

**Portal Shield  
CLS Mission Essential Tasks**

1. Task: Align and Calibrate the XM99 Laser Detector

Condition: Given a deployed sensor, an oscilloscope, an alignment monitor, alignment checklist and other current publications, Phillips screwdriver, potentiometer adjustment tool, and other appropriate hand tools.

Standard: At the conclusion of this task, you will have aligned and calibrated the detector so that it will read developed Portal Shield assay strips and return no inconclusives or false positives in accordance with established technical publications

2. Task: Align the XM99 Robot to the Hotel

Condition: In a workshop or on a deployed Portal Shield sensor using a Portal Shield test bench and assorted electronic hand tools.

Standard: Using established technical publications align the Portal Shield robot so that no “caddy retrieve” errors will be returned during normal operations or Sample and Identification procedures.

3. Task: Met One Error Correction and Calibration: Counter Calibration Error

Condition: On a workshop mounted XM99 test bench using a Digital multimeter, reagent grade alcohol, prescribed cleaning devices, applicable technical publications and appropriate hand tools.

Standard: Adjust laser current and laser calibration voltage to tolerances listed in the current Portal Shield PSTB 99-004

4. Task: Met One Error Correction and Calibration: Counter Flow Error

Condition: On a workshop mounted XM99 test bench using the Prescribed airflow meter, applicable technical publications and appropriate hand tools.

Standard: Adjust airflow to read 100% +/- 10% or in accordance with current Portal Shield TB PSTB 99-004.

5. Task: Replace Portal Shield XM99 Computer Hard Drive

Condition: In a clean and environmentally controlled workshop environment, using appropriate static discharge precautions, serviceable hard drive, applicable technical publications and proper electronic hand tools.

Standard: Upon completion of this task no error messages are received and the computer supports all functions of the Portal Shield XM99 Biological Agent Detector.

6. Task: Install Software Image on Hard Drive

Condition: On a deployed sensor or command post computer, using A bootable 3.5" floppy disk, PCMCIA drive with image Program and applicable software and appropriate technical publications.

Standard: Upon completion of this task, the latest version of XM99 software will be installed and the system will perform all functions of the Portal Shield XM99 Biological Agent Detector without error.

7. Task: Troubleshoot and Repair the XM99 Power Supply: Replace Laser Relay

Condition: On a workshop environment bench using a Digital multimeter, a new solid-state relay, proper grounding devices, soldering station and other appropriate electronic hand tools, applicable technical publications and employing all necessary safety procedures.

Standard: Upon completion of this task the power supply will provide proper electrical power to operate the XM99 laser Detector.

8. Task: Troubleshoot and Repair the XM99 Power Supply: Replace PFC 600 Power Module

Condition: Given an unserviceable XM99 power supply workshop environment, using a digital multimeter, a new PFC 600 DC converter, proper grounding devices, soldering station and other appropriate electronic hand tools, applicable technical publications and employing all necessary safety procedures.

Standard: Upon completion of this task the power supply will function as designed and will provide power, as specified in the equipment publications, for the various components of the XM99 Mark III biological agent detector.

**9. Task: Troubleshoot and Repair the XM99 Sampler**

**Condition:** In a workshop environment on a Mark III test bench, given an XM99 sampler module with low or no fluid sample, using vacuum and pressure gages, digital multimeter, and other appropriate hand tools and applicable technical publications.

**Standard:** Upon completion of this task, the sampler will, upon Request, collect a minimum 7 ml of sample, and fill the pre-measured sample chamber, inject contents of pre-measured sample chamber, and flush the remainder of sample into the waste receptacle.

**10. Task: Perform Preventive Maintenance Checks and Services on the 5KW Tactically Quiet Generator (TQG) set**

**Condition:** On a deployed 5Kw Tactically Quiet Generator Set, given the current Technical Manual with PMCS Charts, appropriate hand tools, fuel and lubricants and cleaning equipment.

**Standard:** Upon completion of this task, the TQG set will be mission capable I/A/W current Technical Manuals and US Army maintenance doctrine.

**11. Task: Download Sensor and Command Post Operating Data**

**Condition:** Given an operational Portal Shield Command Post, an operational deployed XM99 sensor, a PCMCIA hard disk or other suitable storage device.

**Standard:** All Command Post and Sensor system operational data will be down loaded from the respective computers and written to a compact Disk (CD) in accordance with current Standing Operating Procedures (SOP).

**12. Task: Demonstrate Command Post Startup, Network activation, and Shutdown Procedures**

**Condition:** Given a Portal Shield CPC, network configuration specifications from the Portal Shield CLS Supervisor, and TM 3-6665-357-10, place the CPC into operation receiving data from the networked sensors.

**Standard:** At the conclusion of this task, you will have performed startup of the Command Post Computer (CPC) IAW TM 3-6665-357-10. Additionally, you will have configured the CPC with the specifications directed by the Portal Shield supervisor and ensured that the sensors and the CPC were communicating.

13. Task: Perform Preventive Maintenance Checks and Services On the XM99 Sensor

Condition: Given a Portal Shield Sensor Site with a Mark III sensor and all ancillary equipment, pre-configured Hotel module, serviced Waste/Supply Fluid module, spare modules, removal tool, paper towels, compressed air, hazardous waste bag, appropriate Technical Manuals, perform a complete Preventive Maintenance Checks and Services (PMCS) check of the system.

Standard: Maintain the Portal Shield Sensor Site IAW TM 3-6665-357-10 and other current publications. Perform the appropriate maintenance steps for the specified time interval, replacing all consumables as needed, or performing the proper troubleshooting steps to correct all faults.

14. Task: Setup and Adjust the Portal Shield Power Management and Control System (PMCS)

Condition:

Standard:

15. Task: Demonstrate the Use of the DOD Sampling Kit (Hand Held Assay)

Condition: Given a Hand-Held Assay, disposable pipette, unknown liquid sample, timer or watch, 5% bleach, paper towels, Personal Protective Equipment (PPE) IAW SOP, hazardous waste bag, radio or other communications equipment, and a well lighted, flat surface to perform the testing on, you have been tasked to perform presumptive identification for biological agents on an unknown liquid sample.

Standard: Performed presumptive identification for up to eight agents simultaneously. Correctly interpret the results within 15 seconds after the timed incubation and reported the results to the proper authority.

16. Task: Prepare a Biological Agent Sample for Evacuation

Condition: Given a suspected biological sample, Personal Protective Equipment (PPE), sample container, CD or other media containing data from respective sensor, laboratory film, tamper resistant tape, plastic sample bags, absorbant material, adhesive labels, pen, twist ties, appropriate mailer, 5% bleach, paper towels, hazardous waste bag, chain of custody document, approved sample transfer case, temperature control mechanism such as ice, you are instructed to prepare suspected biological agent samples for shipping.

Standard: Prepared the sample, testing media, and data for evacuation IAW FM 3-101-4 Appendix H. Completed a chain of custody form and maintained the chain of custody for the sample throughout the packaging process. Maintained the proper temperature as instructed by the receiving laboratory throughout the packaging process.