

PSYCHOLOGY—PHYSICS

Detect Camouflage

Men with faulty color vision have advantage in spotting camouflage but colorblind men don't need to rush to enlist—Army probably has enough.

► **OBSERVERS** with weak color vision do have an advantage in detecting faulty camouflage, Dr. Deane B. Judd, of the National Bureau of Standards, told the Washington Academy of Sciences.

This need not be a signal for colorblind men to rush to enlist in the Air Forces, however. Men who are completely colorblind or even partially colorblind do not have this advantage, Dr. Judd said. And since, out of every 20 men, about one man has weak color vision and another is colorblind, the Army probably already has a good share of men capable of spotting the enemy's blunders in camouflage.

The most common form of colorblindness is the inability to distinguish red from green. Men with this color vision defect find it difficult to pick out ripe strawberries from green or to pick a rotten apple from a barrel of red apples.

Since the vision of such persons for blue and yellow is normal, they are said to be only partially colorblind.

To hide a military position from such a person it would be necessary to see that it was no lighter and no darker than the surrounding country. And it must be no bluer or no yellower.

But the partially colorblind person would not notice if the position happened to be a little redder or a little greener than objects around it.

The partially colorblind person, therefore, usually has no advantage over the man with normal color vision in detecting camouflage. If a roof or a gun-shield is painted so that the normal eye cannot tell it from the ground or the foliage, the partially colorblind person cannot distinguish it either.

Since nature provides the best camouflage, the Army usually prefers to use actual vegetation or dirt whenever possible to hide positions. But cut branches change color when they dry out and the leaves wilt. Dirt used in this way may dry out more rapidly after a rainstorm than the dirt on the ground. This produces slight differences in color and results in imperfect camouflage. Another fault in camouflage is in paint intended to match the surroundings. Such paint, even when it is a close match,

is likely to differ in reflectances in some portions of the spectrum.

It is such imperfections, not noticeable to the normal eye, that are picked up by those with weak color vision.

There are a few situations in which the red-green colorblind man has an advantage in detecting camouflage, Dr. Judd pointed out. In a variegated pattern made up of patches of reddish brown earth and yellowish green foliage, areas that are a little too light or too bluish are lost to the normal eye because of the larger red-green differences.

But the colorblind observer doesn't see a variegated pattern of irregular red and green splotches. To him, there is a nearly uniform yellowish-brown field. A spot that is too light or too bluish would show up conspicuously to his eyes.

The normal individual cannot make use of filters to fake weak color vision in order to detect camouflage, Dr. Judd indicated. In order to screen out red and green, a filter would also screen out most of the light and make it very difficult to see anything. And the filter would not accurately duplicate the color vision of the partially colorblind person at that.

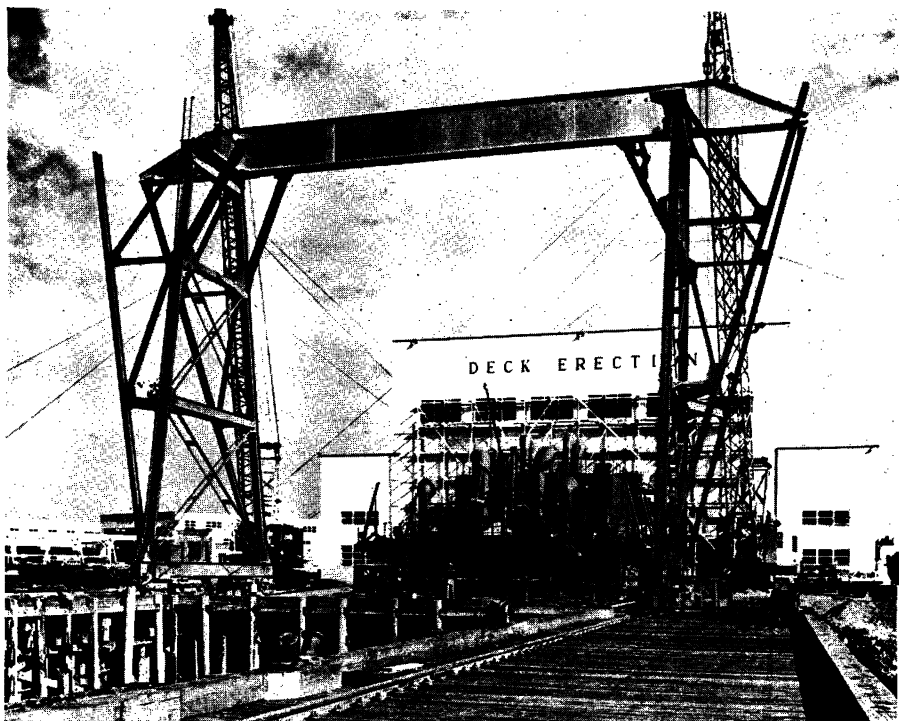
Science News Letter, November 28, 1942

ENGINEERING

Yards Break All Records, Admiral Land Reports

► **FROM KEEL-LAYING** to launching, work on our merchant ships is being speeded at whirlwind tempo. The Ec-2 ship, for example, has had production time cut by more than two-thirds during the past eight months, Rear Admiral Emory S. Land, chairman of the U. S. Maritime Commission and head of the War Shipping Administration, declared in his presidential address before the Society of Naval Architects and Marine Engineers meeting in New York.

"We have now expanded merchant shipbuilding facilities to the point where there are more than 60 yards, having



SHIPBUILDING SPEED—Assembly line methods are what enables the shipbuilder, Kaiser, to put his ships together so fast for war use. The deckhouse is erected in the "Deck Erection" house shown here. It starts at the back and is moved forward through the various stages of completion. Finally it moves outside. Then a huge crane lifts the deckhouse onto the ship in the dock in foreground where the various huge parts are fastened together.