

## ENGINEERING

## Senate Safety-at-Sea Report Brings Better Fire Resistance

THE REPORT of the Technical Committee appointed by the Senate Safety-at-Sea Committee following the Morro Castle disaster in 1934 has resulted in important changes in American merchant ship design with new emphasis on safety, Commander Howard L. Vickery, assistant to Admiral Emory S. Land of the U. S. Maritime Commission, told International Conference of Naval Architects and Marine Engineers meeting in London.

American merchant vessels designed since the report was completed are better balanced when damaged than were previous designs. They frequently have more compartments and bulkheads, a safety factor of no mean importance. In addition, fireproof panels and bulkheads have been developed in tests conducted by the committee on the S. S. Nantasket, which should go a long way toward relegating holocausts like the Morro Castle disaster to long-distant memory.

Regulations worked out by the committee, the American merchant marine

official and Navy officer declared, are in many cases more stringent than those set up by the International Convention on Safety-at-Sea in 1929.

The fire-resistant materials developed by the committee may add to the weight and cost of a ship, but will result in a greater margin of safety.

Prefabrication of the insulated steel panels may prove to be the way in which these new materials can be designed, he suggested. If this proves to be the case much woodworking equipment found in large shipyards for producing wooden panels will be immediately rendered obsolete.

Safety regulations governing many parts of a ship previously not considered have been studied. "The safety viewpoint taken regarding the machinery of the ship is that the derangement of even what may appear to be some minor part might render the ship helpless and so expose her to the elements as to endanger her," Commander Vickery said.

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about every four miles. Records can be taken every half-hour, or even every fifteen minutes.

It has thereby become possible, after assembling and digesting the vast masses of data in central computing offices, to learn where the rain has fallen thickest, and for how long. The extent and movements of the rainiest and the "driest" parts of a rainstorm have been traced, and quantitative figures of runoff, soil erosion, local floods, and other long-desired but hitherto unavailable data have been obtained.

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## ZOOLOGY

## Ten Enemies Oppose Man's Use of Wood Products

MAN'S use of wood throughout the world is in a continual battle with ten different kinds of wood-destroying enemies, it was reported at the Conference on Timber and Concrete sponsored by Massachusetts Institute of Technology.

When man uses wood in water, three marine animals lie in wait, said Prof. Charles H. Blake, assistant professor of zoology at M. I. T. They are: The famous shipworm, a small clam with an elongated giraffe-like neck; the gribble, a tiny gray shrimp-like animal only  $\frac{3}{16}$  of an inch long; and another shrimp-like animal known as *Chelura terebrans*.

On land six kinds of insects and one plant species are at hand seeking to destroy wood as man's construction material. The plant is the shelf or bracket fungus, which is related to the mushroom.

Among the insects are the two kinds of termites, the dry-wood and damp-wood types. Then come three beetles: the death-watch beetle, whose ticking sound was once considered an ill omen; the false death-watch beetle, and the powder-post beetle. And finally there is the destructive carpenter ant, big and black, who excavates a series of broad passageways to serve as its dwelling.

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## METEOROLOGY

## "Shapes" of Rainstorms Determine Their Effects

RAINSTORMS have shape and structure, and these determine to a large extent their effects for both good and ill. This has long been realized in a general way, but it has not been until lately that even an approximation of close study of these highly important meteorological phenomena has been possible.

At the recent national meeting of the American Meteorological Society, the subject was discussed by representatives of two different parts of the U. S. Department of Agriculture: Dr. Merrill Bernard of the U. S. Weather Bureau and Dr. C. W. Thornthwaite of the Soil Conservation Service.

One of the principal handicaps in the more minute study of rainstorm shape and structure has been the relatively

wide spacing of observation points. The raingages and other instruments necessary for obtaining data have been located at cities scores or even hundreds of miles apart, with scattered supplementary stations maintained in smaller places by volunteer observers. Records have been taken, as a rule, only once or twice a day, so that a cloudburst of an inch in an hour might appear on the record as a 24-hour precipitation.

However, with the simultaneous advent of depression and drought, with relief consequently necessary for many farmers, the ill winds have been taxed for at least a modicum of scientific good. Weather-recording set-ups have been established in a thick network over a whole river watershed in Ohio, with a station kept by an instructed farmer

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