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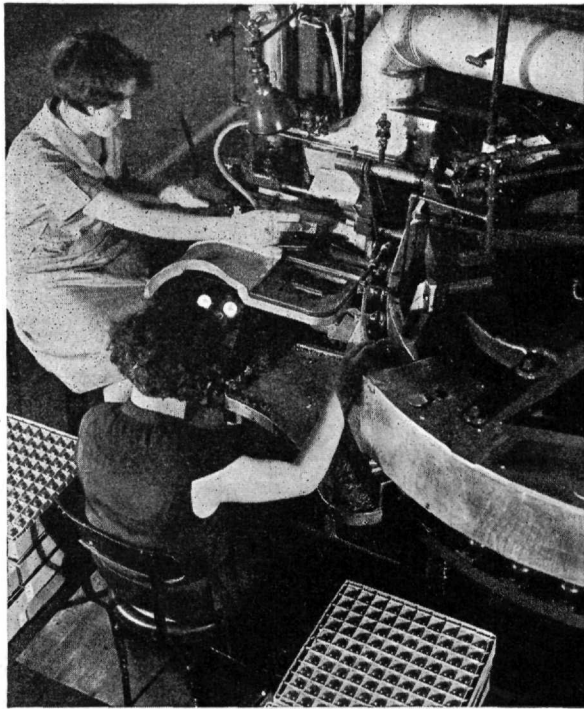
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# ENGINEERING REVIEW



## Mechanical Merry-Go Round

Colored Mazda lamps are painted on the inside by this veritable robot painter in the Westinghouse Lamp Company, Bloomfield, N. J. Clear glass bulbs placed on this "mechanical merry-go-round" are heated and made to revolve while a spray gun is injected inside to apply a thin coat of paint. The heated glass dries the paint quickly and the quality of coloring is then tested by placing the bulb over a tiny tubular lamp. This machine sprays 6,500 lamps per day.

## New Mooring Mast Installed at Lakehurst

An improvement over the fixed height mobile mooring truck or mast, is represented by a traveling telescopic mast recently installed at the U. S. Navy air station in Lakehurst by its designer and builder, the Wellman Engineering Company of Cleveland.

The old truck type had a mooring height of seventy-six feet. The mooring mast at Lakehurst can moor a ship at the maximum height of one hundred and sixty feet and the minimum of seventy-five. Tests show it to withstand side pulls of one thousand pounds at full height and sixty thousand at low mast, and exert a drawbar pull of fifty-seven thousand pounds.

The tower, consisting of two moving sections, is a structural steel pyramid eighty feet square at the base. This tower is mounted on a standard gauge railroad truck.

Tower sections are rope hoisted by electric power. This advance in landing equipment allows a ship to be moored at one hundred and sixty feet above the ground and moved into a shed against a forty mile wind.

—*Engineering News Record.*

## Quick Sand Frozen to Dig Tunnel

In the construction of a pair of tunnels beneath the Scheldt River at Antwerp, Belgium, the engineers were faced with the problem of sinking ventilating and elevator shaft: through as much as ninety feet of fluid quicksand to the tunnel bores. This quagmire is on the left bank of the Scheldt where the low-lying land is composed of nothing but muddy flats and sandy stretches that rise only a few feet above the water at high tide.

The Belgian contractor attracted the attention of the engineering world when instead of using the American method of sinking the shafts with caissons, he chose a much cheaper but longer method of freezing the ground. A rigid cylinder of frozen earth was frozen around the site of each shaft. The freezing was carried out by sinking pipes containing a circulating brine from a nearby refrigerating plant. Between three and four months have been required to freeze the fifteen foot solid cylinder of ice.

Perhaps this engineering scheme may be applied with good results elsewhere, such as at meteor crater in the north-central part of Arizona. The meteor is undoubtedly rich in nickel and perhaps other valuable metals if once reached through the fifteen hundred feet of broken and water bearing rock.—*Popular Science.*

## West Point

WITH the completion of the reconstruction and modernization of all its utilities at a cost of approximately one million dollars from funds made available by the U. S. government for the relief of unemployment, the U. S. Military Academy at West Point, New York, under the command of Major General W. D. Connors, is now considered the best equipped "Electric City" in the country today.

This modernization program which was necessary to keep the Cadets abreast with the conditions of the time, consisted of the construction of  $3\frac{1}{2}$  miles of concrete surface roads, rebuilding the gas, water, and steam supply systems, together with the modernization and changing over from the direct current to alternating current of the entire electric power plant and street lighting system?

The bulk of the reconstruction in the power plant was executed by the Westinghouse Electric and Manufacturing Company, whose contract called for the installation

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of two, 1,000 kilowatt turbine generators, complete switchgear and control switchboard for the turbo generator, together with regulating and switching equipment for the street lighting circuits.

The changing from the D. C. to the A. C. system now permits the use of standard electrical apparatus and household appliances by members of the reservation which heretofore have been prohibited by the obsolete plant.

The 3½ miles of new highway of the West Point reservation is lighted with an ornamental designed lighting standard known as U. S. Military Academy Standard. These poles and luminaires were especially designed by Army and Westinghouse engineers to harmonize with the architecture of the surrounding buildings and, therefore, are unique. Through the courtesy of the Westinghouse Electric Co. our cover picture of this issue illustrates this new type of lamp at West Point.

The particular feature of the new street lighting system is that the light from the lamps does not radiate out with equal intensity in every direction. A certain amount of light is permitted to fall upon the buildings along the street, but by far the greatest proportion is directed down upon the street where it is wanted. This is accomplished by means of a system of refractors.

The result of this arrangement is that a substantially uniform illumination is secured along the entire length of the roadways. There are none of those alternating spots of light and darkness which are so annoying and dangerous to motorists. In addition the lights themselves do not dazzle the eyes of drivers, and even the glare from the brilliant headlights on approaching cars is so minimized by the prevailing illumination as to be practically harmless.

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