

ENGINEERING AND SCIENCE



MONTHLY

In this issue

On the cover is Dr. Henry T. Nagamatsu, aero-dynamicist and director of the new California Institute of Technology Army Ordnance Hypersonic Wind Tunnel, examining the test section of the recently-completed tunnel. The hypersonic tunnel—which has already been operated at the unprecedented speed of more than ten times the speed of sound—is the fastest in the world. Even more important, however, is the fact that it opens up a whole new range of air speeds to the designers of rockets, planes and projectiles. The story's on page 8.

Bacher on Atomic Energy

Dr. Robert F. Bacher came to Caltech this fall as Chairman of the Division of Physics, Mathematics and Astronomy. One of the country's leading physicists, Dr. Bacher was Professor of Physics at Cornell University before the war. In 1941 he joined the Radiation Laboratory at M.I.T., headed by Dr. L. A. DuBridge. In 1943 he became Chairman of the Bomb Physics Division on the Los Alamos Laboratory Atomic Bomb Project. At the end of the war he returned to Cornell as Director of the Laboratory of Nuclear Studies until he was called to serve on the Atomic Energy Commission in 1946. From 1947 until he resigned last summer to come to Caltech he was the only scientist on the five-man commission.

Dr. Bacher's article on page 3 of this issue, "Our Progress in Atomic Energy," is adapted from a talk given on October 3, 1949 at Town Hall in Los Angeles.

Free World Agent

In his article on page 10 Fritz Zwicky, Professor of Astrophysics at the In-

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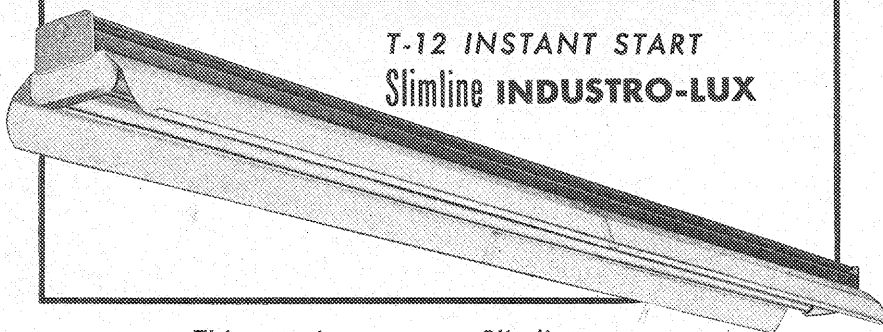
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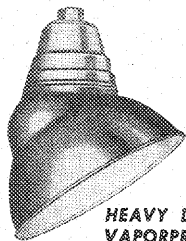
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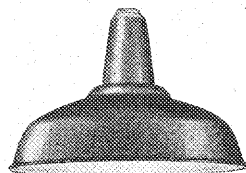
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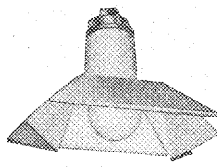
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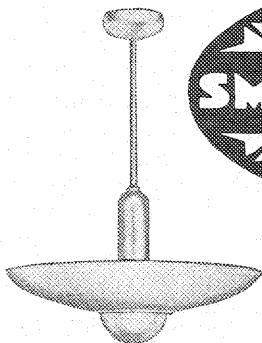
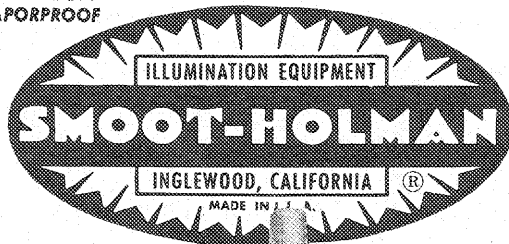
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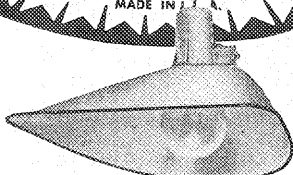
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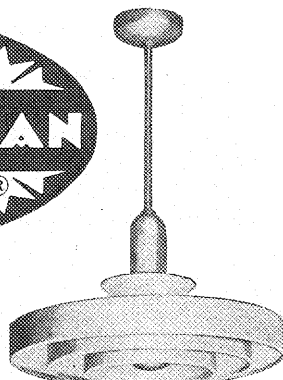
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In this issue CONT'D.



Bacher

stitute, deserts the field of astrophysics —as he often does—for that of philosophy. "Free World Agents of Democracy" is adapted from a talk which Dr. Zwicky delivered at an Alumni Association dinner early this year. As an address it proved to be provocative, challenging, rousing, infuriating and interesting. As an article it is all these things and more.

Dr. Zwicky has been at Caltech since 1927, when he came here as Assistant Professor of Theoretical Physics. Born in Bulgaria, he was educated in his native Switzerland, and received his B.S. and Ph.D. at the Federal Institute of Technology in Zurich. Since 1943, in addition to his Institute duties, he has been Director of Research for the Aerojet Engineering Corporation in Azusa. This year he became a member of Aerojet's Technical Advisory Board.

During the war he served as Technical Representative of the Air Force in Germany in 1944-45, as Consultant of the Air Force Scientific Advisory Board in 1945-46, and as a Member of the Board from 1946-48.

This fall (Sept. 21) on order of President Truman, Dr. Zwicky was awarded the Medal of Freedom, in recognition of his services in Germany in 1945, when he interrogated German scientists and technicians who had been engaged in the development and manufacture of German rocket-powered weapons such as the V-2.



Zwicky