

## PSYCHOLOGY

# Army Tests Cut Accidents

**Simple paper and pencil tests, practically proof against cheating, pick drivers that will reduce accident bill. Drivers will be more efficient. Lives will be saved and injuries reduced.**

By MARJORIE VAN DE WATER

► BY PICKING BETTER MEN to drive its trucks, jeeps and other motor vehicles, the Army is cutting down on accidents.

Use of a small number of simple tests is expected to result in a reduction of accidents amounting to as much as five to ten percent according to a very conservative estimate.

Since driver accidents are a \$14,000,000 problem in the Army, this will mean a saving to taxpayers of something like \$1,000,000 to say nothing of the saving of lives and prevention of injury to our military men. It also improves the efficiency of drivers.

Surprisingly enough, the tests accomplishing this are not measures of reaction time, reflexes and such psychophysical tests that have been suggested hopefully for driver-permit tests throughout the nation. They are simple, brief, paper and pencil tests that appeal to the men taking them as practical, relevant and interesting.

The new driver tests were developed by psychologists of the Adjutant General's Office of the Army under the direction of Dr. J. E. Uhlener, research manager of the Army Personnel Research Program.

Dr. Uhlener does not suggest use of the tests for screening those applying for driver permits. Although the roads would be a lot safer if only those people best qualified to drive were given permits, it is not practical in a democracy to bar from a permit all those except the individuals who will make the best drivers.

## Suggest Trucking Firms Use

It would, however, be highly practical to use the tests or others like them as employment tests to pick drivers for the companies operating big fleets of trucks or taxicabs. These companies could expect a reduction of accidents comparable to that occurring in the Army.

The Army is the largest user of motor vehicles in the world, Dr. Uhlener pointed out.

In many ways the problem of the Army driver is tougher than one in civilian life. Within the continental United States, the Army driver may expect, like his civilian counterpart, to drive for the most part over roads—and pretty good roads they are. Abroad, however, the Army driver may have to find his way through dirt or boggy trails, or may even have to cut off across country where no vehicle has ever been driven before.

One battery of the new Army tests is given to all men on classification. They go through a series of situations that might face any driver on the road and indicate what is the proper thing to do under the circumstances.

For example, the entering soldier might be asked what he would do if the driver ahead of him suddenly stopped. He is given a series of statements any of which might be a good thing to do, but the young soldier is required to pick the one action that is best under the circumstances.

## Test Attention to Detail

Next he is given what is a test of perception but more than that. The Army experts call it a test of "attention to detail." The man has to look at lines of type consisting mostly of o's with a few c's sprinkled around at random. It is the soldier's job to spot all the c's. To do it, he must have good vision but he must also be able to keep his attention from wandering and not lose his place, just as the driver on the highway must be alert to spot small details and must be able to keep his eyes on the monotonous road without wandering off.

Third part of the screening battery is what the Army experts call the "Army self-description blank." This very interesting "test" is what the experts call a "non-cognitive" instrument. That means that it does not test the man on what he knows, but rather on what he is.

Hidden among the answers here is the information that employers usually try to obtain in a long employment interview, but actually material never obtained in an interview is elicited.

## "Hot-Rod" Answers Indicative

In this "instrument," the soldier tells about his driving experience and instruction, whether he has ever had a job at driving a truck and, more important, about his interests, attitudes and personality, whether he gets bored with his own company and whether he likes to tinker with engines and mechanical things. Tucked in are several questions dealing with experience and interest in "hot-roads."

Some of the "hot-rod" answers were found to point to the good driver and some indicated a "poor risk." It would be very hard for the soldier taking the battery to guess which answer is the "right one." Even the experts did not know when they wrote the questions which answer would turn out to be the best one. They found that out when they saw what the best drivers answered.

The hot-rod questions, like the others in



*CRACK-UPS CUT—Sights like this, here displayed to warn other Army drivers, will be less frequent in future now that new tests are picking better, safer drivers.*

this part of the self-description, do not have any one "correct" answer. Out of several alternate answers, the soldier is asked to indicate the one best answer for him, but he is given credit if he indicates any one of two or three of the four or five possibilities.

When the opportunity arises to select men for driver training in the Army, selection is made from among those with the highest scores on Battery I, which was given at the reception station. These men are then given Battery II, also a series of paper and pencil tests, together with one test of hand coordination.

In this battery there is another test of judgment on what to do in emergency driving situations depending on situations shown in drawings.

One of the tests in Battery II is a test of vision, but like the "attention to detail" test in Battery I, it also measures more.

In this test of vision plus, the men look at lines of type. At the left of the page is a word, while opposite to it is a group of five words, one of which is the same as the word at the left. Some of the other words look very much like it. Suppose the word at the left is CRATE. The man must find CRATE among the words at the right. If he marks GRATE instead of CRATE, he is wrong. The type gets smaller and smaller down the page.

For the hand coordination measure, the man takes a stylus about the size and weight of a chisel in each hand. He is supposed to follow down a page and tap with his stylus in each of a series of printed circles, some close together and some far apart.

The men who get the highest scores on Battery II after having passed Battery I make the best drivers.

When the men are ready for assignment to their driving job, in the Army licensing procedure they are also given a road test and tests of reaction time, vision, depth perception, color vision and hearing. These tests are used for counseling the men on their strengths and weaknesses.

It is not now possible, Dr. Uhlner feels, for commercial firms to take over the tests in their present form and use them for private drivers. But the principles underlying them can be made use of to develop similar tests.

Science News Letter, June 2, 1956

AGRICULTURE

**Russian Farmers Having Troubles**

► THE RUSSIAN FARMER is also having a farm problem.

Reports received in the United States show that, due to a late and cold spring, the sowing of crops in the Soviet Union has been delayed for a long time.

By May 1, the U. S. Department of Agriculture says, the Russians had seeded over 82,500,000 acres. This is 3,400,000 fewer acres than Russian farmers had seeded on May 1 last year.

Science News Letter, June 2, 1956

**OPTICAL BARGAINS**

**Photographers!**

Adapt your camera to this Scope for excellent Telephoto shots and fascinating photos of moon!



... See the Stars, Moon, Planets Close Up!  
**ASSEMBLE A BIG 100 POWER 3" REFLECTING TELESCOPE**

... with this Complete 87 Piece "Do-it-yourself" Kit  
**EXCELLENT SCIENCE CLUB PROJECT!**  
**Get Ready to See the Artificial Satellites!**

Everything you need! No machining! Easily assembled! We furnish complete, simple instructions. Kit includes: 3" f/10 aluminized and over-coated Spherical Mirror—80X Eyepiece and 100X Barlow Lens—Cross-line Finder—sturdy 40" Tripod—fork type Equatorial Mount with locks on both axes—ventilated 3" Mirror Mount—heavy wall, black Telescope Tube. All nuts and bolts supplied. Nothing extra to buy. Our 3" Spherical Mirror (30" f.l.) is guaranteed to resolve detail right up to theoretical limit. Your finished scope can also be used terrestrially. Money-back guarantee. Shipping weight, 10 lbs.

Stock No. 85,025-Q.....\$29.50 f.o.b. Barrington, N. J.



This is an actual photograph of the moon taken through our Astronomical Telescope by a 17-year-old student.

**NEW! STATIC ELECTRICITY GENERATOR**



See a thrilling spark display as you set off a miniature bolt of lightning. Absolutely safe and harmless—perfect for classroom experimentation... ideal for Science Clubs. Sturdily made—stands 14" high. Turn the handle and two 3" plastic discs rotate in opposite directions. Metal collector brushes pick up the static electricity, store it in the Leyden jar type condenser until discharged by the jumping spark. Countless tricks and experiments. Instruction booklet included.

Stock No. 70,070-Q.....\$10.95 Postpaid

**SELENIUM PHOTO CELL AND SUN BATTERY**

Requires no external power source for operation. Average sunlight striking the selenium layer of this cell will generate a current of 2 MA under a 10 ohm load. Low cost makes the sun battery an ideal component for experimental as well as actual applications in the photo-electric field. Overall size of cell .724" x .443" x .040". Active cell area .26 square inches. Direction sheet included—also a lens that may be used to collect light and focus it onto the selenium surface.

Stock No. 30,193-Q.....\$2.50 Postpaid

**LOOK! NEW BOOK! 74 PAGES!**

"The Uses of Selenium Photo Cells and Sun Batteries" contains technical information on self-generating devices, including many interesting applications such as light beaming, communication switch circuits, metering devices.

Stock No. 9230-Q.....\$1.50 Postpaid

**INSTRUCTION BOOKLETS**

Easy to follow—accurate—8 1/2 x 11 page size—many illustrations. Do-it-yourself—Save! and have Fun!

	Stock No.	Price Pstpd.
How to Build Projectors.....	9014-Q	30¢
Homebuilt Telescopes.....	9008-Q	40¢
Method to Clean Precision Optics.....	9024-Q	15¢
Homebuilt Riflescopes.....	9018-Q	40¢

**NEW—JUST ISSUED**

How to Condense and Project Light with Lenses.....	9044-Q	75¢
Reticles and Their Uses.....	9039-Q	45¢
ULTRA CLOSE-UP Photography.....	9042-Q	60¢
Infrared Light and Its Uses.....	9040-Q	75¢
Homemade Stereo-Adapters.....	9032-Q	30¢
Homemade Stereo-Viewers.....	9034-Q	30¢
Photo Micrography with Pen Microscope.....	9029-Q	10¢
Dummy Cameras.....	9035-Q	20¢
Collimating Systems.....	9047-Q	35¢
Building a Condenser Enlarger.....	9038-Q	40¢

"ALL ABOUT TELEPHOTO LENSES!" 21 pages—wealth of information, diagrammed instructions. Tells how to build Telephoto attachments—how to use them. Lots of other good dope on Telephotography.  
Stock #9038-Q.....60¢ Pstpd.

Order by stock No. Send Check or M.O. Satisfaction Guaranteed!

**EDMUND SCIENTIFIC CORP., BARRINGTON, N. J.**

**New! 2 in 1 Combination Pocket-Size 50 POWER MICROSCOPE and 10 POWER TELESCOPE**

ONLY \$4.50 ppd.

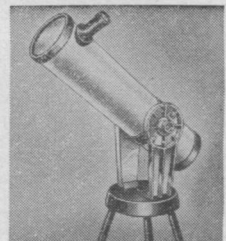


Useful Telescope and Microscope combined in one amazing, precision instrument. Imported! No larger than a fountain pen. Telescope is 10 Power. Microscope magnifies 50 Times. Sharp focus at any range. Handy for sports, looking at small objects, just plain snoping. Send Check or M.O. Satisfaction Guaranteed

Order Stock No. 30,059-Q.....\$4.50

**SPITZ MOONSCOPE**

A precision-made 32 power reflecting telescope—by the makers of Spitz's Planetaryum. Clearly reveals the craters of the moon, shows Saturn, Jupiter, other wonders of the heavens. Based on same principles as world's giant telescopes. Stands 36" high on removable legs. Adjustable 3" polished and corrected mirror. Fork type Alt-Azimuth rotates on full 360° circle—swings to any location in the sky. Fascinating 18-page instruction book is included. Instrument packed in sturdy carrying case.

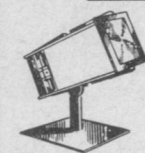


Stock No. 70,068-Q.....\$14.95 Postpaid

**SPECIAL SALE 7x50 MONOCULAR**

This is fine quality. American made instrument—war surplus. Used for general observation both day and night and to take fascinating telephoto shots with your camera. Brand new. \$95 value.  
Stock No. 50,003-Q.....\$15.00 Postpaid

**BUILD A SOLAR ENERGY FURNACE!**



It's easy—inexpensive. We furnish instruction sheet. This sun powered furnace will generate terrific heat—produces many unusual fusing effects.  
Stock No. 80,040-Q—Fresnel Lens, size 11 3/4" x 16 1/2" f.l. 19"  
\$3.50 Pstpd.

**SIMPLE LENS KITS!**

Fun for adults! Fun for children! Kits include plainly written, illustrated booklet showing how you can build lots of optical items.  
Stock No. 2-Q—10 lenses.....\$ 1.00 Postpaid  
Stock No. 5-Q—45 lenses.....\$ 5.00 Postpaid  
Stock No. 10-Q—80 lenses.....\$10.00 Postpaid

GET FREE CATALOG #Q—World's largest variety of Optical Items. Bargains galore... War Surplus—Imported—Domestic! Microscopes, Telescopes, Hand Spectroscopes, Prisms, Lenses, Reticles, Mirrors and dozens of other hard-to-get Optical Items. Ask for FREE CATALOG #Q.