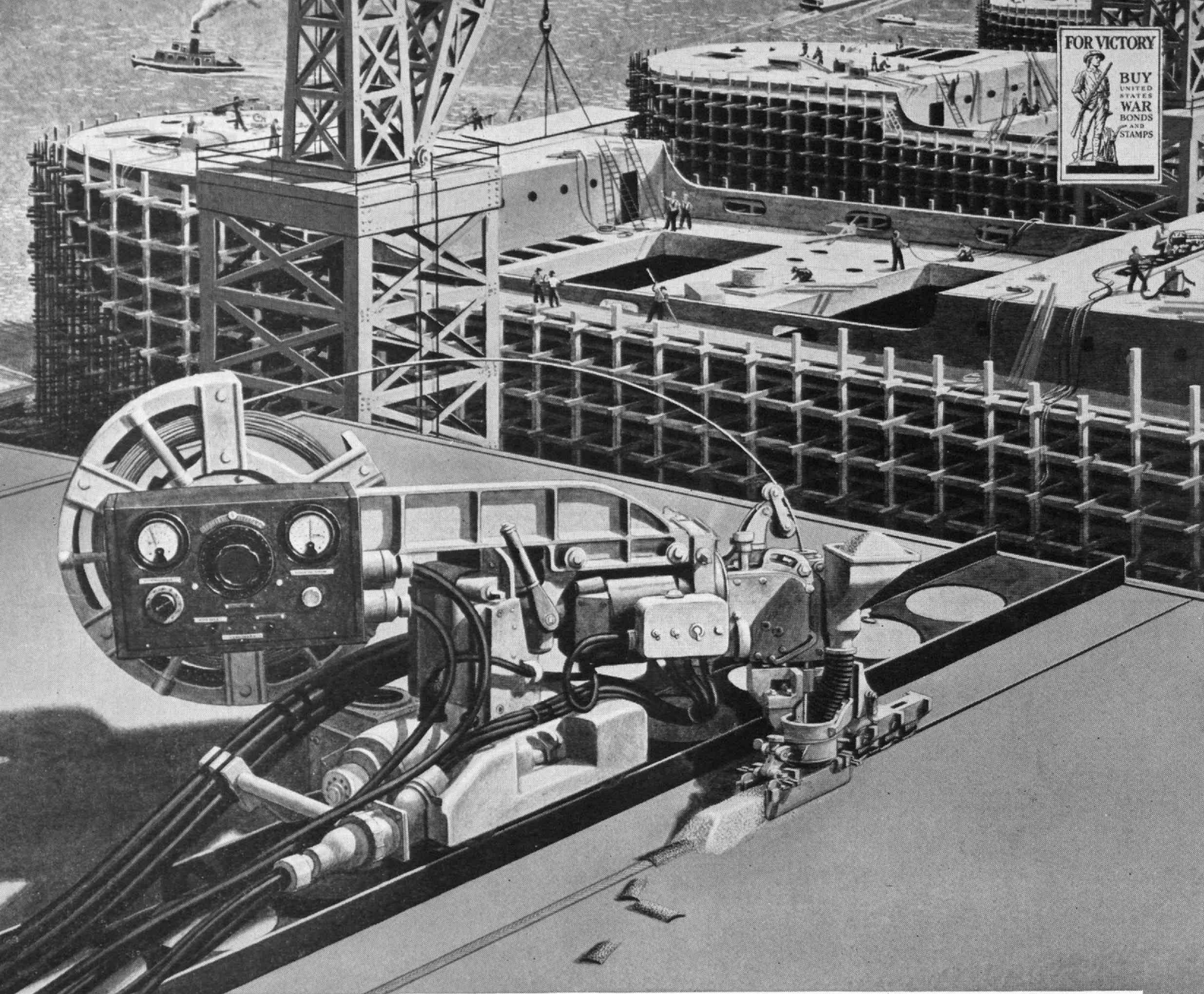


November 1942

TECHNOLOGY REVIEW

Title Reg. in U. S. Pat. Office





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THERE'S NEWS on America's ship ways today . . . an amazing machine that unites steel plates without noise, fuss, sparks or visible arc! A process that is helping to construct those marvels of speed, strength, safety, and carrying capacity . . . "all-welded" ships!

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Working with this unique process is an astoundingly fast Linde method of preparing steel plates for welding. White-hot oxy-acetylene flames . . . cutting simultaneously at different angles . . . bevel and square-up steel plates as fast as they are needed! Together, these two processes are speeding up the fabrication of key equipment at a remarkable rate.

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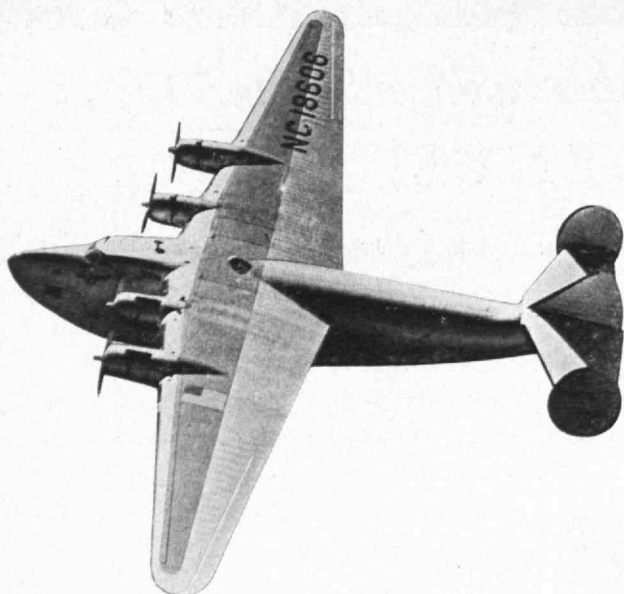




PHOTOS COURTESY OF PAN AMERICAN AIRWAYS, INC.

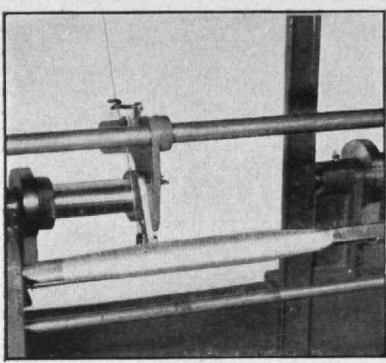
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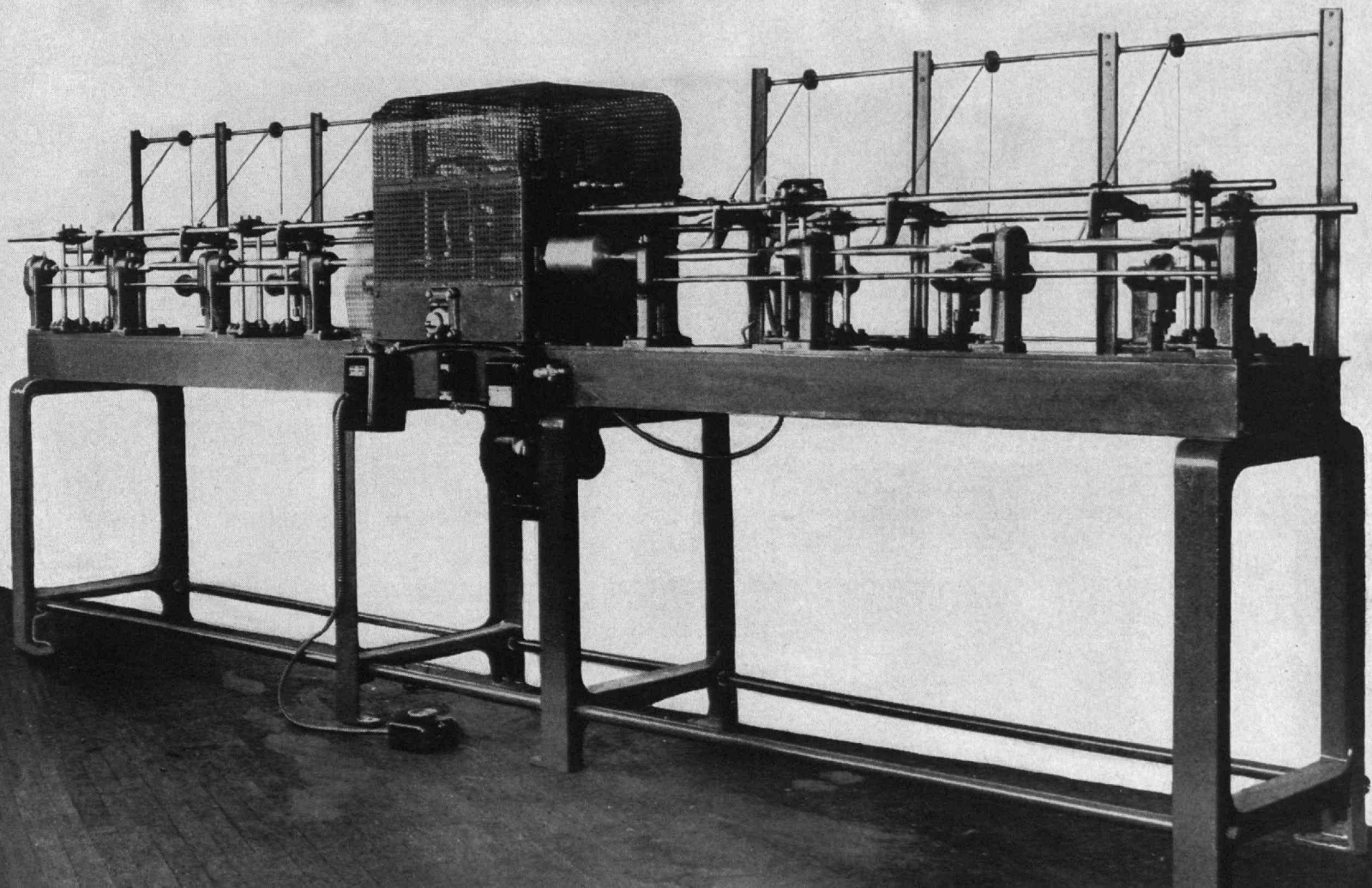
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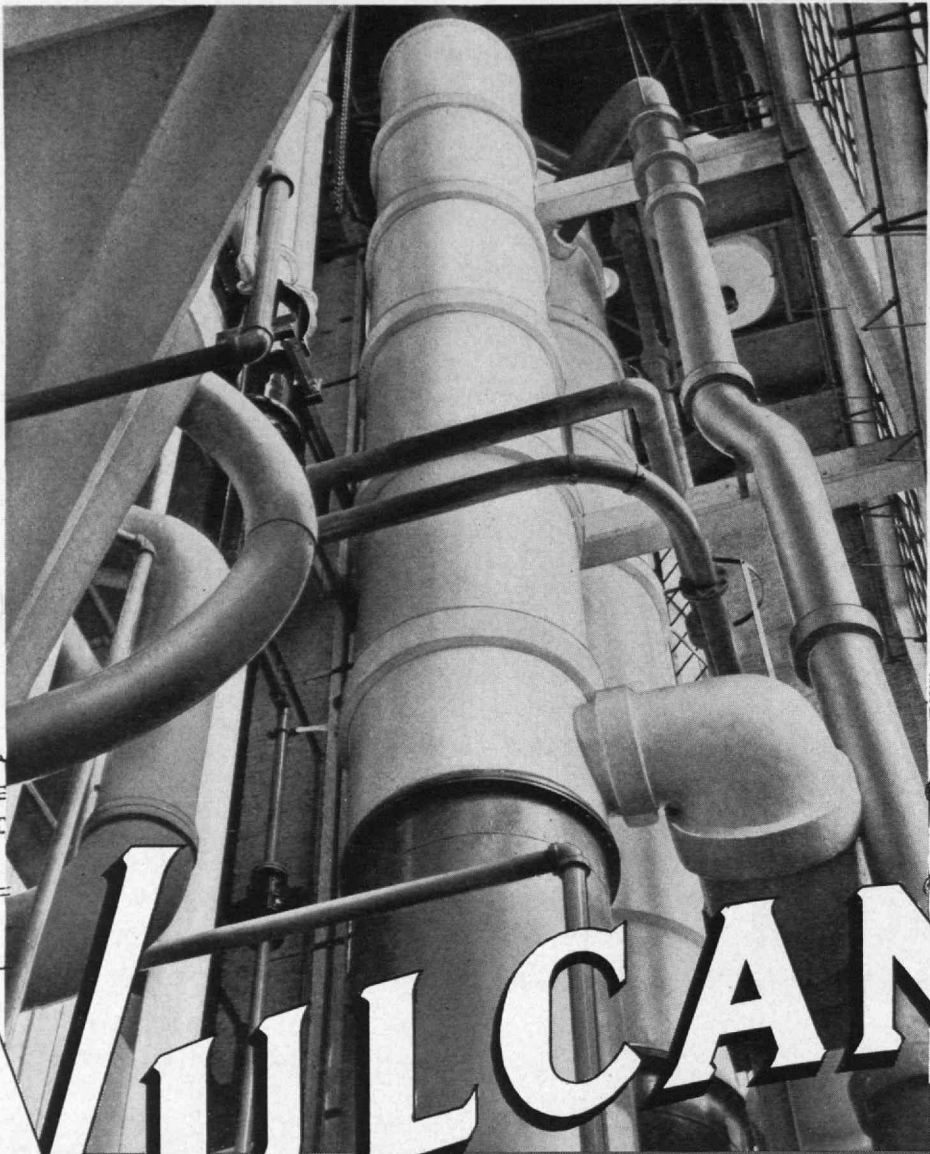
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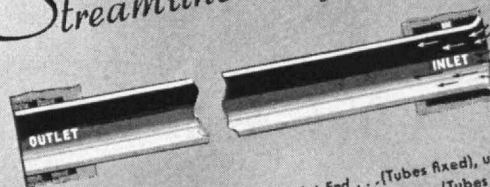
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THE TABULAR VIEW

War. — As our cover photograph suggests, Technology’s performance of its responsibilities as an American institution bulks large in this first issue of *The Review*, Volume XLV. From PRESIDENT KARL T. COMPTON we present two discussions which constitute a well-rounded picture of the Institute in these days of trial. The mood and spirit in which the Institute community is doing its work speak in his address of welcome to incoming students this fall (page 17); the great extent and import of that work are surveyed in excerpts from his annual report to the Corporation (page 31). Implicit in both discussions is the fine and unassuming quality of his own leadership, which is a constant source of strength to the whole Institute in extraordinary times.

Amity. — As adviser on Latin America to the State Department and to the Coordinator of Inter-American Affairs and as a diplomatist of long experience, ROBERT G. CALDWELL, Dean of Humanities at Technology, writes with authority (page 19) of the importance of maintenance of cultural relations between nations in time of war. Dean Caldwell’s article argues powerfully for the long-range view.

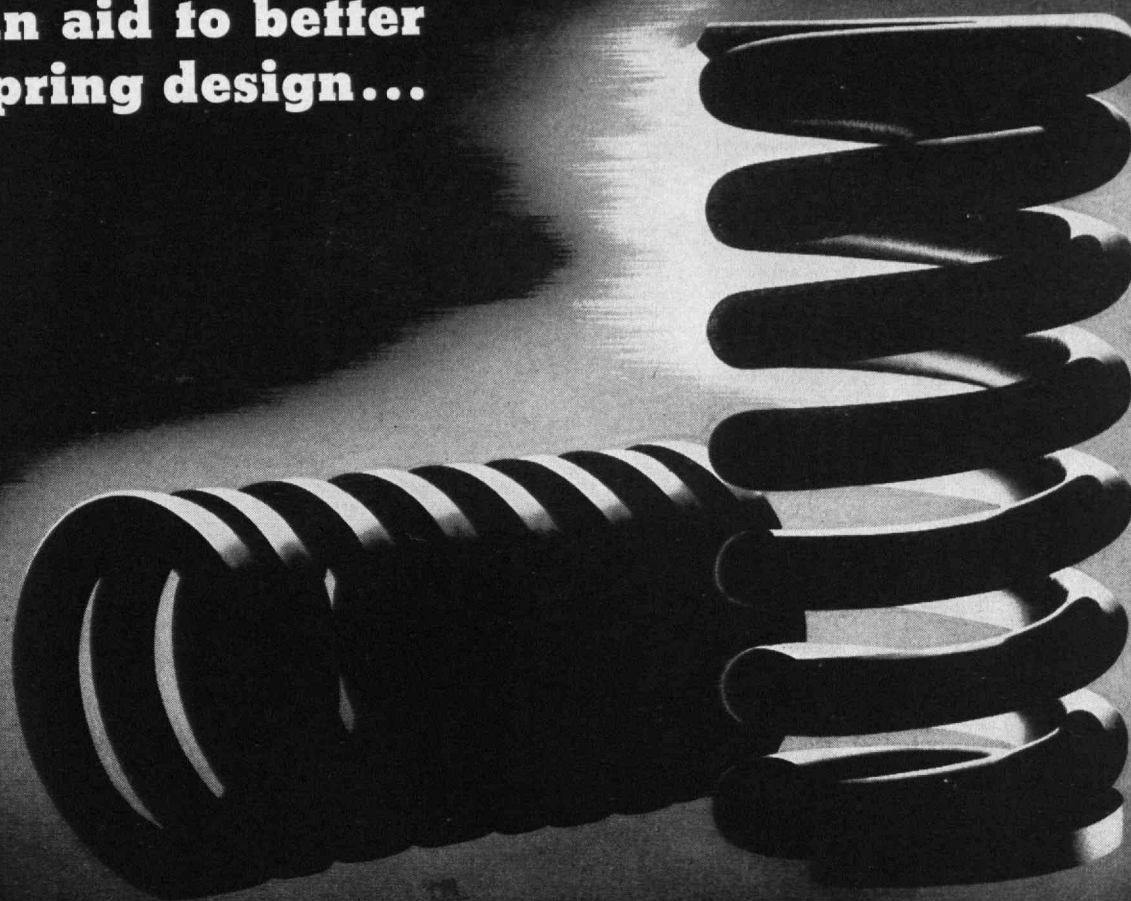
Formulation. — Among the more stimulating contemporary thinkers on matters aesthetic is AMÉDÉE OZENFANT, from whose *Foundations of Modern Art* *The Review* for November, 1940, quoted. In the present issue, M. Ozenfant discusses (page 22) a theory of the origin of art forms which is wide ranging in its philosophical substance. Born in Picardy in 1886, his father a builder and his mother a porcelain painter, M. Ozenfant after a brief interval at the Beaux-Arts studied painting in the Académie La Palette with other Moderns. First as a Cubist and then as a Purist he has sought directness of appeal in art. His paintings are in museums and private collections from Moscow to Chicago.

Native. — Steamboats built for navigation of American rivers and sounds in the first half of the Nineteenth Century contributed greatly to creating the American tradition. Their history as a story of mechanical advance and of human interest is recounted in this *Review* (page 25) by W. MACK ANGAS, ’17, Captain, Civil Engineer Corps, United States Navy, who is already well known to *Review* readers.

Control. — Some of the remarkable progress made in regulating the optical properties of glass — particularly its ability to transmit and to bend radiation — is described for *The Review* (page 28) by HAROLD R. MOULTON, assistant research director of the laboratories of the American Optical Company.

Invention. — A note on the construction of a native bridge in war-torn New Guinea is contributed (page 14) by M. F. ASHLEY MONTAGU, associate professor of anatomy, the Hahnemann Medical College and Hospital of Philadelphia, frequent and provocative writer on physical and cultural anthropology.

An aid to better spring design...



Information supplied by "Mechanical Engineering"

There exists a very evident need for the correlation of available data on mechanical springs, and for the formulation of a standard code for the design of helical springs. As a result, a group of specialists have made suggestions in a symposium, published in the July 1942 Transactions of the A.S.M.E. which it is hoped will crystallize into early action.

The scope of a proposed code, design stresses, the arrangement and scope of helical spring tables, the advantages and disadvantages of nomographic

charts, and the future research needed on mechanical spring problems are all discussed in the symposium.

Serious attention to the problem of mechanical spring design began in 1924 with the establishment of the A.S.M.E. Research Committee on Mechanical Springs. Since that date, 66 papers on the subject have appeared in various A.S.M.E. publications. They have laid the groundwork for a design code which, when completed and adopted, should simplify the work of designers. The symposium contains a bibliography.

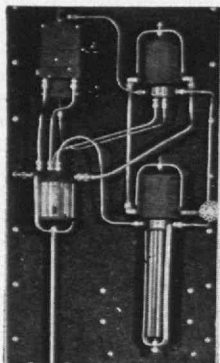
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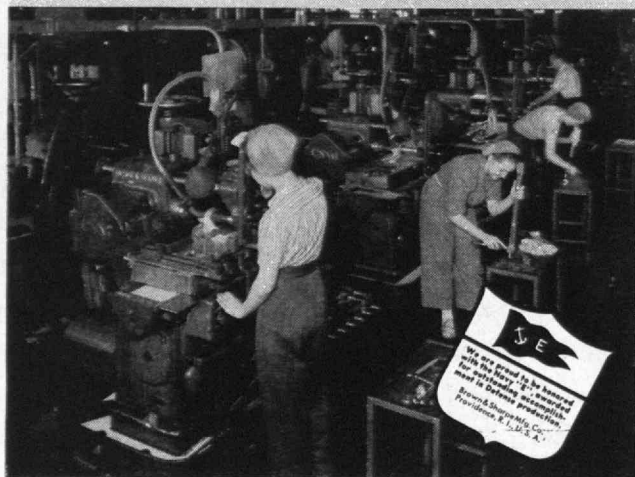
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FROM CHARLES H. BLAKE, '25:

We have been engaged for many months, whether we believe it or not, in total war, and still it seems necessary to emphasize this point repeatedly. To a large extent our failure to accept the idea of total war arises partly from ignorance of the definition of the concept and partly from humanitarian considerations. Not only must we attack all military personnel and installations of the enemy by every possible military means but we must attack the whole enemy population by all possible effective means, military and nonmilitary. It is precisely this last aspect of total war which is so abhorrent to democratic peoples.

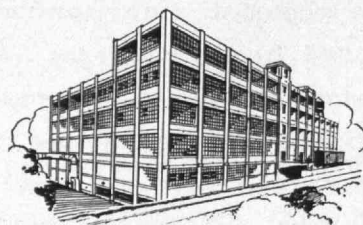
We do not, of course, have to adopt all of our enemies' less amiable methods of warfare, but we do have to remember that ultimately our problem is to put out of action the largest number of enemy effectives and that the effectives in modern war include virtually all civilians. It must by no means be forgotten that the majority of the German people, nazi or not, hoped to profit from the program of the Nazis. They may not have approved of nazi activities inside Germany, but they certainly approved on the whole of the external policy and the methods of carrying it out.

One aspect of this total war has been brought into the open by a recent discussion in the pages of *Science* on the propriety of suppressing technical information of medical and sanitary significance. The committee on medical research of the Office of Scientific Research and Development seems to feel that we should take a humanitarian point of view and not suppress such facts. On the other hand, the technical data license division of the Board of Economic Warfare has undertaken to censor certain findings which appear to be chiefly of medical significance. The issue is clearly joined, but the view held by each group is somewhat restricted.

For example, a nonpoisonous lining for lead tooth-paste tubes may have purely medical or humanitarian value. On the other hand, it is by no means certain that such knowledge could not be applied in other fields where its value might be clearly industrial and military. P. W. Bridgman saw this plainly when he closed his laboratory to citizens of totalitarian powers. Examples need not be multiplied. We need only remember that our enemies take the attitude that justice and fair dealing are only for one's own people and that whoever is not on their side is *ipso facto* against them.

Any medical discovery of ours which may come to the knowledge of the Axis will be used not for the general benefit of all peoples under their control but only for those segments of (*Concluded on page 54*)

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