

# Human Engineering

## SAFETY

### Beware of amber

Those amber parking lights that have become a standard safety device on all new US cars may actually be a cause of accidents. Research conducted by the Automobile Legal Association has shown that under certain lights, particularly the fading shades at dusk when accidents are most likely, amber and red become almost indistinguishable. This means that a driver frequently can't tell for sure whether the car he sees is coming or going.

The ALA became interested in the problem when its safety director, Philip C. Wallwork, was almost struck by another car as he entered a highway at dusk. To Wallwork, the car appeared to be going away; actually it was coming toward him.

As a result, the ALA has made studies, relying primarily on tests of visual perception, along a three-lane highway and on traffic at the Westfield interchange of the Massachusetts Turnpike in the Berkshires. The three-lane highway proved especially dangerous because of the uncertainty of the direction of the car in the middle lane.

In these tests, cars were observed approaching at twilight from distances of 100 ft until they were out of sight. At 100 ft or more the amber and red often looked alike. And to complicate matters many tail lights are covered by red plastic, not glass. At sunset the red tones fade into amber or orange. Other tail lights are old and have faded, and many foreign cars had amber tail lights to start with.

"Moreover," says Wallwork, "some people with older model cars, who want to 'keep up with the Joneses,' paint their front parking lights orange." When they do, almost no light gets through.

**Cures.** The idea of having smaller front lights contrasting in color from the big white headlights is a good one, says Wallwork. The only trouble is that designers didn't study the problem enough and pick the right color.

"Something different from both the white headlights and red tail lights, green, for example, is what's required . . ."

He recommends that the auto industry immediately takes steps to change the amber in upcoming models. And meanwhile, the Automobile Legal Association is embarking on an

educational program to urge drivers to use their front lights for directional signaling only. Many motorists turn on their parking lights at dusk. Florida now forbids the practice, requiring headlights whenever a vehicle is in motion. Other states should follow suit, Wallwork declares.

### Trouble-making toys

"Designed casually, made contemptuously, sold irresponsibly, and bought indiscriminately" is the scathing indictment of modern children's toys that concludes a recent British report put out by a local consumers' organization, the Watford and District Consumer Group. Supported by gruesome evidence of accidents to children, the report gives instances of faulty design and manufacture rather than present results of objective laboratory tests.

Functional and sensible design is far from common in British toys; nevertheless, toys from other countries came in for equally severe criticism in the report (are US manufacturers free of guilt in this field?) Here are the most general design faults cited:

**Plastics.** Instead of bringing a new safety to toy design, plastics have brought new problems. Snap-fit parts do not fit for long when subjected to repeated dismantling—something the designer surely must have foreseen. In many cases unsuitable plastics have been used. The brittle plastic of a baby's teething ring, for instance, was hollow and fractured. Result: mouth cuts. Adhesives were found faulty too, or else contact areas were inadequate. Repeatedly, plastic wheels on metal axles were found to come loose.

**Metals.** Sharp edges were the major complaint, a fault easily eradicable by rolling. Other toys fell apart because of inadequate joints.

**Fixings.** One constantly recurring defect was a lack of shakeproof or spring washers underneath nuts. The only ones to benefit were the nut-and-bolt manufacturers.

**Mechanisms.** The old clockwork drive was not often found, but there were complaints of tugboats where the clockwork drive was exposed through cut-out windows. Often, water got in and the drive rusted. Far more common were the "push-and-go" flywheel drives. Two frequent faults here were excessive downward protrusion of the drive (not an asset to floors or rugs) and, more dangerous, cut-out windows