

Appendix A
Photos of FMT Hardware
(Applies to both Canada and U.S. Study Phases)

SleepWatch® sleep management tool provided by Walter Reed Army Institute of Research (Silver Spring, MD)

SleepWatch® analog performance “fuel” gauge

SleepWatch® in clock mode



Button press to view “Performance-Readiness,” which is displayed as a percentage (P) from 0-99%; in this example, as “75P” or 75% optimal.



SleepWatch® as worn on
the wrist



The CoPilot® infrared retinal reflectance monitor for PERCLOS measurement (slow eyelid monitor) provided by Attention Technologies (Pittsburgh, PA)

PERCLOS display (left) and infrared detector (right). Feedback from the system was provided on a separate digital display box (left below) and consisted of a *CoPilot®* proprietary algorithm score from 0 to 99, where 0 indicated maximum eyelid closure and 99 indicated minimum eyelid closure.



**SafeTRAC® lane-tracking system provided
by AssistWare (Wexford, PA)**

The SafeTRAC photograph depicts a vehicle green line centered within two sets of painted lines: a solid vertical lane marker on the right (e.g., road shoulder), and the equal sign (=) on the left (e.g., dashed painted lane marker). In this photo, the digitally-displayed algorithm-based alertness score, which can range from 0 (low alertness due to poor lane tracking) to 99 (high alertness due to excellent lane tracking), is 86.



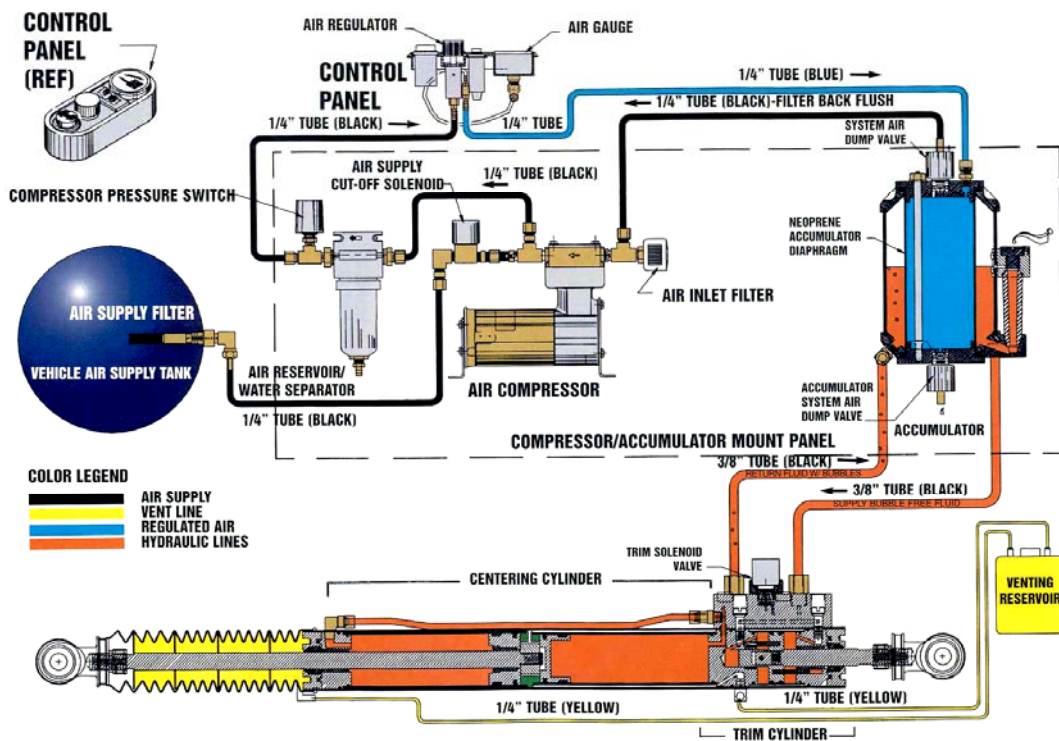
SafeTRAC mounted in truck. Display indicates “alertness” score of 92 out of 99 (maximum “alertness”).



Howard Power Center Steering system provided by River City Products (San Antonio, TX)

The HPCS consists of two principal components, the Hydraulic Power Centering Cylinder and the Air Activated Hydraulic Pressure Accumulator. The source of hydraulic steer wheel centering pressure comes from the Air Actuated Hydraulic Pressure Accumulator. The air and fluid chambers in the accumulator are separated by a flexible membrane that serves as a diaphragm, whereby the air and fluid pressures are always the same but do not mix.

HOWARD POWER CENTER STEERING SYSTEM using Vehicle Air Supply with Optional Electric Compressor
(Typical Hydraulic and Air Line Layout)



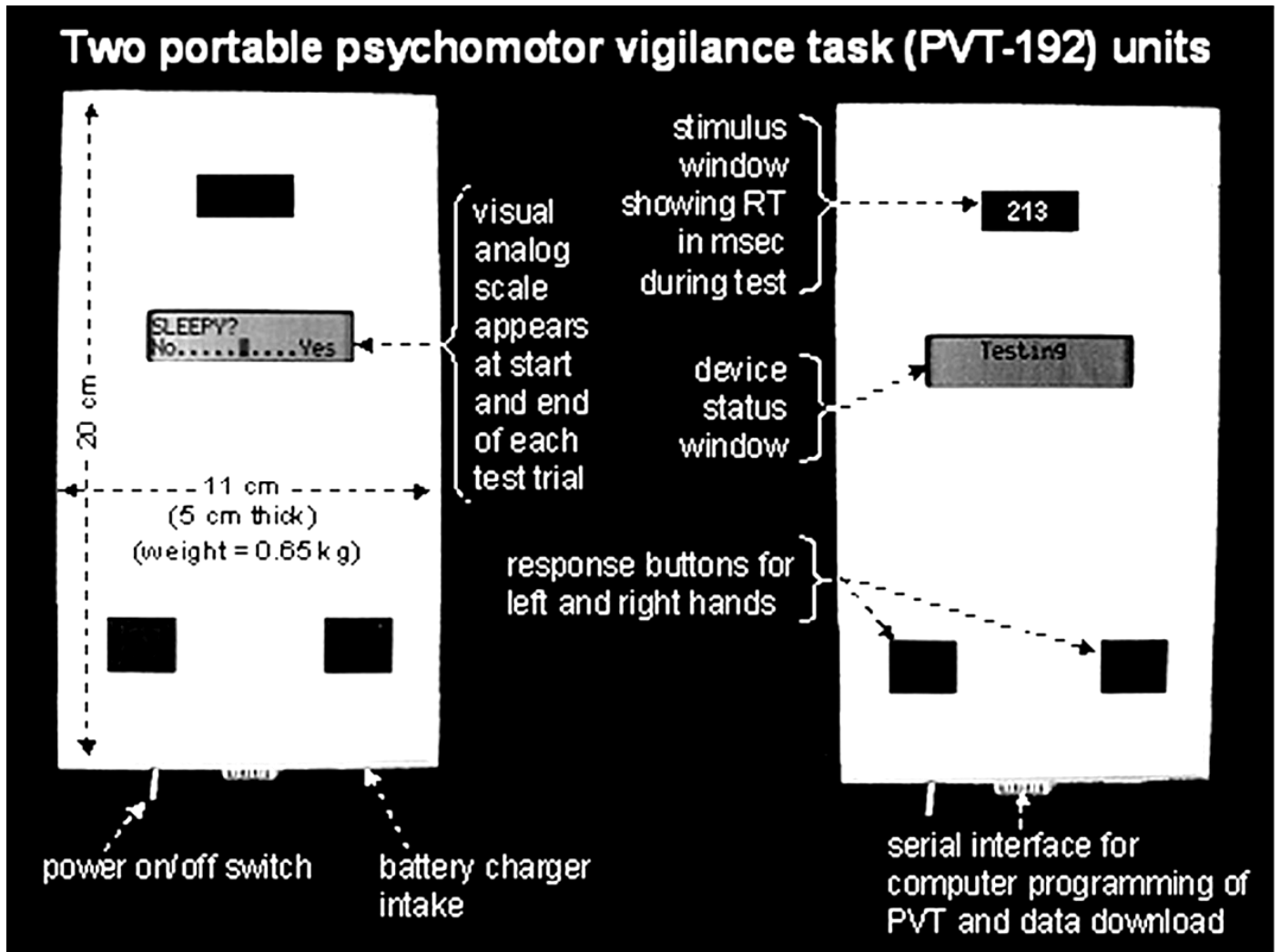
HPSC control unit accessible to driver



AP+ black box recorder
provided by Accident Prevention Plus (Palm Beach Gardens, FL)



Psychomotor Vigilance Test device (PVT-192, Ambulatory Monitoring, Inc.) provided by Dr. David Dinges, University of Pennsylvania (Philadelphia, PA)



Motor freight carrier companies that participated in the study

Challenger Motor Freight participated in Study Phase 1 in Canada. Their drivers operated single tractor-trailer units with sleeper berths. Approximately 74% of their driving was conducted during daylight.



Con-Way Central Express participated in study phase 2 in the USA. Their drivers operated tandem tractor-trailer units without sleeper berths. Approximately 93% of their driving was conducted during the night.

