Human factors are key issues in X-ray screening. The most expensive X-ray machine is of little value if the security officer who operates it does not have the necessary ability to interpret X-ray images.

Various scientific studies have shown that there are substantial individual differences in visual abilities, such as mental rotation, figure ground segregation and visual search, which are crucial in X-ray screening.

Employees with distinctive visual abilities can learn faster and generally achieve a 20% higher level of threat detection performance in assessment tests compared to X-ray operators hired without a previous pre-employment assessment.

Choosing the right person thus helps to minimize training costs while, at the same time, increasing security and efficiency at the checkpoint.

The X-Ray ORT is a fast, easy-to-use and reliable tool in the employment procedure of potential X-ray operators.

CASRA security experts designed the X-Ray ORT for people with no previous knowledge of how items are displayed on an X-ray machine. The test therefore only contains grayscale images of commonly known items, such as guns and knives.
LEVEL OF DIFFICULTY
SYSTEMATICALLY VARYED

The items selected for this test systematically vary in their level of difficulty, based on object rotation, superposition, and bag complexity. These are the image-based factors that highly influence threat detection performance.

HIGH RELIABILITY AND VALIDITY

The images for the test were created and pre-validated by security experts and psychologists. Therefore, the X-Ray ORT features excellent reliability coefficients with both Cronbach’s Alpha and split-half values above .90 (.85 is considered as the minimum standard).

WIDE RANGE OF APPLICATIONS

The X-Ray ORT can be applied wherever X-ray machines are used, that is at airports, prisons, nuclear power plants, courts, military, event locations, etc.

SOFTWARE INTERFACE

For system requirements and further information on the X-Ray ORT please visit our FAQ.
You can find a summary of a study involving our X-Ray ORT in the CASRA newsletter issue 1.
If you would like to receive short and understandable articles summarizing our research results and security trends please subscribe to our newsletter.