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ABSTRACT

Eye-tracking and pupillometry:
Methodology and potential applications
in cabin safety research.

"Eye-tracking" is the ability to determine what a person is looking at. "Pupillometry" is the ability to measure the change in diameter (size) of the pupil of the eye. Pupil size can change in response to changes in the emotional status, mental activity, arousal, and attitude of a person. It is under autonomic nervous system control and, therefore, not usually within conscious control of the person.

Using this technology we can evaluate, for example, how potential passengers view safety briefing cards, video tapes, or 'live' safety briefings. This technology could reveal what is being viewed (or missed), distractions, confusions, level of understanding, and ease-of-understanding of these safety briefing messages. It could, also, show what potential passengers see when opening an exit hatch, searching for directional signs, etc.

Using this technology we can evaluate, for example, how flight crew members view their various tasks. It could show what the flight attendants are viewing (or missing) as they pass through the cabin checking seat belts, aisle obstructions, seat positions, locked position indicators of cabin exits, etc. It could show what the pilots are looking at during their pre-flight check, take-off, flight, and landing. It could show what the crew views (or misses) during simulated emergencies.