Perception and Performance
Technical Group

The Perception and Performance Technical Group's primary purpose is to promote exchanging information about perception and its relation to human performance. As its name implies, PPTG encompasses *all* sensory/perceptual modalities, not just vision. Areas of concern include the nature, content, and quantification of sensory information and the context in which it is displayed; the physics and psychophysics of information display; perceptual and cognitive representation and interpretation of displayed information; assessment of workload using tasks having a significant perceptual component; and actions and behaviors that are consequences of information presented to the various sensory systems.

TECHNICAL FOCUS

Because the perceptual processing of sensory information is relevant to so many aspects of human performance across modalities, the professional interests and activities of PPTG members are diverse. Some individuals conduct research on perceptual processes and the impact on performance of displaying information in specific sensory modalities, whereas others apply the results of this research to the design of information displays and supporting products. And many do both. In general, PPTG members are interested in the design of all types of information displays, the capabilities and limitations of the human as a user of complex systems, and improving the interface between humans and the systems and products they use. Specific areas of interest include the following:

Psychophysics and Psychophysiology
- Display quality and sensory processing
- Eye Movements
- Motion perception
- Auditory/tactile communication systems (e.g warings)
- Evoked potentials
- Discrimination of auditory/tactile signals
- Target detection and monitoring

Color Vision
- Color discrimination and recognition
- Color coding and formatting

Crewstation Design
- Display and control layout
- Multimodal displays

Human-Machine Interface
- Time-sharing and mental workload
- Mental models of complex systems

Display Technology and Display Design
- CRTs and flat-panel displays
- 3-D and large-screen displays

- Warning displays
- Head-up and helmet-mounted displays
- Night-vision goggles
- Auditory signals, alarms
- Sonification displays
- Displays for the sensory impaired
- Transportation displays
- Virtual Environments

MEMBERSHIP

The PPTG has more than 400 members. Most are employed either by: manufacturers, engineering firms, universities, or government agencies, but some work, as consultants. A growing number are undergraduate and graduate students. Most are also members of the Human Factors and Ergonomics Society, and many belong to other professional societies.

BENEFITS OF MEMBERSHIP

The PPTG provides its members with numerous benefits. For example, PPTG sponsors 5 to 9 technical sessions as well as invited symposia and joint technical sessions at the HFES annual meetings, awards $500 prizes for best student papers, and helps co-sponsor both invited lectures by distinguished experts and joint symposia with other professional organizations. Members receive PPTG's newsletter *INSIGHT* several times each year and can check what's going on anytime using our website (http://tg.hfes.org/pptg/). They also can send and receive messages to the entire TG over our listserv. All of this helps foster communication among our membership and provides them with timely, useful information. Of course, PPTG members participate in our elections and can nominate or serve as officers of the PPTG.

Membership is open to everyone who shares PPTG's interests, regardless of whether they are HFES members. To join PPTG you can apply online at http://hfes.org.

SUCCESS STORIES

Members of the PPTG of the Human Factors and Ergonomics Society have been involved in a number of successful programs, products, and research areas. A few are described below.

- **HFES/American National Standards Institute VDT Standard.** The *American National Standard for Human Factors Engineering of Visual Display Terminal Workstations* was developed by human factors professionals. The standard represents the best empirically supported standard in this area and constitutes a significant contribution from the human factors community to manufacturers and industry at large.

- **Color Displays in the Boeing 757/767 Flight Decks.** The Boeing 757 and 767 commercial aircraft were the first in the U.S. to use color CRTs on their flight decks. These CRTs display the primary attitude director indicator and horizontal situation indicator as well as engine status and crew alerting functions. Human factors professionals performed extensive studies to ensure that the displays would remain readable over the full range of lighting and viewing conditions encountered during flight. of how empirically derived human factors principles led to a life and property-saving improvement in motor vehicle design