career opportunities. Openings also available with Minuteman solid-propellant ICBM, and with other challenging projects in such advanced areas as orbital systems, lunar systems and interplanetary systems.



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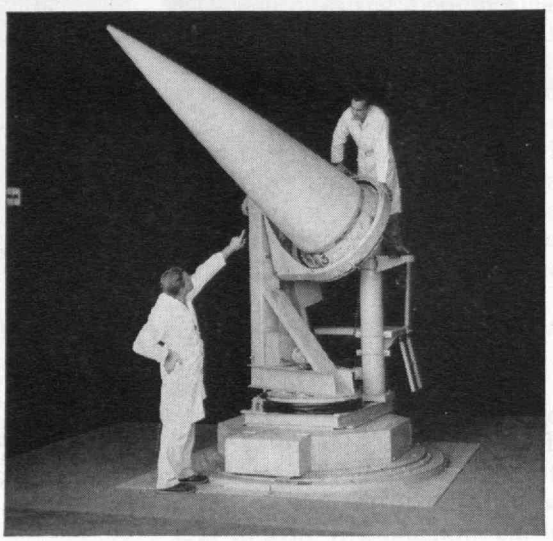
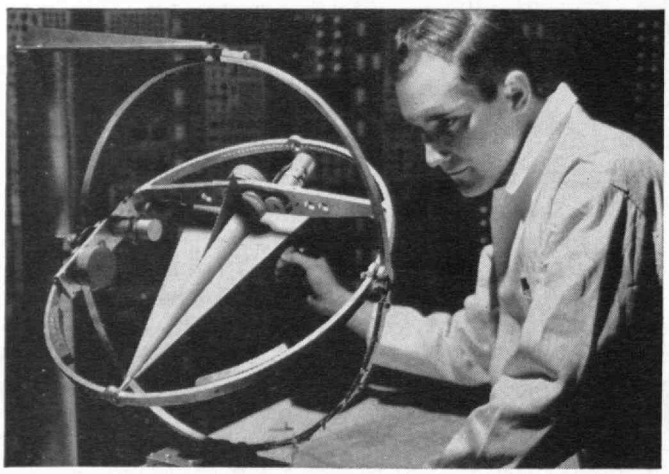


ENGINEERS working in radar and communications are supported by self-sufficient Boeing laboratories, housing equipment such as nation's first automatically recording, precision boresight error range, above. Other openings in infrared techniques, electronic circuitry, and in radar, beacon, guidance and control systems.



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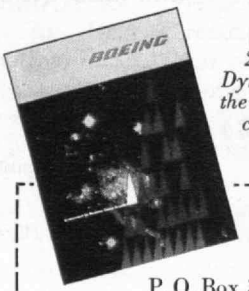

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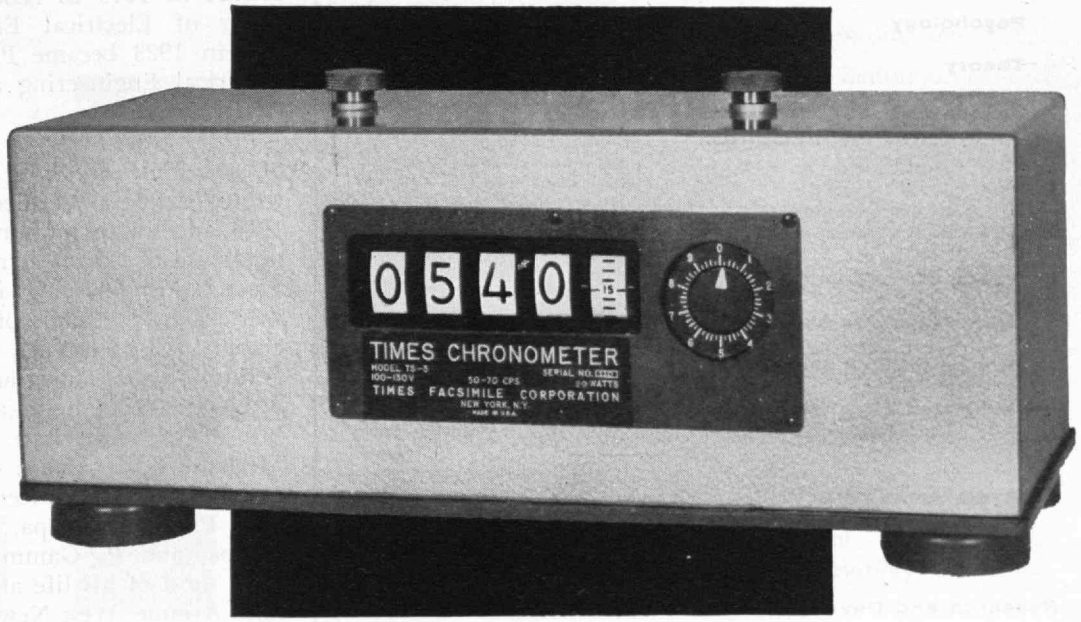

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Individuals Noteworthy

(Continued from page 4)

W. H. Timbie: 1877–1959

PROFESSOR EMERITUS William Henry Timbie died on October 30 in Brattleboro, Vt. He was largely responsible for establishing the Electrical Engineering Cooperative Course (VI-A) at M.I.T., and headed it for 28 years prior to his retirement in 1947.

Professor Timbie was born in Pittsfield, Mass., and graduated from Williams College. He taught electrical engineering for nine years at the Pratt Institute in Brooklyn, N. Y., and for seven years at the Wentworth Institute in Boston, where he was head of the Department of Applied Science. During World War I, he was editor-in-chief of the Committee on Education and Special Training in the War Department. He came to M.I.T. in 1919 as Associate Professor of Electrical Engineering, and in 1923 became Professor of Electrical Engineering and Industrial Practice.

Professor Timbie was the author or co-author of eight books; he wrote "Elements of Electricity" in 1910, and was co-author with Vannevar Bush, '16, of "Principles of Electrical Engineering" in 1922. He was a past president of the Association of Cooperative Colleges, a Fellow of the American Institute of Electrical Engineers, and a member of the American Society of Mechanical Engineers, the American Society for Engineering Education, Phi Beta Kappa, Kappa Eta Kappa, and Pi Gamma Mu. He lived most of his life at 295 Highland Avenue, West Newton.

Professor Timbie is survived by his wife, Florence Hill Timbie; three sons, Charles, of Framingham, Robert, of Pensacola, Fla., and Theodore, of Marblehead; and two daughters, Mrs. Florence Steinkamp of Marshfield, Wis., and Mrs. Francis Vachon of Portland, Maine.

Recording Secretary

TO ACCOUNT properly for the variety of gifts and bequests that M.I.T. receives through many different offices, Frederick W. Watriss, '41, has been appointed Recording Secretary. He is Assistant Treasurer.

(Continued on page 10)