

**USAMMDA INFORMATION PAPER**

**PRODUCT: ROTARY VALVE PRESSURE SWING OXYGEN GENERATOR**

**DESCRIPTION:** The Rotary Valve Pressure Swing Oxygen Generator (RVPSOG) is designed to replace the "D" cylinder for patient care and transport. The RVPSOG is a substantial simplification of existing pressure swing adsorption oxygen generator technology. The use of a rotary valve, driven directly by a small motor, eliminates complex valve and control systems used in conventional oxygen generators. Taking advantage of the reduced complexity reduces the weight and size of the oxygen generator and increases the efficiency of the generation process. This project will develop a portable device to meet the combat developers requirements for a point-of-use oxygen generator.

**PROGRAM RELEVANCE to the ARMY:** This product supports both the core mission of the Army and the Army Campaign Plan. Of the Army's core competencies, this product supports "Forcible Entry Operations," "Sustained Land Dominance," and "Support of Civil Authorities." Oxygen is a key element in the resuscitation of combat casualties. The RVPSOG will reduce the medical footprint, both during initial entry and during re-supply, by eliminating the need to supply one 150-pound oxygen cylinder per day for each patient requiring oxygen. This product supports Future Operational Capabilities: MD-02-001 Clearing the Battlefield and MD-02-002 Hospitalization.

**ISSUES/ACTIONS:**

- A 3-liter per minute 10-pound prototype has been constructed; it is 6 inches in diameter and 18 inches long. This prototype will be demonstrated in the 2Q04.
- Development of the scroll type air compressor is continuing; the rotary motion of the scroll reduces noise and vibration.
- The oxygen generator molecular sieve bed has been optimized for the available airflow and the required oxygen output.
- Design work has begun on the 8-pound oxygen concentrator. This device will be approximately 4 inches in diameter and 12 inches long.
- A modification of the existing Food and Drug Administration (FDA) documentation has been submitted for approval.

**ADDITIONAL INFORMATION:**

**BPL # 436**

**DA PROJECT/TASK:** Trauma Management –  
PE/PROJ 643807/836JV

**MAMP RANK:** 12/36

**ARMY ORD:** A draft ORD has been initiated.

**SCHEDULE:**

Project Start	1QFY03
MS A/B	1QFY05
MS C	1QFY06

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