

Introduction

By following the simple instructions outlined in this manual, anyone can properly administer the five psychophysical tests.

Proper administration of the psychophysical tests makes the subject admit his limitations. He must tell the examiner when taking the Visual Acuity Test, "That's as far as I can see." In the Field of Vision Test, he cannot see the targets until they are actually within his field of vision, and so forth. The examiner does not tell the subject that he needs professional visual care, or that his distance judgment is faulty or his field of vision is limited, etc.

Visual acuity, color perception, field-of-vision, depth perception, simple and complex reaction time are all factors for which there is compensation, providing the driver is aware of these limitations and taught how to compensate for them properly.

Preparation

- 1 . Place cabinet on a table 30 inches high and sufficiently narrow to afford the examiner access to rear of cabinet.
- 2 . Open front door by releasing catch and pulling out.
- 3 . VISUAL ACUITY. Open right and left doors by inserting hand inside of cabinet through front door and releasing spring catches on inside of each door. Open doors to a 90° angle with cabinet.
- 4 . FIELD-OF-VISION. Remove perimeter from slots indoor by loosening wing nuts. Remove wing nuts and insert two bolts in holes provided in top front of cabinet. Place perimeter so that the nasal notch faces forward with cord extended to the rear. Affix wing nuts to bolts on inside of case and tighten.
- 5 . REACTION TIME. Remove foot pedal assembly from lower compartment and place on floor directly in front of instrument.
- 6 . Remove extension cord and plug into 110-120 VOLT ALTERNATING CURRENT. Where only DIRECT CURRENT is available, a converter MUST be used.
- 7 . Turn toggle switch inside of instrument to ON position. This illuminates visual acuity charts.
- 8 . The testing unit is now ready for operation.



**Driver Testing
and Training
Device:
Portable
Equipment**

Instructions to the Examiner

Know the simple operating instructions before attempting administration of the tests. You may reword the instructions to suit yourself, but be certain that each person tested receives the same instructions. This will insure uniformity of results and scores.

Psychophysical tests are of major importance for an accident-free record. Stress that the subject, even though he may have a good or a perfect score, should not assume expertness as a driver. Proper driver training experience, correct driver habits, and attitudes are also essential to safe driving.

Visual Acuity Test

Procedure

Seat subject at a point 20 feet from chart. Test each eye separately, starting with the right; the left is covered with a card by placing the long edge on the tip of the nose and the center of the forehead. The left eye should be similarly tested and, finally, both eyes together.

The subject should start at the top of the chart and should read down from left to right.

Scoring

The degree of visual acuity is determined by the smallest letters that can be deciphered separately by each eye when subject is seated 20 feet from the chart. The number at the left or bottom of each line indicates the visual acuity of the subject.

Traffic Color Recognition Test

Procedure

The test is administered by depressing buttons inside the lower compartment in rear of timer to activate colored traffic lights and having the subject identify them by their correct color.

Field-of-Vision Test

Procedure

Have the subject sit in front of the instrument and place his nose in the notch so that his eyes are on a level with the upright bar of the movable targets. Instruct him to focus his eyes on a convenient object in front of the apparatus.

Move the targets slowly from the 100° mark by first pulling one string until the subject says he sees the target; then follow the same procedure with the other string.

Watch to see that the subject does not move his head or shift his eyes during the test. Hold the strings taut with your hand out of sight behind the cabinet.

Scoring

A lateral range of 75° from the focus line is the minimum standard acceptable for each eye. (A person with vision in only one eye should have a lateral range of 1350.)

Note. The red, amber and green lenses are removable to permit interchange of the three positions. This prevents subject from predetermining color locations.

Reaction Time Test

Procedure for Simple Reaction Time

Seat the subject directly in front of the cabinet so that he is facing the colored lights.

Instruct the subject to make himself comfortable and to place his right foot firmly on the button (accelerator), and his left foot on the plate marked same. As soon as he sees the light, he is to move his right foot as quickly as possible from the accelerator button to the brake pedal. After he has applied the brake, he must remove his foot from the brake pedal and bring it back to the accelerator.

Instruction to the Examiner

Make certain that the subject is firmly depressing the accelerator and that the green light is on.

Press the timer switch button. This turns the green light off, the red light on, and starts the electric timer.

Important: Be sure to release the red button *before* the subject removes his foot from the brake pedal. Then read the scoring shown on the dial in 100ths of a second. Give the subject a minimum of three trials.

Procedure for Complex Reaction Time

Now tell the subject that this will differ from the Simple Reaction Time Test in that he will have to make more than one decision. Point out that on the road a driver makes at least 10 decisions a mile or as many as 40 to 50 decisions an hour, depending on the speed at which he is traveling.

Instruct the subject that if the amber light appears, he is to decelerate (lift foot from the accelerator button), *but not apply the brake*. If the red light appears, he is to make an emergency stop as in the Simple Reaction Time Test. We are now bringing into play the “think factor.” The subject’s attention has been diverted and he has to think before making the proper decision. Generally, this will slow down his reaction time and will more closely approximate actual driving performance on the highway.

The important thing is that, as an educational means, you can very easily point out the importance of the “think factor” in driving and get across the significance of stopping distances, following distances, etc.

- Scoring for Simple Reaction Time: 0.4 to 0.6 second average is acceptable.
- Scoring for Complex Reaction Time: 0.4 to 0.6 second average is acceptable.