EFFECTS OF LONG-TERM TEMPERATURE EXTREMES ON SELF-CONTAINED SELF-RESCUERS: INITIAL FINDINGS

Report to the Director of the
Office of Miners' Health, Safety and Training

Randall J. Harris and J. Wayne Ashby

October 30, 2006

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Randall J. Harris[1] and J. Wayne Ashby[2]

The results of this study suggest that the CSE Corporation's SR-100s carried by Office of Miners' Health, Safety and Training (OMHS&T) inspectors and exposed in their vehicles to excess temperature for extended durations in disregard to manufacturers instructions may not function at performance levels necessary for escape.

Based upon the reaction of others to OMHS&T raising the issue many seem to have made the same mistake. The impact of this study, even before publication, has been to spark a series of actions that will result in closer attention to SCSR inspection and hopefully a new respect for these devices as the life saving appliances they are. Indeed, the lesson learned could be summarized as follows:

IF YOU DON'T TAKE CARE OF YOUR SCSR, IT MAY NOT BE ABLE TO TAKE CARE OF YOU.

BACKGROUND

Responding to the leadership of Governor Joe Manchin and the West Virginia Legislature, the Office of Miners' Health, Safety and Training (OMHS&T) began an independent investigation into mine safety technology in February 2006 in association with the implementation of West Virginia Senate Bill 247[3]. As part of those investigations OMHS&T gained increased sensitivity to the relationship between reduced service-life and exposure of Self-Contained Self-Rescuers (SCSR) to excessive temperatures. The evaluations reported here are in response to concerns resulting from these activities.

In June 2006, Acting Director of OMHS&T James Dean directed that an investigation into the possibility of excessive heat exposure to units carried by OMHS&T inspectors be made. A review of typical handling procedures by inspectors indicated that it was likely that OMHS&T had exposed their units to temperatures in excess of the manufacturer's limits. A statistically significant random sample of the office's SCSRs was collected and subjected to simulator testing to determine if the exposure affected performance. The study protocol was designed to produce results comparable to those by NIOSH in their Field Evaluation series[4] the most comprehensive published studies on deployed SCSRs.

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[3] West Virginia Senate Bill 247 which resulted in the promulgation of West Virginia Code Title 56 Series 4 effective February 27, 2006 and revised June 9, 2006 (http://www.wvminesafety.org)

[4] NIOSH Reports of Investigations No. 9401, 9635, 9451, and 9656 covering testing done from 1982 - 1999

Many of the OMHS&T insights on the need of training miners regarding handling, metabolism and SCSR response have CSE Corporation's Sam Shearer at their root. He has drilled into us since our first meeting on this subject in March of 2006 the need for miners to understand how their bodies related to the effective working of an SCSR and the need to treat the devices with care. CSE Corporation facilitated the timely testing by expediting the OMHS&T purchase order for replacement SCSRs[5], NIOSH documents and their staff provided valuable experimental design details. Review of results and early drafts of this report were provided to CSE Corporation, NIOSH and MSHA with comments incorporated as appropriate.

INTRODUCTION

While the results in this study relate to the SCSRs carried by OMHS&T inspectors at the time the study was conducted, the issue raised is applicable to all units. Each manufacturer has defined temperature limits and users need to be aware that there are consequences if they are exceeded.

Technical staff and inspectors within the OMHS&T routinely enter underground mines in the course of their duties and are thus issued belt-wearable SCSRs. At the time of these tests (August 28-31, 2006), the agency had eighty SCSRs all of which were a model SR-100 belt wearable SCSRs manufactured by CSE Corporation of Monroeville, Pennsylvania[6]. The inspectors' general practice has been to keep their SCSRs in their vehicles when not being worn.

According to the Federal Mine Safety and Health Administration (MSHA) and the National Institute for Occupational Health and Safety (NIOSH) publications exposure to excessive temperature causes premature aging and breakdown of rubber components, such as breathing hoses. All SCSR manufacturers recommend a temperature range for storage; the SR-100 is not to be exposed to temperatures greater than 130 degrees Fahrenheit or below 32 degrees Fahrenheit[7].

The CSE Corporation began providing excess temperature indicators[8] with SR-100s shipped in August 2004[9] and is currently the only manufacturer providing them. Of the eighty SR-100s owned by OMHS&T only six were so equipped.

A study was made of the temperature within parked state vehicles during the month of July 2006. The vehicles routinely achieved daytime ambient temperatures in excess of 130 degrees Fahrenheit with the maximum temperature recorded at 170 degrees Fahrenheit. It is assumed that these temperatures are representative of those experienced by SCSRs kept in vehicles during

[5] Twenty SR100's were delivered on August 21, 2006
[6] http://www.csecorporation.com/
[7] CSE, SR100 Manual, SRX-206-H, October 24, 2005
[8] The Heatwatch #24319 indicator is manufactured by Shockwatch Inc. It is a metallic polyester film coated with an enzyme embedded in fatty acids. The indicator changes color when exposed a constant temperature of 3.5 degrees Fahrenheit above the target of 130 degrees Fahrenheit. (www.shockwatch.com)
[9] CSE Marketing Bulletin #MB120, August 19, 2004

summer months with temperatures below 32 degrees Fahrenheit in the winter and cycling between extremes during fall and spring.

A protocol modeled upon published NIOSH SCSR studies was selected. When first briefed on the protocol, CSE expressed concerns about the use of NIOSH simulator tests as the company did not feel they adequately simulated the operation of its SCSR and suggested using the CSE custom built simulator. However, the OMHS&T decided that to facilitate comparison with previously published results a machine of the same make and configuration as that used in the NIOSH tests should be utilized. Initial conversations with NIOSH indicated that access to its simulator would require approvals that would add delays inconsistent with OMHS&T's schedule. Therefore, arrangements were made to rent the laboratory of Ocenco Inc., the manufacturer of the simulator for the OMHS&T testing. During the review of the drafts of this report OMHS&T became aware that NIOSH had given internal approval to use their facilities prior to our testing but that information, unfortunately, had not been communicated to us.

EXPERIMENTAL PROTOCOL

The study reported here involved the examination and/or testing of thirty-two SCSRs. Of these:

- eighteen SCSRs manufactured from 1996-1998 were tested for performance (one new SCSR and seventeen deployed SCSRs)
- two SCSRs were disassembled to recover starter cylinders without activation (one 1998 and one 2005), and
- twelve SCSRs manufactured before August 2004 were activated to test starting cylinders only (these SCSRs had been removed by underground operators because they did not pass the manufacturer's required testing).

The selection of the number of SCSRs to be tested from the OMHS&T inspectors was made to achieve a 95 percent (+/- 5 percent) confidence that a failed SCSR would be identified. All inspector SCSRs manufactured before August 2004 were assigned a random number and the selected SCSRs were replaced with new SR-100s purchased from CSE Corporation.

The protocol utilized was as close as possible to that described by the National Institute for Occupational Safety and Health (NIOSH) in its report Self-Contained Self-Rescuer Field Evaluation: Seventh-Phase Results[10]. Contact was made with NIOSH to confirm interpretation of the protocol and critical parameters.

Inspection of the SR-100s was modeled on the investigation protocol for SCSRs provided to the OMHS&T by MSHA for the Aracoma Alma Mine No. 1 Mine Fire and the manufacturer's daily and 90-day inspection procedures[11].

[10] N Kyriazi, "Self-Contained Self-Rescuer Field Evaluation: Seventh Phase Results, NIOSH, RI-9656, March 2002 – results of tests conducted May 1999 through August 2000 (Nicholas Kyriazi, 412-386-6478, or nkyriazi@cdc.gov)

[11] CSE SR100 manual SRX-206-H, October 24, 2005

The protocol:

- Catalog (manufactured date and serial number) and create a visual record of SCSRs
- Sanitize as needed and conduct manufacturers recommended inspection[12]
- SCSRs were opened following donning procedures without actually activating the SCSRs
- Assess condition of breathing hoses and bags as well as other components
- Perform tests on the Automated Breathing Metabolic Simulator
    - ABMS/3 was calibrated (Appendix A)
    - SCSR was placed on inlet pipe secured with nylon tie and interface between mouthpiece and pipe packed with putty
    - A leak test was performed to ensure to -200 mm H_2O for 100 seconds[13]
    - Data logging was begun as soon as the ABMS/3 was started however the first two minutes were not used in tallying results.[14]
    - SCSR was then allowed to automatically breathe
    - If the SCSR's breathing bag collapsed (flat bag) the bypass value on the artificial lung was opened to simulate taking a breath to restart the SCSR (repeated if necessary until the breathing bag re-inflated)
    - Data logging was stopped once inspired resistance exceeded 95 mm H_2O. Once the program was stopped, the ABMS/3 takes several more breaths so exact end point varies from 95 to 100 mm H_2O[15]
    - The SCSR was removed and allowed to cool
    - SCSRs were then dissected to inspect the chemical bed (once the starter cylinder issue was noticed these were removed for later examination)

The Ocenco Automated Breathing Metabolic Simulator (ABMS/3) was selected for determining the performance of selected SCSRs. The ABMS/3 and its predecessor, the Deec Systems prototype, have been used by NIOSH in performance and audit testing of closed circuit breathing devices since 1980, including for all of the NIOSH Field Evaluations. Additionally, the ABMS/3 is used by the US Navy's Panama City Testing Laboratory and US Army's Aberdeen Proving Ground in similar applications. The specific ABMS/3 used for the OMHS&T testing is also used as part of the manufacturing quality control procedure by the Ocenco company and its calibration and calibrations procedures are audited annually by NIOSH, DoD, and the British and South African governments.

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[12] Visual inspection of unit followed by an inspection of the two moisture indicators and temperature indicator (if included), and the acoustic solids movement detector test.

[13] NISOH RI-9656 uses a version of the Drager BG-174A leak test that allows for a 10 mmH_2O decay at 70 mmH_2O negative pressure over 60 seconds. The test used here is more restrictive with no units falling below 20 mmH_2O decay at 200 mmH_2O negative pressure in 100 seconds

[14] The first 60 seconds were to make sure all valves were in the proper position and the sensors were warmed up at which point the oxygen actuator tag was pulled to activate the compressed oxygen cylinder and the second 60 seconds was to allow the oxygen from the cylinder to diffuse throughout the system.

[15] 42CFR 84.90(c) sets an inspiration limit of 100 mmH_2O or 4 inches water-column height and 51 mmH_2O or 2 inches water-column height for expiration at 40 liters per minute with 25 respirations per minute on closed-circuit breathing devices with a peak inhalation flow rate of approximately 115 liters/minute. The ability to tolerate breathing resistance is a function of the elastic recoil capacity of the lungs. Miners with emphysema or similar lung conditions will be less tolerant of high inspiration pressure. Qualitative testing done by OMHS&T of various tolerance of breathing resistance levels by typical miners indicated that 100 mmH_2O was an inspiration threshold at which most felt they were not getting adequate air.

While there have been debate among manufacturers and professionals involved in SCSR review about the accuracy of simulation testing in reproducing certification results, it was selected for the OMHS&T test to be consistent with NIOSH Field Evaluation series of reports.

Manufactured under a license from its inventor, Deec Systems Inc of State College Pennsylvania, the ABMS/3 consists of a bi-directional artificial lung assembly in which respiratory gases are heated and humidified to simulate human respiratory metabolism. Data is acquired through the use of dedicated oxygen, carbon dioxide, flow meters manufactured by AEI Technologies, temperature and humidity probes and a data acquisition board installed in an Intel based workstation running the Microsoft NT operating system. The algorithm used to control the simulator was developed by Penn State University's Noll Human Performance Laboratory with Deec Systems Inc. developing the prototype simulator under contract with NIOSH[16]. The resultant design was refined through experience at NIOSH's Personal Protection Technology Laboratory (NPPTL) in Pittsburgh Pennsylvania and is exclusively licensed to Ocenco for commercialization. The algorithms are programmed in National Instrument's LabVIEW™, a commercially available scientific data acquisition and analysis software.

The ABMS/3 completely simulates the metabolic response of a human subject at any exercise level and concurrently performs instantaneous measurements of a complete set of respiratory response variables. Simulation includes: 1) dynamic metabolic simulation of oxygen consumption, carbon dioxide production, water vapor exchange, and nitrogen exchange; 2) temperature and humidity for both inspired and expired cycles; and 3) breathing characteristics including ventilation volume, frequency, and breathing waveform shape. Also, the ABMS/3 is capable of following a predefined exercise protocol such as those prescribed in the NIOSH testing procedures (often called "Man Test protocols").

Calibration of all critical control components is automated to assure maximum accuracy and repeatability. These critical control components include gas analyzers, metabolic control valves, pressure transducers, and temperature transducers. Metabolic calibration is all referenced to two, easily traceable, internal standards: 1) the physical displacement of the precision lung flow control and 2) the internal calibration gas mixture which is precisely analyzed by a standards laboratory. Automated calibration includes measurement of the gas analyzers transport and response times.

Measurements are all performed with methods which are consistent with accepted instantaneous, "breath-by-breath" sampling and measurement techniques. All input parameters are measured at 60 samples per second. Data is "time phased" based on system timing calibration. Time weighted integrations are performed on most parameters (for average values). Volume weighted integrations are performed for all gas exchanges volume rate calculations. Calculations are performed independently for both expired and inspired breathing cycles. Minimum and maximum values are measured where appropriate and are all derived from instantaneously measured data.

[16] Kamon, Deno, & Vercruyssen "Physiological Responses of Miners to Emergency. Vol. I and II" [1984], University Park, PA: The Pennsylvania State University, U.S. Bureau of Mines contract No. J0100092

Metabolic simulation control is performed at a 60 updates/sec rate. Metabolism is simulated by precision valves which inject carbon dioxide, withdraw oxygen, and inject nitrogen gas through a mixing system which closely simulates the characteristics of the exchange dynamics in the human lung. To maintain accurate and repeatable simulations, all metabolic gas flows are recalculated and adjusted repeatedly throughout the simulation based on metabolism specified by the current protocol state and the most recently measured airway gas concentrations.

The ABMS/3 protocol selected, the BD-1830 waveform, is the same used by NIOSH in its Field Evaluations and is based on the average work rate of man-test-4 as described in 42 CFR 84 Subpart H Table 4.

The Field Evaluation series simulates the average metabolic work rate exhibited by the 50th-percentile miner weighing 87 kg (193 pounds) while performing the man-test-4. This test, while similar to the NIOSH certification test, is not equivalent as it does not impose the high and low work rates that the NIOSH test requires, rather the average work rate. The breathing simulator is set to provide a respiratory rate of 17.9 breaths per minute for a total volume of 30 liters per minute while the metabolic simulation is set for 1.35 liter minute of oxygen consumption with 1.15 liters per minute of carbon dioxide production.

Testing duration was ended when inspired pressure exceeded 95 mm water column equivalent (mm H_2O) whereas testing during NIOSH/MSHA certification ends at a prescribed time.[17] This duration was selected based upon 42 CFR 84 and because very few of the NIOSH results exceeded that value; additionally, OMHS&T testing has shown that most miners consider that value as the upper tolerance limit.

The performance documented here, while informative for comparison to other NIOSH publications, does not necessarily indicate an SCSR's ability to meet or exceed the certification man-test-4.

One of the primary functions of the West Virginia Office of Miner's Health, Safety and Training (OMHS&T) is the collection and timely dissemination of critical health and safety information to the mining community. Not all the data collected was necessary for addressing the objectives of this study, however, all data collected is provided.

RESULTS AND DISCUSSION

All SCSRs selected for ABMS/3 testing had been exposed to excessive heat over extended periods with the exception of a new SCSR used for baseline information. This exposure was in violation of manufacturer's explicit instructions and resulted from a lack of recognition of the elevated temperatures that SCSRs were exposed to when stored in parked vehicles.

[17] 42CFR 84.90(c) sets an inspiration limit of 100 mmH_2O or 4 inches water-column height and 51 mmH_2O or 2 inches water-column height for expiration at 30 liters per minute on closed-circuit breathing devices.

The baseline SCSR was removed from a factory sealed carton, thus the exterior was in pristine condition. It passed all visual testing and the CSE 'acoustic solids movement detector' (ASMD) test[18] to detect changes in the chemical bed. The top and bottom covers opened easily and all interior parts were clean, rubber components were pliable, and the bag was in excellent condition. When activated, the compressed oxygen starter cylinder discharged and the bag filled. Performance on the ABMS/3 was well within the results documented in the NIOSH Field Evaluation and the manufacturer's specifications. The oxygen concentration remained above 19.5 percent[19] from the start and was terminated at 73.5 minutes when the inspired pressure reached 99.77 mm H_2O.
The OMHS&T inspector SCSRs all passed the visual and ASMD testing. However, difficulty was experienced in opening all but one SCSR and banging the SCSR on the floor or use of screwdriver was required to remove the caps.

Several rubber seals between the covers and chemical canister, while appearing intact, had allowed what appeared to be rock dust to penetrate, indicating that pathways for dust must have existed. The moisture indicators[20] were removed and confirmed to be working by placing them in sealed beaker with anhydrous calcium sulfate[21] to remove moisture then exposing the indicators to room moisture to ensure they reverted to their "exposed" state. It could not be determined how the rock dust entered the SCSR even though the moisture indictors had not activated.

The hoses in all but the new SCSRs were sufficiently deformed that they would not expand to their full capacity, although, the wire mesh heat exchanger placed inside the tubes during manufacture provided sufficient airway that when tested without an SCSR attached there was no recorded pressure difference when compared to a test with no device attached. A separate test was done of hoses without an SR-100 connected in which the hoses were subjected to various degrees of constriction. It was determined that significant breathing restriction did not occur until constriction exceeded 75 percent of the cross-sectional area of the hose, which is slightly smaller that the area supported by the wire mesh heat exchanger that extends for the length of the SR100 hose when deployed. It is therefore unlikely that the hose condition contributed

[18] http://www.msha.gov/InteractiveTraining/SCSR/CSE percent20SR-100/lesson01/L1-13.htm
[19] While MSHA discusses a level of 16 percent oxygen in PIB96-19 as "life threatening", multiple federal regulation stipulate 19.5 percent as the minimum oxygen concentration, i.e.: 42CFR84.2(y) defines an "oxygen-deficient atmosphere" as an atmosphere which contains an oxygen partial pressure of less than 148 millimeters of mercury (19.5 percent by volume at sea level). This value is also used by OSHA in 29CFR1910.134(b). NIOSH Publication No. 2005-100 notes that "The minimum requirement of 19.5 percent oxygen at sea level provides an adequate amount of oxygen for most work assignments and includes a safety factor. The safety factor is needed because oxygen-deficient atmospheres offer little warning of the danger, and the continuous measurement of an oxygen-deficient atmosphere is difficult. At oxygen concentrations below 16 percent at sea level, decreased mental effectiveness, visual acuity, and muscular coordination occur. At oxygen concentrations below 10 percent, loss of consciousness may occur, and below 6 percent oxygen, death will result. Often only mild subjective changes are noted by individuals exposed to low concentrations of oxygen, and collapse can occur without warning."
[20] The moisture detector is a small plastic cup that is filled with indicating silica gel ($SiO_2 \cdot H_20 + CoCl_2$) which changes color as it absorbs moisture. The reaction is reversible by heating the silica gel above 212 degrees Fahrenheit or use of other means of dehumidifying the air contact with the indicator.
[21] Commercially know as DRIERITE, $CaS0_4 + CoCl_2$ is a desiccant used as a drying agent for air, industrial gases, refrigerants, organic liquids and solids.

significantly to the breathing resistance. It should be noted that one SCSR's hose broke when deployed; when that hose was replaced with a good hose, the SCSR also passed the leak test.

The breathing bags in the deployed SCSRs were visually discolored and appeared to be more rigid than those of the baseline SCSR, however all SCSRs passed the NIOSH leak test.

The most notable issue encountered was failure of the compressed oxygen cylinder starter to provide sufficient gas to inflate the breathing bag. Of the sixteen SCSRs where the oxygen actuator tag was pulled, only one fully inflated the breathing bag (the new SCSR), one partially inflated the breathing bag, and three SCSRs, while not visibly inflating the breathing bag, did show an initial oxygen increase on the ABMS/3 sensors indicating the presence of some cylinder discharge.

The location of the SR-100 on the ABMS/3 during the testing was within a foot of the operator pulling the actuator tab to release the compressed oxygen. When the oxygen discharges not only will the breathing bag visually inflate an audible sound is heard as the 2,000 psi oxygen exist the cylinder. There was not an instance when sound was heard yet the instruments did not detect the presence of oxygen. Conversely there were occasions when the volume of oxygen escaping was insufficient to create a sound or inflate the breathing bag yet an increase in oxygen was measured by the ABMS/3 system.

Three of the five SCSRs that released some oxygen from their compressed oxygen starter cylinders were able to maintain oxygen concentration above the 19.5 percent oxygen concentration threshold NIOSH defines as oxygen-deficient throughout the testing period. The two that did not had periods during which oxygen concentrations fell into the oxygen-deficient range. However, all SCSRs whose starter cylinders did not work had oxygen levels that fell below 19.5 percent for periods ranging from 7.5 to 25 minutes during the test period. (See figures 1 & 2)

It appears that as the oxygen producing chemical (potassium superoxide) reaction rate increased, the SCSRs' oxygen production exceeded the consumption such that oxygen concentration increased. Once oxygen concentration started climbing, an indication of robust chemical reaction, all SCSRs' oxygen percentages dramatically increased with the majority above 50 percent oxygen at the end point.

The chemical reaction is predicated upon sufficient water vapor being present in the expired breath. The expired breath from the simulator is fully or nearly fully saturated with water vapor at the start of the test in the selected protocol. Nick Kyriazi at NPPTL has done considerable work in the area of expired temperature/saturation comparing human subjects and the ABMS/3 and we consider him an expert. His recommendation was a target expired wet-bulb temperature of ~32C at the start of a test. In setting up the equipment for the OMHS&T tests every effort was made to ensure that value.

Tested SCSRs were dissected and the oxygen cylinders removed for examination. It was found that all the oxygen cylinder actuator devices had worked with the stainless steel compressed oxygen cylinder's nickel seals having been penetrated. This should have released any oxygen.

The brass fittings on the cylinder were removed and the lead washers between the brass fitting and stainless steel cylinder examined. It was not possible to visually identify any leaking areas and equipment was not available to pressurize the assembly for testing.

The data appears to demonstrate a link between the long-term excessive heat exposure and the failure of the starter cylinders. However, it must be noted that if the SR-100s were indeed repeatedly exposed to temperatures as high as the 170 degrees Fahrenheit recorded, the pressure exerted by oxygen in the stainless steel cylinder, originally filled to 2,000 psi at 60 degrees Fahrenheit, would have increased to 2,426 psi which is 93 percent of the maximum rating of 2,610 psi for the cylinder. If the manufacturer's warning had been followed, the maximum 130 degrees Fahrenheit would have created a pressure in the cylinder of only 2,271 psi, 87 percent of the maximum rating.

The four types of metal used in the compressed oxygen assembly have different coefficients of thermal expansion (α). This would result in different rates of expansion when heated and cooled. While stainless steel and brass have roughly similar α values of 19 and 17.3 respectfully, lead has an α value 1/3 greater at 29 and nickel an α value of only 13[22]. This plus the effects of the elevated oxygen pressure in the cylinder due to heating may have played a role in the compressed oxygen assembly failures however, it is impossible to draw any specific conclusion based upon this test.

While not subjected to the ABMS/3 testing, twelve physically damaged SCSRs were opened to test their cylinders. Other than the physical damage, the difference between these SCSRs and those tested was that they were used underground where temperatures do not reach the extremes experienced in vehicles. All but one of the compressed oxygen cylinders in these SCSRs worked.

The end point for testing in the NIOSH Field Evaluations is defined by the breathing resistance rather than the quality of breathable air duration. Using the Field Evaluation protocols, all but three SCSRs tested exceeded the one hour certified duration and those were in the fifty minute range. Again, it is emphasized that the NIOSH Field Evaluation protocol used here is not equivalent to the certification test and these values are only for reference with those studies.

Nine of the SCSRs tested experienced periods of "flat bagging"[23] that required taking breaths of ambient air to re-inflate the bag. The immediate effect is a rapid increase in breathing resistance. Since all units passed leak testing, this appears to be the result of the oxygen production rate being lower than the steady state consumption rate resulting in gradual decrease in the total volume of breathing bag.

Inspired carbon dioxide levels for all but one SCSR tested exceeded the NIOSH standard of 1.5 percent at any instant on the human side of the scrubber, which on the SR-100 is approx 8 inches

[22] Coefficient of linear expansion, α = (change in length/starting length)/change in temperature (meters and degrees Celsius) Incropera, Frank P.; David P. DeWitt (August 9, 2001). *Fundamentals of Heat and Mass Transfer*, 5th Edition, Wiley

[23] A situation when the air in the reservoir bag has been consumed and the breathing resistance climbs to maximum, the only way for the unit to function is to re-establish the air reservoir with ambient air.

of hose from the mouthpiece, and three exceeded the 2 percent average.[24] However, the data on several units show spikes in carbon dioxide levels. With few exceptions these are associated with a flat bag event described above. In order to restore the bag it is necessary to take 'breaths' of ambient air. On the simulator that involves opening a by-pass valve. A side effect is that ambient carbon dioxide is added to that created by the machine to simulate carbon dioxide generated by the body. Because of the uncertainty regarding the average carbon dioxide levels introduced by these spikes, they were not raised as an issue.

It was suggested that water droplets may have resulted from flat-bag recovery correction actions, with the water blocking the CO_2 sampling tube until evaporated, while not publishing on the subject NIOSH has taken the action of installing an "Insta-Dryer", rapid response condensing dryer custom manufactured by Deec Systems in line with its sampling tubes to address problems of this nature. Our inquiries revealed that all ABMS/3 units outside the NIOSH facility use a length of "Natheon" tubing for drying. According to Deec Systems, both methods work well for most water vapor levels and most testing.

One SCSR's ABMS/3 testing was terminated early when a syringe providing moisture to the wet-bulb sensor was accidentally bumped and flooded the sensor. After the system was dried and recalibrated, the testing was resumed but that SCSR's data was not considered in the summary other than as regarding the compressed oxygen starter cylinder discharge which was unaffected by the event.

CONCLUSIONS & RECOMMENDATIONS

The results of this study suggest that the CSE Corporation's SR-100s carried by Office of Miners' Health, Safety and Training (OMHS&T) inspectors and exposed in their vehicles to excess temperature for extended durations in disregard to manufacturers instructions may not function at performance levels necessary for escape.

Based upon the reaction of others to OMHS&T raising the issue many seem to have made the same mistake. The impact of this study, even before publication, has been to spark a series of actions that will result in closer attention to SCSR inspection and hopefully a new respect for these devices as the life saving appliances they are. Indeed, the lesson learned could be summarized as follows:

IF YOU DON'T TAKE CARE OF YOUR SCSR, IT MAY NOT BE ABLE TO TAKE CARE OF YOU.

The results of this study suggest that the CSE Corporation's SR-100s carried by OMHS&T inspectors and exposed to excess temperature for extended durations in disregard to manufacturers instructions may not function at performance levels necessary for use under a simulated escape modeled by the NIOSH steady-state man-test-4.

The demonstration that SCSRs stored underground, even though not passing the manufacturer's inspection procedures due to rough handling, did have functional compressed oxygen cylinder

[24] 42CFR84.97(c) sets the limit at 2 percent carbon dioxide average with no more than 1.5 percent at any one time

starters would seem to confirm that the problem is limited to that subset of SCSRs exposed to and/or stored at excessive temperatures for extended periods.

While models other than the SR-100 were not tested in this study, discussion with other manufacturers, NIOSH and MSHA indicate long-term exposure to the types of temperatures observed in West Virginia inspectors' vehicles would likely result in exceeding all the manufacturers recommended temperature maximums and could result in degraded performance in any SCSR. It is therefore recommended that a sample of other models exposed to similar conditions be tested as soon as possible.

There may be temptation to read into these results that cold-starting (without full discharge of the compressed oxygen to the breathing bag) of the SR-100 is not possible. It must be noted that NIOSH and MSHA, along with the manufacturer, have demonstrated that the chemical reaction in the typical SCSR can begin without benefit of the starter cylinder. The authors have personal experience with cold starting the SR-100 by exhaling deep breaths of ambient air into the SCSR, although not units that had been exposed to conditions of those in this test and without instrumentation to know oxygen or carbon dioxide concentrations.

The OMHS&T protocol did not anticipate the need to manually start the units. When the low levels were observed we called NPPTL and inquired if they had seen the low oxygen levels we were seeing. We were told that in an experimental process to investigate the same phenomena we observed they had done tests with an individual on a tread mill starting the person off walking as if in cold start until the inhalation oxygen levels fall below 12% before pulling the actuator tab. This reportedly happens around 15 minutes into the test. If the starter fails then the test is terminated. Since this modification in protocol was not part of the previously published NIOSH reports it was determined not to add a human cold start.

A literature search could not find what physical or psychological effects might result from these multi-minute duration oxygen deficient environments on the ability to function in an escape. However, review of regulations did not reveal any provision that would allow of levels below the 19.5 percent threshold for any duration.

This study suggests a problem with compressed oxygen cylinders in SCSRs stored in excess heat for long durations. However, since the particular abuse to which these SCSRs were exposed has not previously been tested to this extent there may be other contributing factors. It is recommended that in addition to immediate precautionary steps of replacing the inspector's SCSRs, further independent testing is conducted on other SR-100s and similar SCSRs to advance the knowledge and improve designs as needed.

Additionally, in the course of this study it was found that CSE Corporation uses a different configuration of automated breathing and metabolic simulator than NIOSH and the one used for this study. The OMHS&T was informed that NPPTL's Nick Kyriazi has been working on review automated breathing and metabolic simulators around the world and we look forward this report. This study will become critical as the industry strives for new solutions.

EPILOG

On the second day of testing it was decided that if results continued to demonstrate potential problems that the OMHS&T needed to take some action. After the third day's results were reported, the OMHS&T management team decided to request bids to replace all SR-100s without temperature indicators and immediately instruct inspectors to not keep their SCSRs in vehicles.

An emergency purchase order was issued and quotes were received for CSE SR-100s and Draeger OxyK Plus belt wearable SCSRs. The bids in response to requests for proposals including indicted delivery times were the same and management decided to order the OxyK Plus units to provide some diversity of experience among inspectors. The OMHS&T issued a letter to all users of SCSRs in the State notifying them of their actions and advising them to review handling of their SCSRs and contact their supplier for recommendations if they had been exposed to similar conditions.

Because the findings seem to indicate that units handled in similar manner may also be at risk OMHS&T have now planned a second study that will expand the same procedures to other units that have been similarly exposed and that will include the other two manufacturers. The state-wide SCSR inspection inventory is being finalized and a statistically significant sample of those units whose reported use indicates possible exposure will be tested in the same manner as reported here.

In conversations with NIOSH during the week the OMHS&T tests were being conducted they were running tests on MSHA inspector units. They did not indicate they were working on any other devices at the time. They related a few problems they had seen in the MSHA units, some of which were similar to those we were seeing, but were early in their tests. They said the full results would be sent to MSHA Arlington and we would have to contact them if we wanted to see the details. As of this date, those results have not been released.

In a letter to all manufacturers OMHS&T requested information on how the specific temperature limits were set and suggestions on how exposure could best be prevented and detected. This information will be summarized and distributed. Two of the manufacturers have indicated that they are now working on new or improved temperature indicators for future models and a means of retrofitting current units with this feature. The OMHS&T has also been in contact with NIOSH that has indicated they will expedite any necessary approvals for these modifications. It is our hope that we will have all units with this feature in the near future.

The OMHS&T has had day long training sessions with all our staff on the seriousness of the issue found in this study. We have taken them through the physiology and mechanics of using each SCSR they will encounter and the will be following this up with additional training. They in turn have been using this information in interactions with miners and operators.

ACKNOWLEDGEMENTS

The authors acknowledge OMHS&T Director James Dean for his leadership in requesting this study and Director Ron Wooten's support since he has arrived in working through the final review and comment phase. Thanks go to the staff of the Office of Miners Health Safety and

Training for assistance in identifying, collecting and shipping SCSRs for testing, the CSE Corporation for expediting a supply of new SCSRs and technical information, the staff of NIOSH's NPPTL for providing technical information and confirming calibration procedures, and laboratory technicians at Ocenco Inc. for training and assistance in using the Automated Breathing and Metabolic Simulator. Additional thanks to mine safety staff from the Kentucky Office of Mine Safety and Licensing who participated as observers and individuals from all the above that provided comments on drafts.

A special mention is made of the contribution made by the work of Nick Kyriazi a senior biomedical engineer at the NPPTL. Over the years his publications and freely given expert advice has earned him recognition as the foremost expert in SCSR evaluation from the individuals around the world we contacted in researching this report. While direct contact during the production of this report has been limited, his contribution indirectly through those he has taught and influenced was critical.

FIGURE 1

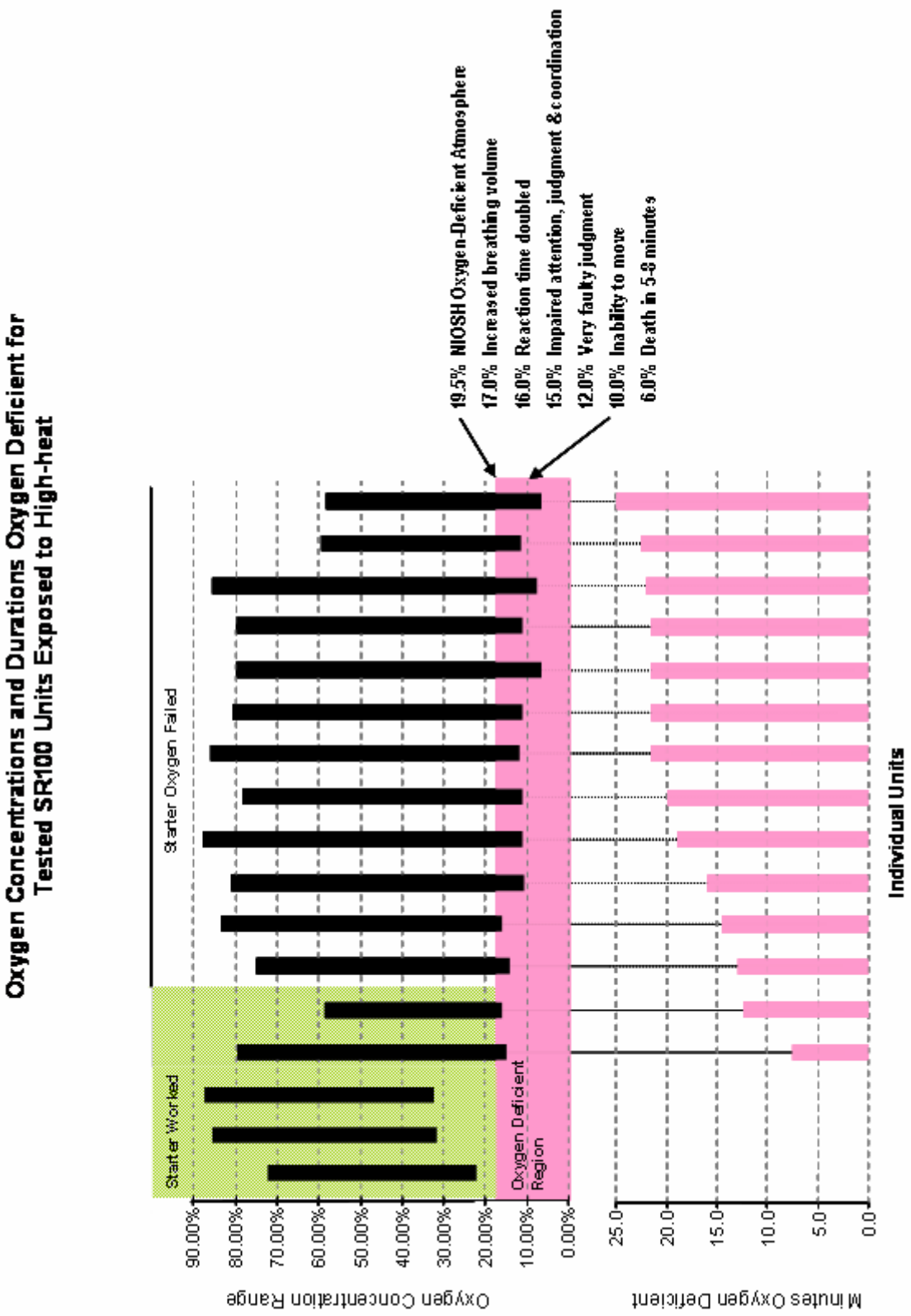
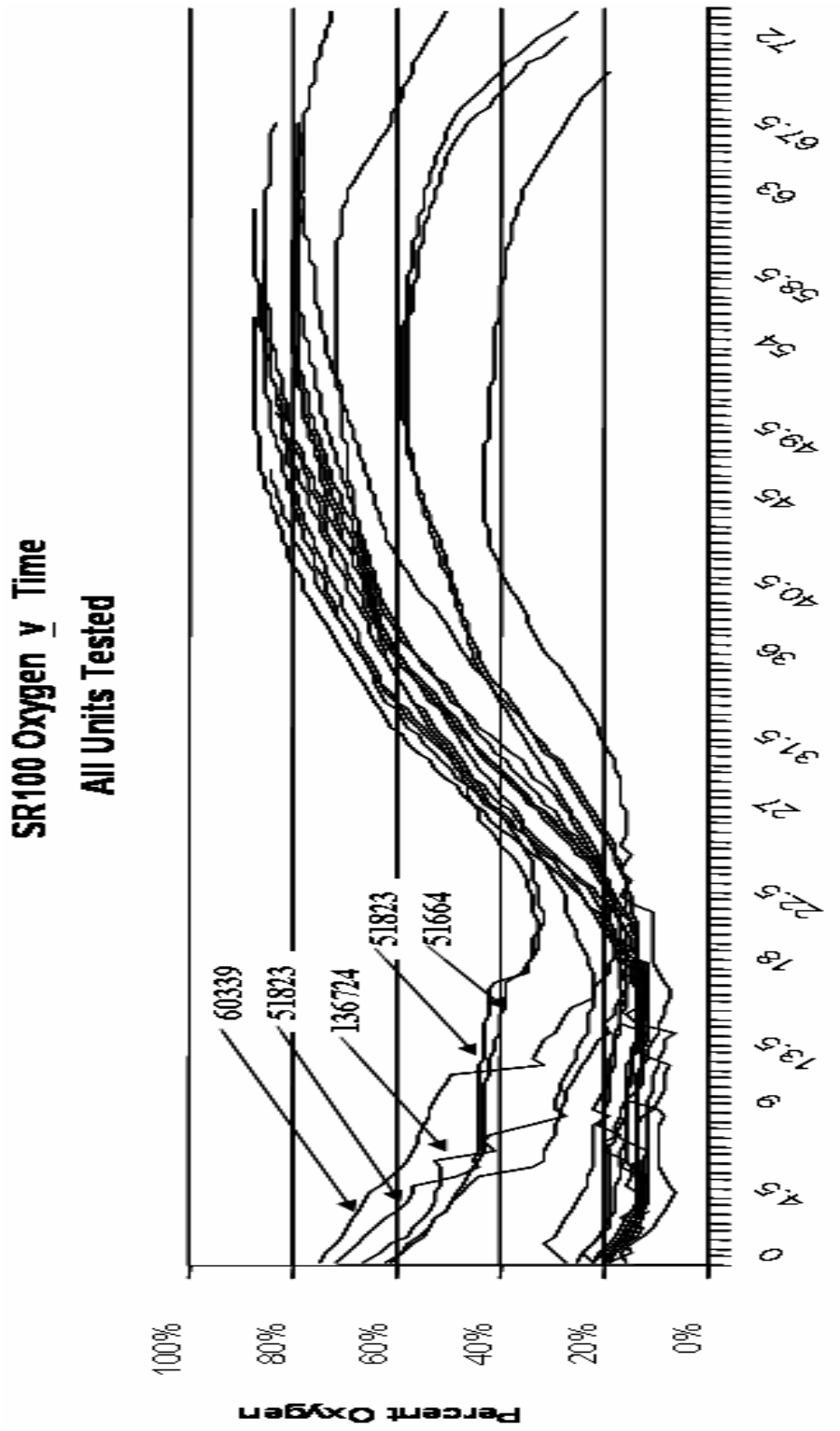

Oxygen Concentrations and Durations Oxygen Deficient for Tested SR100 Units Exposed to High-heat
19.5% NIOSH Oxygen-Deficient Atmosphere
17.0% Increased breathing volume
16.0% Reaction time doubled
15.0% Impaired attention, judgment & coordination
12.0% Very faulty judgment
10.0% Inability to move
6.0% Death in 5-8 minutes
Starter Oxygen Failed
Starter Worked
Oxygen Deficient Region
90.00%
80.00%
70.00%
60.00%
50.00%
40.00%
30.00%
20.00%
10.00%
0.00%
Oxygen Concentration Range
25.0
20.0
15.0
10.0
5.0
0.0
Minutes Oxygen Deficient
Individual Units

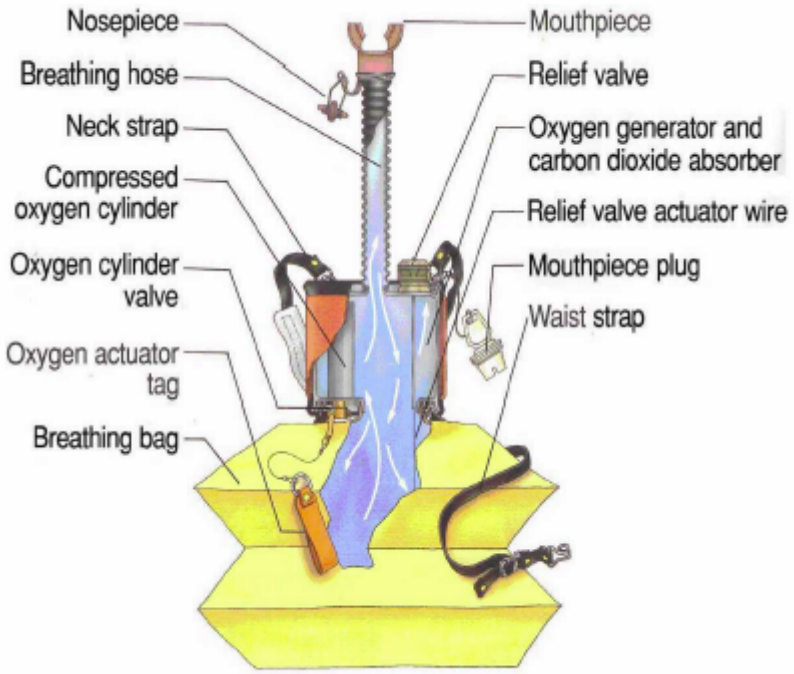
FIGURE 2



This graph illustrates the percentage of breathable air that is oxygen over the duration of the operation of each SR100 tested on the ABMS/3. Standards for oxygen content of self-contained breathing apparatus are set forth at 42CFR84-79. "Breathing gas used to supply apparatus shall be respirable and contain no less than 19.5 (dry atmosphere) volume percent of oxygen." There is no discussion of how long any device can perform below that threshold.

Figure 3

CSE SR-100 cut away view.
(Image Copyright CSE Corp.)



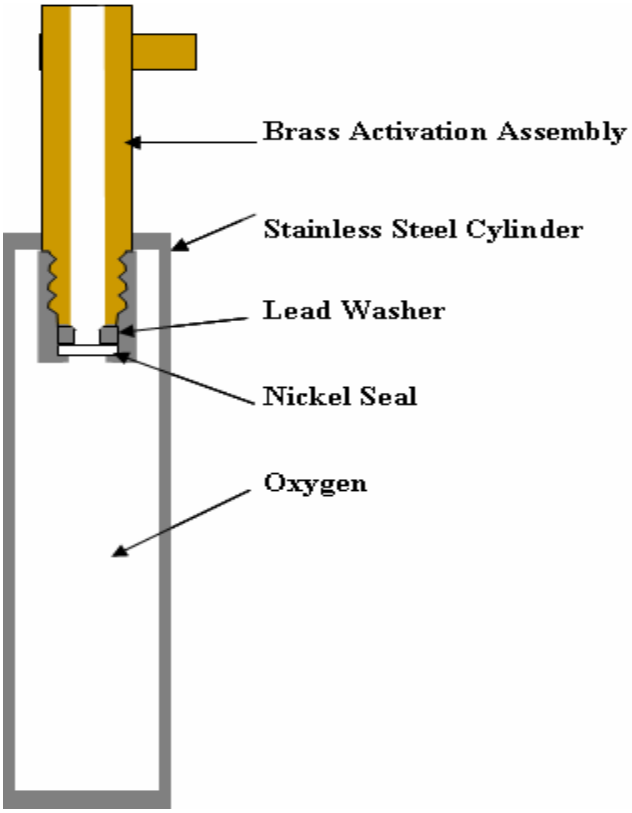


Figure 4

CSE SR-100 Compressed Oxygen Cylinder assembly indicating approximate location of parts discussed in the study.

Photograph 1

J. Wayne Ashby attempting to open SR-100 Serial No 60028

Photograph 2

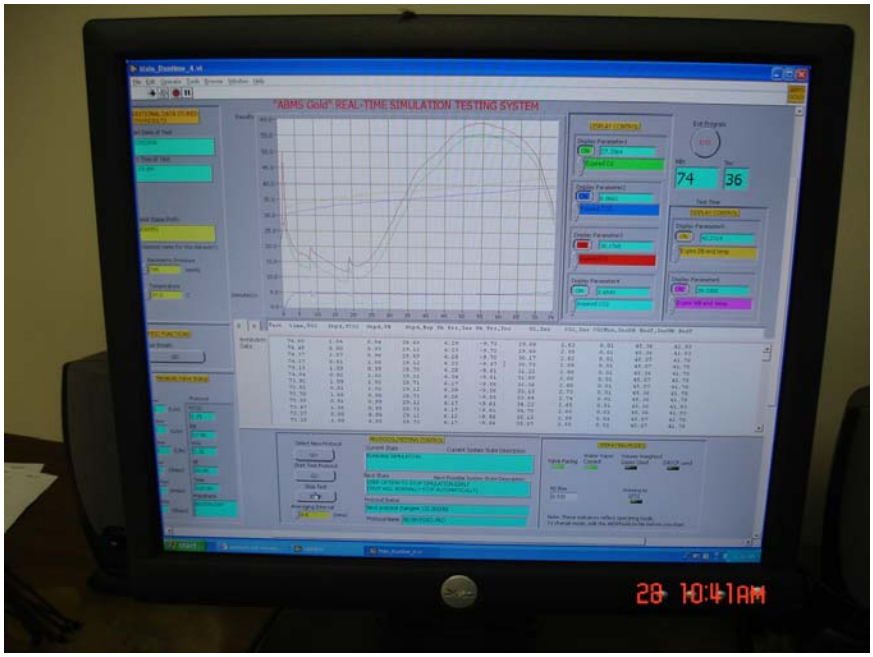
SR-100 Serial No 60659 after ABMS/3 testing. This was typical of case conditions for SCSRs tested

Photograph 3

Randall Harris operating the ABMS/3 during the testing of SR-100 Serial No 136724

Photograph 4

Image of the screen of the ABMS/3 while testing SR-100 serial No 60451



Photograph 5

A thermal couple was attached to the exposed upper surface of the chemical canister during testing to provide some indication of the reaction rate. It was found that canisters typically registered temperatures in excess of 225 degrees Fahrenheit.

Photograph 6

SR-100 Serial No 53664 just after the oxygen actuator tag had been pulled. While the bag did not appear to inflate this SCSR did have enough oxygen in the cylinder to allow it to complete the test without falling below the 19.5 percent oxygen-deficient threshold.

Photograph 7
SR-100 Serial No 60451
before testing

Photograph 8

SR-100 Serial No 60451. Note the condition of the hose. While appearing to cause air flow constraints, these conditions did not prove to produce increased breathing resistance when tested without the SCSR attached.

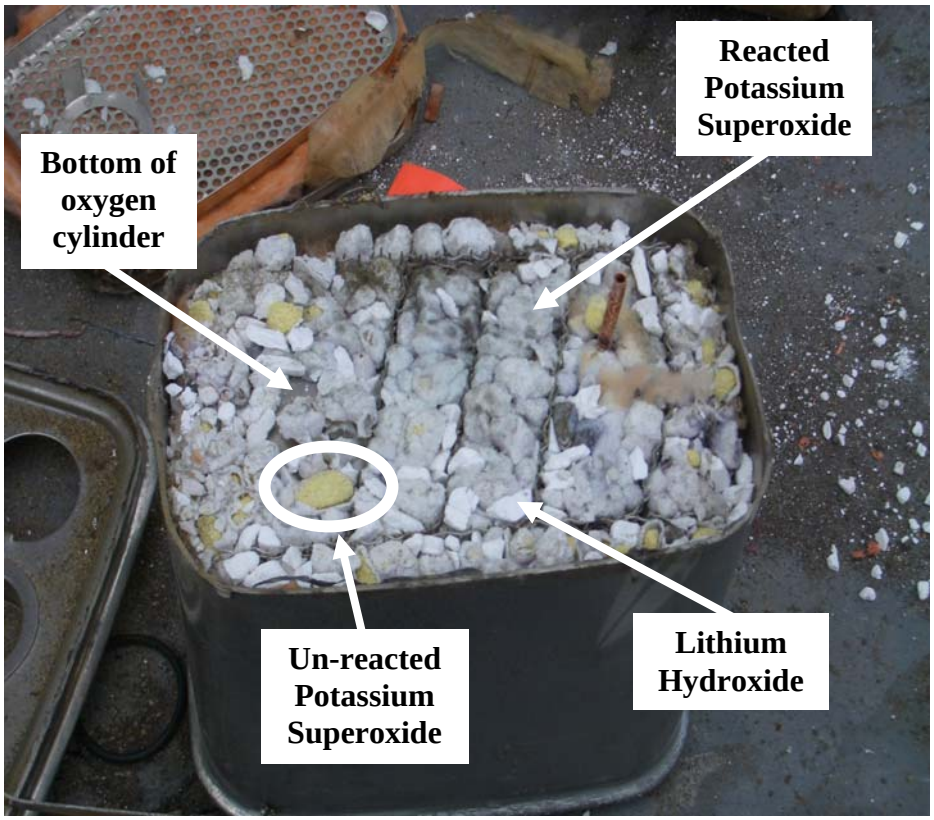


Photo 9

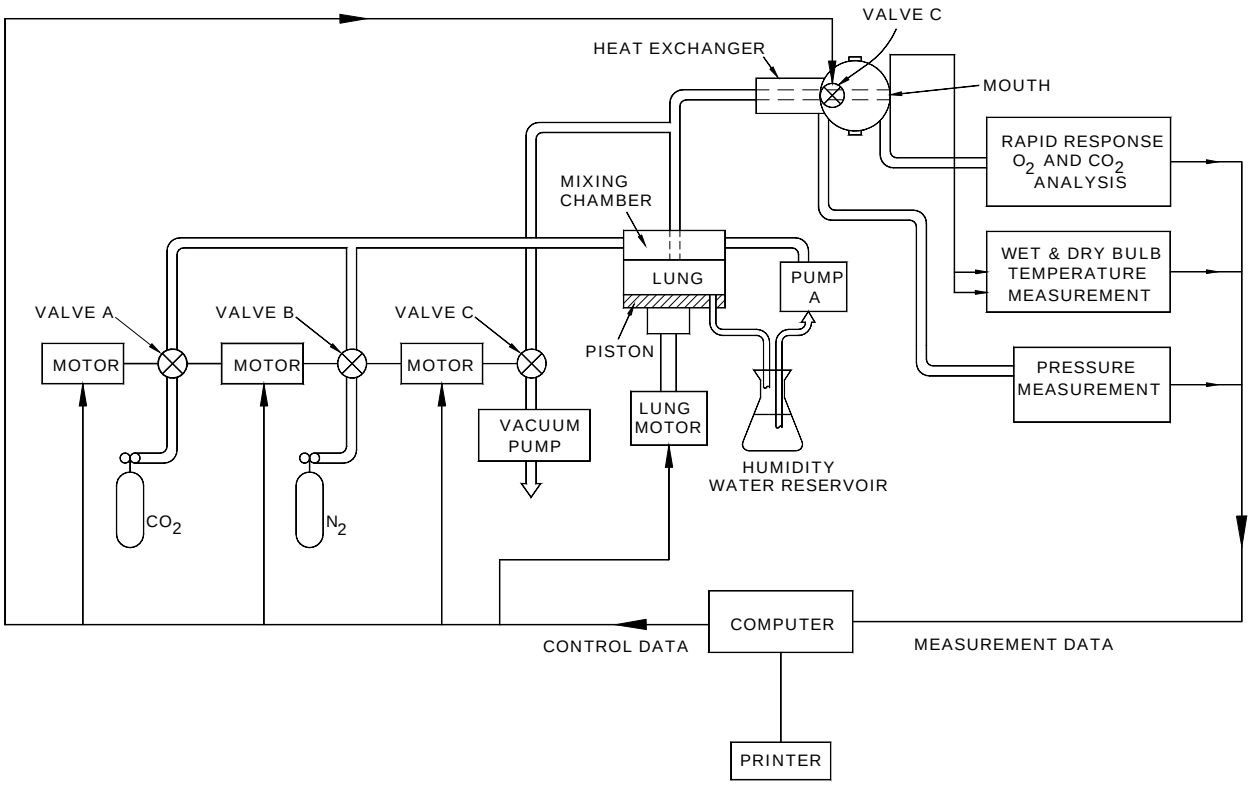
The inside of SR-100 Serial No 60512 after it was tested. This view is from the top of the SCSR. The copper tube to the right is for the overpressure cable guide and the gray stainless steel dome of the oxygen starter can just be seen to the left. The diagonal lines are the top of the screens which assist in air flow during reaction.

The lightest white colored chips are lithium hydroxide (LiOH) and the occasional yellow is of un-reacted potassium superoxide (KO_2) encrusted in a shell of potassium carbonate – the product of the reaction.

The chemical materials at this stage have fused together, a process that seems to contribute to the increased breathing resistance as the SCSR produces oxygen.

APPENDIX A

ABMS/3 NOTES



Schematic Diagram of the ABMS/3

ABMS/3 CALIBRATION

Testing was done on August 28, 29, 30 and 31, 2006 in Pleasant Prairie, Wisconsin. The elevation of the facility is 213 meters above sea level. The laboratory facility was climate controlled with an ambient temperature of 22 degrees C. Barometric pressures for the dates were 745 mmHg, 743 mmHg, 749 mmHg and 750 mmHg respectively. The ABMS/3 was calibrated for ambient barometric pressure each day.

The simulator protocol used was the same, BD1830 waveform, 1.35 LPM VO_2, 1.15 LPM VCO_2. These metabolic values were twice validated during the OMHS&T testing.

Medical-grade calibration gas was provided from a blended cylinder obtained from Linde Gas. The contents were assayed August 4, 2006 as containing 1.99 percent nitrogen, 7.71 percent carbon dioxide with the balance oxygen.

Medical-grade nitrogen was provided from a cylinder obtained from Linde Gas that was assayed October 24, 2003 as 99.9 percent nitrogen.

Medical-grade carbon dioxide was provided from a cylinder obtained from Linde Gas assayed August 18, 2006 as 99.9 percent carbon dioxide with carbon monoxide below 10 ppm.

The ABMS/3 was calibrated to 1.35L/min oxygen and 1.15L/min carbon dioxide. This was verified by collecting 71.237 liters (ambient temperature and pressure, saturated) ATPS of expired gas over a 17-minute duration in Douglas bag as measured using a Collins Chain-Compensated Gas Meter (calibrated March 2006). This was converted using the current barometric pressure to 0.894 cubic feet. An analysis of gas was performed to determine the percentage that was oxygen and carbon dioxide. This was used to determine the production rates of 1.367 L/min oxygen and 1.18 L/min carbon dioxide. These are within calibration limits utilized in NIOSH testing. This process was repeated each day with results never exceeding +/-3 percent.

The temperature of the water bath used to preheat the air and maintain moisture in the expired breath was set at 43 degrees Celsius and checked throughout simulations. This process resulted in inspired wet bulb temperatures of between 29 to 33 degrees Celsius at the beginning of each simulation run. The AMBS/3 has two wet bulb sensors. One is smaller with a faster response time and is used when breath-by-breath data is being collected. The other is larger with a response time adequate for longer sampling periods. The larger sensor was used since data was collected once each 30 seconds.

ISSUES NOTED

Carbon dioxide spikes were observed. Similar spikes have not been reported in NIOSH publications. It is not believed to be the result of differences in the way the simulators inject CO_2 since the ABMS/3 and the DEEC machine use the identical needle valves and stepper motors to introduce CO_2 into the system and both use the same software algorithm to calibrate the gas analyzers and measure inhaled gas. The CO_2 spikes are the result of the test operators having to re-inflate the SR-100 breathing bag because the KO_2 production of O_2 was insufficient to support the BD1830 demands. When the bag went flat, the port on the top of the lung was opened during inhalation to allow air into the system. This was done for the number of breaths required to re fill the breathing bag. It is believed the CO_2 spikes occur because a column of high percentage CO_2 exhaled air is now static at the gas sampling port during ambient inhalations. For example, on SCSR No. 115108, the bag went flat at 15 minutes and the by pass valve was opened. The CO_2 reading went from 2.16% to 3.54% then back down again as the valve was closed. This happened again at 19 minutes with the same results. Similar events can be found on SCSR No. 60339 at 13 minutes and others were spikes occurred.

Nine of the SR100s tested experienced periods of "flat bagging". Conversations with operators of other ABMS/3 revealed they too, had experienced this situation and had taken similar corrective actions taken in this study. However, the location of mixing the ambient air differed. On review of the data collected in the minutes preceding these events there appears to be no common set of indicators that would have given an early warning.

When the inspired pressure exceeded 95 mmH_2O, the software was instructed to end the session. Because of time required for all the stepper motors and metabolic valves to reach their fully closed positions, the actual termination of breathing took two or three breathing cycles. Experience of other ABMS/3 operators was that once a SR-100 reached 100 mmH_2O it would increase to more than 300 mmH_2O within a minute. Since such high pressures might cause damage to the simulator, it was recommended that by this time the inspiration pressure was at or above 100 mmH_2O.

APPENDIX B

SUMMARY DATA

ABMS ?	Serial number	Manufacture Date	Indicator Top	Indicator Bottom	Indicator temperature	ASMD	Case Condition	Seal Condition	Opening Ease	Breathing Hoses	Starter Bottle
Y	51823	Sep-96	blue	blue	N/A	passed	minor abrasions	intact	easy	partially melted together separated when pulled	gas detected by ABMS and but bag did not inflate
Y	53664	Jun-97	blue	blue	N/A	passed	minor abrasions	intact	easy	partially melted together separated when pulled	gas detected by ABMS and but bag did not inflate
Y	60028	Feb-98	blue	blue	N/A	passed	minor abrasions	intact	very difficult	partially melted together did not separated when pulled	no detectable gas
Y	60078	Feb-98	blue	blue	N/A	passed	minor abrasions	intact	very difficult	partially melted together did not separated when pulled	no detectable gas
Y	60291	Feb-98	blue	blue	N/A	passed	minor abrasions	intact	difficult	partially melted together did not separated when pulled	no detectable gas
Y	60334	Feb-98	blue	blue	N/A	passed	minor abrasions	intact	difficult	partially melted together did not separated when pulled	gas detected by ABMS and but bag did not inflate
Y	60339	Feb-98	blue	blue	N/A	passed	minor abrasions	intact	very difficult	partially melted together hose broke when pulled	no detectable gas
Y	60450	Feb-98	blue	blue	N/A	passed	minor abrasions	intact	very difficult	partially melted together did not separated when pulled	no detectable gas
Y	60451	Feb-98	blue	blue	N/A	passed	minor abrasions	intact	difficult	partially melted together did not separate when pulled	no detectable gas
Y	60487	Feb-98	blue	blue	N/A	passed	minor abrasions	intact	difficult	partially melted together did not separated when pulled	no detectable gas
Y	60512	Feb-98	blue	blue	N/A	passed	minor abrasions	intact	difficult	partially melted together did not separated when pulled	gas detected by ABMS and but bag did not inflate
N	60519	Feb-98	blue	blue	N/A	passed	minor abrasions	intact	difficult	partially melted together did not separated when pulled	did not start left bottle for later examination
Y	60521	Feb-98	blue	blue	N/A	passed	minor abrasions	intact	very difficult	partially melted together did not separated when pulled	no detectable gas
Y	60558	Feb-98	blue	blue	N/A	passed	minor abrasions	intact	difficult	partially melted together separated when pulled	no detectable gas
Y	60636	Feb-98	blue	blue	N/A	passed	minor abrasions	intact	very difficult	partially melted together did not separated when pulled	no detectable gas
Y	60659	Feb-98	blue	blue	N/A	passed	minor abrasions	intact	difficult	partially melted together did not separated when pulled	no detectable gas
Y	60661	Feb-98	blue	blue	N/A	passed	minor abrasions	intact	difficult	partially melted together did not separated when pulled	no detectable gas
N	110958	Feb-05	blue	blue	red	passed	minor abrasions	intact	easy	partially melted together separated when pulled	did not start left bottle for later examination
Y	115108	Apr-05	blue	blue	red	passed	minor abrasions	intact	easy	partially melted together separated when pulled	Yes - bag did not fully inflate
Y	136724	Aug-06	blue	blue	white	passed	pristine	intact	difficult	separated when pulled	Yes - new removed from factory sealed carton for test

No.	O2 max	O2 min	O2 avg	Min. below 19.5% O2	CO2 max	CO2 min	CO2 avg	Exp cmH20	Exp cmH20 Min	Insp cmH20	Insp cmH20 Min	Duration @ Insp Max
136724	0.7183	0.2228	0.5248	0.0	0.0411	0.0040	0.0131	6.8223	2.0206	-9.7767	-2.3258	73.5
51823	0.8503	0.3209	0.5837	0.0	0.0354	0.0058	0.0194	7.2445	2.1586	-9.8208	-3.5124	58.5
53664	0.8707	0.3287	0.5930	0.0	0.0450	0.0069	0.0193	8.0365	2.3793	-9.9312	-3.7056	62.0
115108	0.7920	0.1522	0.5004	7.5	0.0583	0.0080	0.0217	7.2638	2.8512	-9.9837	-4.125	64.5
60291	0.5833	0.1628	0.3825	12.5	0.0382	0.0089	0.0223	5.1141	2.1889	-8.6508	-1.4317	72.0
60339	0.7443	0.1428	0.3552	13.0	0.0639	0.0101	0.0389	5.2576	2.6525	-11.0682	-3.885	70.0
60512	0.8292	0.1648	0.4320	14.5	0.0392	0.0097	0.0157	6.2841	3.0278	-9.7353	-2.5742	50.0
60558	0.8048	0.1100	0.4530	16.0	0.0205	0.0095	0.0145	7.1795	2.525	-9.6602	-3.3315	62.0
60521	0.8727	0.1144	0.4790	19.0	0.0200	0.0054	0.0133	7.2362	2.2883	-9.9561	-2.5328	55.0
60661	0.7792	0.1132	0.3364	20.0	0.0309	0.0087	0.0148	6.7367	3.5246	-9.9423	-3.0102	41.5
60078	0.8543	0.1229	0.4784	21.5	0.0200	0.0111	0.0162	7.1672	1.786	-9.876	-1.7187	58.0
60334	0.8020	0.1129	0.4680	21.5	0.0215	0.0066	0.0154	6.9023	1.7474	-9.9423	-1.6221	66.5
60659	0.7943	0.0673	0.4457	21.5	0.0253	0.0075	0.0160	7.3742	2.4897	-9.9975	-1.7959	62.0
60636	0.7959	0.1130	0.4050	21.5	0.0318	0.0078	0.0130	6.6815	2.2772	-9.9202	-2.3396	54.0
60450	0.8513	0.0785	0.4924	22.0	0.0300	0.0106	0.0163	6.9133	1.2203	-9.9864	-2.4914	67.0
60451	0.5888	0.1187	0.3673	22.5	0.0280	0.0054	0.0172	6.2704	2.876	-9.9423	-3.264	73.5
60487	0.5762	0.0679	0.2181	25.0	0.0283	0.0083	0.0149	8.5194	4.5318	-9.9699	-3.7497	40.5

APPENDIX C

COMMENTS, REACTIONS AND RESOLUTIONS

While not typical in reports of this kind, but in keeping with OMHS&T's mission of providing information to the industry we are providing comments received from reviewers of the drafts of this report, reactions from the authors with the commenter's and the resolution.

CSE COMMENTS (letter attached)

As you know, CSE has continually offered its cooperation with your investigation in all respects and has urged your team to visit the CSE plant to review and assess the condition of the units taken out of service because of poor condition. We have offered to share our protocols and the controls that CSE uses to obtain accurate and consistent measurements of SR-100 performance. We would also like to share what we know about the NIOSH testing controls so that your results could be verified and repeatable. Your team declined this offer prior to publishing the report.

The OMHS&T is appreciative of CSE's cooperation, however prior to the testing, Sam Shearer, CSE Chairman and SR-100 inventor, was offered the opportunity to accompany the OMHS&T team to the Ocenco Lab and he declined. Since the objective of OMHS&T was to have results that were comparable to the only published data, the NIOSH results, and the designer of the NIOSH and Ocenco machine (Scott Deno of Deec Systems Inc.) assured us that the machines were essentially identical and that that the version CSE uses was fundamentally different, the decision was made to use the ABMS/3. Mr. Deno's reply when asked about differences was that "I and many others have consistently made an effort to make sure all ABMS systems are operating the same. Some operating procedures have varied slightly which can not be totally controlled, however the hardware and software is either identical or very nearly the same."

In regard to the "prior to publishing" note, these comments were received and any modifications incorporated prior to publishing, what CSE was responding to with these comments was a working draft sent only to them, NIOSH, MSHA, and internal reviewers only.

Expansion of the discussion regarding the factors relating to the decisions of testing location was added to the report.

We also are concerned that your team did not use NIOSH facilities for your tests. Instead, your team worked with our competitor, Ocenco, using Ocenco's simulator which is designed to test, not the chemical generation units CSE manufactures, but the compressed oxygen units that Ocenco produces.

The OMHS&T asked about access to the NIOSH facility and were told timeliness of approvals was an issue. Again, we were assured by the designer of both the NIOSH machines and the ABMS/3 that the machines are fundamentally identical and that there is no "chemical" verses "compressed oxygen" differences in the simulators. After

receiving this comment we asked Mr. Deno one more time and his reply was "The machines are so identical that it is difficult to find difference. Any differences which might warrant consideration primarily involve operating procedures." Based upon confidence in the quality of his advice, we respectfully disagree with your assessment.

Expansion of the text describing the ABMS/3 verses the Deec Systems simulator was expanded.

You will also recall that we suggested that it would be technically difficult for Ocenco to modify its simulator to receive the hard controls that need to be in place to record and measure the test data. Our preliminary review of the limited data in your report indicates that the necessary modifications were not made. The impact on the test data that was generated was predictable because of flaws in your controls.

Again, the designer of both devices says there are no modifications required. We are informed that in addition to the original Deec unit, which the builders claims is functionally equivalent, the NIOSH has purchased three ABMS/3 and allowed the US Army to purchase two other through its contract. Additionally the US Navy has two ABMS/3 units. Again we are assured that all machines are under service contract with Ocenco and Deec performing regular maintenance and performance validation. It is unfortunate that Sam Shearer was unable to join us as an observer; it would have been helpful in resolving these disagreements.

Your test results are based on the presumption that Ocenco's simulator is identical to the simulator used by NIOSH. We do not agree. The two simulators are not compatible. Besides important configuration differences, which skew your test results, your test procedures effectively starved the SR-100's in your test of water vapor which is critical to production of oxygen and removal of carbon dioxide in the SR-100 chemical generation unit. The failure to adequately control temperature lead to results of reduced oxygen production and spiked CO2 levels. Had proper controls been used, you would have obtained very different test data on the performance of the damaged units.

The comparisons of the Deec unit and the ABMS/3 as substantially identical have been addressed above. Regarding the water vapor; the wet bulb temperatures ranges that are being referred were validated with Nick Kyriazi, NPPTL, prior to running the test. I have double checked my notes from the conversation and those of the observer that was on the call with me. We used the values Nick said he used. If we used the same values that NIOSH used, the results should have been compatible with those they found. In subsequent conversations with Nick he related that he has seen similar readings (unpublished raw data). We have requested the raw data from the NIOSH tests and have been told by John Kovac that it will be released to everyone at the same time, after it has been reviewed, except for the strip charts. If we want to see those they will be made available at the lab.

At the same time you were conducting your tests, CSE and NIOSH examined a set of 1997 and 1998 vintage SR-100s carried by inspectors from Pennsylvania Department of Mine Safety

which had been exposed to excessive temperatures in the field. CSE tested seven of these units while NIOSH tested six. With permission from Pennsylvania Department of Mine Safety, we will share with you the results of those tests, which were significantly different from your test results. With one exception, every bottle of oxygen deployed. Each unit reached optimal oxygen production timely and CO_2 levels were in normal limits for the full hour of operation.

> *The OMHS&T was not as fortunate in obtaining the timely access CSE was able to get although an arrangement with NIOSH has been made that will facilitate this in the future. We are glad to hear that the Pennsylvania units did not have the starter problems; however, this makes the mystery of the OMHS&T units' failure more troublesome, as they did fail. The release of the compressed oxygen is accompanied by an increase in the gas within the closed system of the SCSR and the simulator which should result in a visible increase in the inflated size of the breathing bag which was not observed. This is also accompanied by an audible movement of gas. The configuration of the SCSR on the simulator is such that the SR100 is within 10 inches of the ear when the actuator tab is pulled. There was not an instance where a sound was heard yet there was no indication of oxygen released. Additionally the ABMS/3 gas analyzers are very fast and very accurate. It would seem very unlikely that injection of 100% oxygen of any significant volume anywhere, at any point in the lung cycle would have gone undetected.*
>
> *In conversations with NIOSH during the week the OMHS&T tests were being conducted they said they were running MSHA inspector units. They did not indicate they were working on any other devices at the time. They related a few problems they had seen in the MSHA units, some of which were similar to those we were seeing, but were early in their tests. They said the full results would be sent to MSHA Arlington and we would have to contact them if we wanted to see the details. As of this date those results have not been released.*

It has long been known that any SCSR whether it is CSE's SR-100 or another manufacturer's unit that has been exposed to temperatures outside the limits set by the manufacture is not considered to be in acceptable operating condition and is to be removed from service. The same is true for units that have sustained physical damage. CSE is confident that federal and state regulators have actively enforced manufactures'' warnings to remove units from service that were exposed to excessive heat or that otherwise do not meet performance criteria due to their physical condition, but obviously we are now discovering that many outdated, overheated, and damaged units have remained in the field.

> *Evidently while we too wish everyone involved had taken these warnings as seriously as we now know they should be, it has not been the case. West Virginia failed in this regard and based upon the reaction of other states and MSHA to our raising the issue they seem to have as well. We are all guilty of not reading the manuals and now are paying the price by having to buy new units. We are lucky it is just money it just as well could have been the life of one of our inspectors. The result however has sparked a series of actions that will result in closer attention being paid to SCSR inspection and hopefully, as CSE has pointed out in many conversations, a new respect for these devices as the life saving appliances they are.*

Another major concern with your testing is that the test singled out damaged SR-100 units for testing. West Virginia miners also use Ocenco, Drager, and MSA units. Your testing excludes our competitors' units without explanation. Our competitors struggle with performance issues that are documented and should be included in any investigation that purports to evaluate all SCSR's.

> *We agree that all units should be incorporated in a test of SCSRs used by miners, but that is not what this is. The text points out that this is a test of units carried by West Virginia inspectors. At the time this test was designed our inspectors only carried SR-100's. Because the findings seem to indicate that units carried in similar manner may also be at risk we have now planned a second study that will expand the same procedures to other units that have been similarly exposed and that will include the other two manufacturers. This was not meant to be the WV equivalent of the NIOSH field tests…it was to determine if the state's units were at risk. It was designed and has been described accordingly.*
>
> *Aside: the recent inspection inventory of all deployed SCSRs in West Virginia did not reveal any MSA SCSRs in service in the state's mines.*

The rush to publish data on damaged SR-100 units before testing competitors' units is clearly not based on an evenhanded approach and it suffers from a lack of scientific integrity.

> *As stated above, this was never intended to be anything other than a test of West Virginia inspector carried units. That is what Acting Director, Jim Dean and the author told CSE sales staff when asking for assistance in expediting the purchase of replacement units for this test. We have never misled anyone about the intentions of this test.*

Worse yet, for CSE, it ferments misleading media attention by implying that only SR-100 units are of concern to regulators. If nothing else, it prompts sensational headlines that are completely misleading to the public.

The enclosed Pittsburgh Post-Gazette article is a perfect example (Tests find 30% failure in oxygen packs - Devices similar to those used by miners at Sago, Kentucky Darby, Saturday October 07, 2006, By Steve Twedt, Pittsburgh Post-Gazette). The story is fair to CSE, because it is factually sound, but the headline gives the impression that 30% of the perfectly good CSE units failed, when in fact the article is talking about damaged units. If other units had been tested, this headline could not have been limited to CSE's units. We cannot stress enough how damaging we consider such headlines to be to CSE's reputation.

We must ask that your communications with the public and the media be fair. If you are commenting on a draft report that is still under review, CSE asks that you clearly say so. If your results are based on tests of units so badly damaged that OMHS&T would not permit a miner to wear it, Please make that point clearly. If our competitor's products would perform similarly say so. As miners and mine operators are rightly relying on their critically important technology to save lives, it is imperative that nothing be done that would inappropriately disparage the product of any SCSR manufacturer.

The Post-Gazette article referenced concerned the NIOSH report and had nothing to do with the West Virginia testing. The two articles that we know were written about the West Virginia testing contained the fact that these units had been exposed to high temperatures because we went to great lengths with the reporters to make sure they understood that fact. We appreciate that misleading press can cause problems for any company. We are in agreement with your concerns and have and will do everything we can to ensure that any media contacts with anyone associated with OMHS&T will go out of their way to be fair. As we are sure you know even reporters have control of neither the final articles nor the headline. That does not negate the responsibility of OMHS&T to decimate information.

CSE is also concerned that OMHS&T claims that its decision to replace the inspectors' SR-100's with another manufacturer's unit was based on concerns of damage due to excessive heat, yet the units selected (a competitor's) do not provide the user with temperature exposure indicator. Only the SR-100 has that feature.

The reason for replacing the units was that we did not know how they had been treated and decided to err on the side of safety and assume they had been exposed to excess temperature. The decision to go with the Draeger OXY-K plus units was, since the price was the same, to provide wider experience among our staff in the use of all the units they will encounter in their inspections. We have instructed all inspectors to remove their SCSRs, regardless of the make, from their vehicles when they are not wearing them and to set the example for the care of their units when at the mines.

In a letter to all manufacturers OMHS&T requested information on how the specific temperature limits were set and suggestions on how exposure could best be prevented and detected. Two of the manufacturers have indicated that they are now working on new or improved temperature indicators for future models and a means of retrofitting current units with this feature. The OMHS&T has also been in contact with NIOSH that has indicated they will expedite any necessary approvals for these modifications. It is our hope that we will have all units with this feature in the near future.

Your report concedes that OMHS&T inspectors ignored CSE's care and handling instructions. CSE cannot police the condition of its units post-sale. CSE gives explicit instructions and user aids as to when units must be taken out of service, but CSE necessarily relies on those who have custody or regulator oversight control to screen units and see to it that outdated damaged or overheated units are removed from service.

CSE relies on the operators and federal and state mine inspectors to assist the miners in identifying and removing damaged units in accordance with manufacturer instructions. Inspectors must set the standard. When OMHS&T ignores manufacturer warnings on temperature and physical damage resulting in carrying units that are obviously damaged into mines, OMHS&T sends the wrong message to the industry. If there are operators who received incorrect training on care and use of the SR-100's from OMHS&T inspectors, please advise and CSE will target those locations for remedial training.

We are ashamed. We have had day long training sessions with all our staff on the seriousness of the issue. We have taken them through the physiology and mechanics of using each SCSR they will encounter and they will be following this up with additional training. We have asked the same questions about training ourselves and do not believe that any OMHS&T trainer followed other than the MSHA and CSE training materials. It seems that the issue is one that inspectors did not realize the temperatures a parked vehicle could reach in the summer. We would welcome manufacturer field staff in joining our personnel in SCSR training and encourage all manufactures to coordinate with the various regional offices.

CSE would like to offer to provide OMHS&T inspectors with additional training on use and care of the SR-100. Educating your team on the SR-100 using our training simulation model is important. Because mine inspectors play a crucial role in ensuring that SCSR's in mines are maintained in accordance with manufacturer's inspection and removal criteria, it is critical that West Virginia inspectors be able to recognize damage that warrants removal from service.

We thank CSE for this. We have taken CSE up on this offer in the past and will again in the future. As we have spoken before, the level of customer service CSE has provided is second to none. The CSE field personnel are to a person professional and respected. CSE staff's daily interactions with mine safety staff and participation in mine rescue events have saved lives as surely as have SR-100's. The OMHS&T will continue to avail ourselves of their expertise in maintaining the skills of our staff.

We do agree with your conclusion: the industry must re-invigorate training. CSE took the leadership role to address training. CSE offers the SR-D, its "donning unit" which gives the miner the experience of putting on the unit. CSE also offers the SR-T, which is the disposable live trainer which replicates the SR-100 experience from start to finish in 10 minutes including simulation of the heat and breathing resistance a miner may experience.

Many of the OMHS&T insights on the need of training miners regarding metabolism and SCSR response have CSE's Sam Shearer at their root. He has drilled into us since our first meeting on this subject in March the need for miners to understand how their bodies related to the effective working of an SCSR. We hope and expect that CSE will continue to develop better and better training tools and appreciate your efforts.

In our meeting yesterday *(October 9, 2006 Director Ron Wooten, Randall Harris and CSE representatives)*, we shared with you our serious reservations concerning your sampling methods and test protocols. You indicated that you believe the qualifications in your report sufficiently prevent conclusions from being generalized to the population of SR-100's in the field because OMHS&T concedes that its inspectors improperly handled the units that you tested. CSE disagrees that merely conceding poor handling practices is sufficient to satisfy critics who will suggest that your data is relevant to assessing the conditions of units in the field.

As stated during the referenced meeting we do not know of a better way to handle this. We did mishandle the units. Others likely mishandled their units. The only sure way to completely address your concern would be to not publish. That is not an option.

We have in the initial drafts and will in the final drafts and any subsequent discussions with the media on this subject make the first, last and as often as practical the point:

IF YOU DO NOT TAKE CARE OF YOUR SCSR - IT MAY NOT TAKE CARE OF YOU.

As to the critics, there are always those who will be critical. Our belief is that you have to do what is right and tell it like it is. Trying to manipulate the facts or timing of release only makes things worse. It is the mission of OMHS&T to make sure miners and operators have all the information available.

We will continue to be mindful of the tendency of some to take things out of context and use those clips to support conclusions different from ours by emphasizing some tangential link or expanded scope. We will continue in discussion of any studies we do to structure our statements as explicitly as possible and the make the links to real-world implications.

The protocol recommended to you for your test effectively starved the SR-100 of water vapor which depleted oxygen production and spiked CO_2 levels. From this data, you conclude that there was sub-optimal performance in damaged units. CSE believes that your team should await the release of NIOSH's data of the units it inspected under virtually identical conditions obtained from the Pennsylvania mine inspectors. We believe you should not release your report until you have completed testing other manufacturers' SCSRs. If you are unwilling to wait to release your report CSE feels strongly that your report should register criticisms we have imparted, not only on your methods but also on the data generated. We also ask that you include a copy of this letter in an appendix to your report.

We are not able to wait for NIOSH since it took years to release what they did in the last round of studies and we are not willing to the compound communications delays.

Additionally, since CSE has been vocal about its belief in the poor quality and many flaws in the NIOSH studies which were based upon the same protocols, simulator, and operators as those mentioned in the comment we do not see how waiting for it would aid in adding validity to our underlying finding that abusing units is not a good thing to do.

As we offered to provide same-time rebuttal opportunities during our October 9 meeting with CSE and have no problem including CSE's and all the other's comments we received during the review process. This is much more than has ever been done for a study relating to SCSRs by NIOSH, MSHA or the Bureau of Mines.

Regarding the water vapor issue: the expired breath from the simulator is basically fully or nearly fully saturated with water vapor at the start of the test for the conditions everyone has been using for the current testing. The primary issue is the saturated expired temperature. We agree with CSE that 25C saturated versus 37C saturated

expired air makes a difference when the SCSR's chemical reactions are trying to start and even more critical when "starter O_2" bottle gas is missing or less than desired. Nick Kyriazi at NIOSH has done considerable work in this area of expired temperature/saturation comparing human subjects and the ABMS/3 and we consider him an expert. His recommendation for these metabolic conditions is a target expired temperature of ~32C at the start of a test. In setting up the protocols for the OMHS&T tests every effort was made to ensure that value and most of the OMHS&T results met this target almost exactly with a few tests slightly lower. CSE's emphasis on this issue may arise because their simulator (truly, very different from the ABMS/3) may have an expired temperature higher than 32C which is more favorable to the SR-100 during startup. The ABMS/3 team (Mr. Deno and Mr. Kay) has assured us their goal is to simulate the human as much as possible regarding ALL parameters under all conditions - no exceptions. They contend that considerable evaluation over many years indicates that the Deec and ABMS/3 are doing an excellent simulation, but they say they continue to evaluate any suggestions and/or data which indicates how we can do better. They have taken OMHS&T suggestions and are working on a "Reactive ABMS/3" implementation and a conversion of wet bulb and dry bulb readings to a relative humidity reading in their output data.

How many human tests have you ran the SR-100 on? If so, please provide copy of data in excel spreadsheet.

No human tests were conducted in conjunction with this study. The OMHS&T has conducted at least eight qualitative SR-100 tests/training exercises where the units were worn either on tread mill or in simulated escapes. No metabolic no data was collected during these tests/training exercises.

How do you explain the difference in oxygen production for a human subject and the oxygen production for ABMS run of serial number 136724?

Since no human tests were conducted it is not possible to answer this question from OMHS&T data. However, the oxygen production of S/N 136724 appears to be consistent with SR-100s run at published NIOSH with human subjects.

What are the units of measure for Exhalation water vapor pressure and Inhalation water vapor pressure? Are these developed from formulas or direct readings?

The units are in milliliters of water vapor derived from wet & dry bulb measurements.

What value was assigned as input for dead space for the following? If so what are the values: breathing hose, breathing bag value, additional input values, chemical canister volume, average atmospheric pressure (mmHg), and any input for chemical, what amounts?

Atmospheric pressures are noted on the calibration page and the average was 750 mmHg.

The implication is that the simulator needs to know these breathing apparatus characteristics; the answer is that the ABMS/3 does not need to know this information. Like a human, the ABMS/3 does not need to know the breathing apparatus characteristics to perform a complete simulation; its only function is to simulate the human side of the process. The ABMS/3's dead space was designed to approximate the 95 percentile adult human.

Aside: If any human system simulator, breathing or otherwise is modified to account for the particularities of a specific product its value as an unbiased comparison tool would be compromised.

Follow on to above: I think you will find that the original programs wrote at Penn State had input for those values.

In rechecking with Scott Deno, the designer of the Deec unit and the ABMS/ and who was also part of the original studies referenced the responses was "NO, there has NEVER been an input parameter for apparatus dead space or any other apparatus characteristic. A good simulator would not need this information to operate properly."

A check with NPPTL also resulted in their saying they make no model specific modifications to their simulators.

What were the time and date for each unit run?

These are the times recorded at the end of each run when the data file was created:

51823	*8/30/2006 5:19 pm*
53664	*8/30/2006 4:09 pm*
60078	*8/30/2006 9:28 am*
60339	*8/31/2006 7:46 am*
60450	*8/30/2006 2:4 7 pm*
60512	*8/30/2006 12:10 pm*
60636	*8/30/2006 9:13 am*
110958	*8/31/2006 10:58 am*
115108	*8/31/2006 9:36 am*
136644	*8/30/2006 11:06 am*
60451	*8/28/2006 11:44 am*
60487	*8/29/2006 7:57 am*
60659	*8/28/2006 4:36 pm*
60659	*8/28/2006 1:28 pm*
136724	*8/28/2006 3:05 pm*
60291	*8/28/2006 11:56 am*
60334	*8/29/2006 10:16 am*
60521	*8/29/2006 3:10 pm*
60661	*8/29/2006 1:00 pm*
Just hose	*8/31/2006 2:07 pm*

Has each lung override event been identified on the spreadsheet for each unit run? If not please identify each occurrence.

By 'lung override' we assume CSE means having to refill the breathing bag with ambient air. The events are noted on the bottom of each worksheet and can be identified by analysis of the data; see next comment.

Unit Run 136724 – Based on the data presented in the spreadsheet it appears that a substantial amount of gas has been exchanged at the 9.5 minute interval. Oxygen value drop from 42% to 27 % in 1 minute, Carbon dioxide increased from 1% to 4% in 30 seconds, Expired Dry and Wet Bulb temperature decreased, Exhalation/Inhalation Water Vapor Decreased. How much gas was withdrawn at 9.5 and 10 minutes?

The breathing bag went flat at the 9.5 minute interval as evidenced by the declining O_2 values and the negative 10.8 cmH_2O inhalation pressure. The drop in oxygen to 27%, the drop in wet and dry bulb temperature, and the increase in CO_2 are all results of having to refill the bag with ambient air.

There is no reference to the bag going flat on run 136724; if the bag went flat and the circuit refilled, then the oxygen level should have dropped to 16-17%?

Agreed, we should have added the footnote to that page. But since it did not affect the oxygen we neglected it in the draft. The oxygen levels would not have necessarily dropped that low (16-17%) since they started off fairly high and the event was over within a minute. At that point in the life the KO_2 should have been in high oxygen production so it should have been able to recover. The others happened with much lower initial oxygen levels and lasted longer. We have rechecked all the spreadsheets and will color code those instances when the bags went flat.

If this unit flat bagged then that would mean that it had lost all gas even with residual oxygen of 42% left in the canister and hose the concentration would be 17-18% once refilled with exhaled air.

On tests were there was high O_2 content, we didn't completely refill the bag. The rational was that the residual starter O_2 would allow enough time for the chemical bed to start producing, so just add a few breaths to keep the breathing bag from going flat. If the bag had gone completely flat we saw inhalation pressures much higher than those seen in the event.

In addition a number of factors limit the effect of adding outside air on the internal O_2 levels:

1. The human (or the ABMS/3) has dead space volume which will dilute the inject air
2. The apparatus has dead space volume which will dilute the inject air
3. The volume actually injected is unknown and probably variable, and may be smaller than that assumed by some

4. The injected air's concentration on a relative basis may not be vastly different than the inside air's concentration (certainly much closer in concentration than, say, 50 or 100% O_2)
5. Injection location will affect if and how much the ABMS/3 might detect this event before the injected air becomes fully mixed.

In summary, one would not necessarily expect a big change in internal O_2 concentration in response to injecting some outside air to fill a flat breathing bag.

NIOSH COMMENTS

It is interesting to see your independent study validate NIOSH results indicating potential problems from storing the CSE SR 100 at elevated temperatures. Storage and handling of SCSRs must strictly adhere to specific manufacturer recommendations. The OMHS&T study and findings will help to increase awareness about the limitations of SCSR use.

The OMHS&T study additionally indicates the need for NIOSH to examine issues relating to failure of the compressed oxygen cylinder that may or may not be related to excessive heat.

The ABMS/3 is not the model used in the NIOSH (Long Tern Field Evaluations) LTFE. Instead, a simulator built by DEEC, Inc is used, and that machine, from time to time, was upgraded or modified.

Text corrected accordingly with comments from the builder of both units as to their relative similarities.

NIOSH does not approve any type of simulator nor does NIOSH audit its use.

Text corrected to reflect the approval but as part of the yearly contracted audit of all certified SCSR manufacturers NIOSH audits the calibration of all devices used in the QA program. In the case of Ocenco, this includes all calibration of the ABMS/3 which is used in the companies approved QA program. So while NIOSH does not audit simulators its does audit the particular ABMS/3's calibration and the procedures to maintain calibration. Text corrected accordingly.

NIOSH does not agree the ABMS/3 protocol is the same as that used in our tests. As previously commented, the metabolic simulator used by NIOSH was manufactured by a different company than the simulator used in the OMHS&T study. Further evidence of differences in the protocol resulting from the test equipment is raised in the discussion about inspired carbon dioxide spikes in the flat bag event. The reported performance suggests there may be a difference in the carbon dioxide injection and measurement method. This indicates the protocol used by OMHS&T is not the same as the NIOSH evaluation protocol.

The protocol is the same, BD1830 waveform, 1.35 liters per minute VO_2, 1.15 liters per minute VCO_2. These metabolic values were checked with NIOSH staff prior to the start of testing and twice validated during the OMHS&T testing.

The CO_2 spikes are the result of the test operators having to re-inflate the SR100 breathing bag because the KO_2 production of O_2 was insufficient to support the BD1830 demands. When the bag went flat, the port on the top of the lung was opened during inhalation to allow air into the system. This was done for 8 to 20 breaths to fill the bag. The CO_2 spikes occur because a column of high percentage CO_2 exhaled air is now static at the gas sampling port during ambient inhalations.

Unless recently modified the Deec machine use the identical needle valves and stepper motors to introduce CO_2 into the system and the same software algorithm to calibrate the gas analyzers and measure inhaled gas used in the ABMS/3.

The ventilation rate specified in 42 CFR Part 84 for closed circuit breathing resistance is 40 liters/minute operated on a breathing machine at 24 respirations per minute. The peak inhalation flow rate in this NIOSH test is approximately 115 liters/minute.

This footnote has been corrected and the flow rate of the ABMS/3 was verified to be within the stated range with its Silverman cam rated at 118 liters per minute

The level cited appears to come from 42 CFR Part 84 in which measurements are made immediately downstream from the scrubber. Higher concentrations at the mouth are not unusual. The rest of the paragraph calls into question how the Ocenco ABMS/3 injects and measures CO_2, since a similar affect is not noted on the NIOSH simulator

The mechanisms for injection of carbon dioxide were reviewed and found to be the same for the Deec unit as for the ABMS/3. The origins of the spikes are discussed above. Under the description of the LTFE studies the unit would have failed based upon breathing resistance if the breathing bag went flat. Our attempt to give the units the benefit of the doubt and allow the simulated user to re-inflate the bag is the cause of the spikes rather than a function of the simulator.

The text was rewritten to clarify this point.

Regarding access to the NIOSH simulator, while we agree the need for approval was raised very early on, we believe that the needed approvals were obtained in a timely manner.

There was no notification of OMHS&T of such change in availability status so we went ahead with the optional location. Agreement to route all requests through the NPPTL Director should improve communications in the future.

In summary, NIOSH recognizes the importance of the OMHS&T study and encourages distribution of the information to increase user awareness of SCSR performance and limitations of use.

Thank you.

MSHA COMMENTS

Did all the units tested pass the visual and acoustic tests?

Yes

Did you measure the values for the acoustic tests?

The strapped on Acoustic Solids Movement Detector was used providing on a pass fail indicator.

The method for manually starting an SCSR on the simulator differs appreciably from the manufacturer's recommended procedure. The simulator immediately imposes a constant work rate on the SCSR, while the manufacturer's instructions require the user to start out slowly for the first five minutes, after a manual start, before quickening the pace.

Since we did not assume that we would need to manually start the units this was not anticipated. When the low levels were observed we called NPPTL and inquired if they had seen the low oxygen levels we were seeing. We were told that in an experimental process to investigate the same phenomena we observed they had done tests with an individual on a tread mill starting the person off walking as if in cold start until the inhalation oxygen levels fall below 12% before pulling the actuator tab. This reportedly happens around 15 minutes into the test. If the starter fails then the test is terminated. Since this modification in protocol was not part of the previously published NIOSH reports it was determined not to add a human cold start.

Aside: While starting slow may be best it is likely that miner would start at some level above a slow start during the first five minutes of an emergency sufficient that they had to don an SCSR.

The LTFE simulator is not an Ocenco ABMS/3.

Text corrected accordingly with comments from the builder of both units as to their relative similarities.

The 1.5% carbon dioxide level cites references the point down stream of the scrubber.

The text was rewritten to clarify this point.

INTERNAL REVIEW COMMENTS

Need the definition and units for the MouthO_2Tav, Mth CO_2Tav, MouthO_2Vav, Mth CO_2Vav

> *Time weighted O_2% at the mouth ,*
> *Time weighted CO_2% at the mouth,*
> *Volume weighted O_2 % at the mouth , and*
> *Volume weighted CO_2% at the mouth.*

What is the water bath temperature?

> *The water bath is set at 43C. Text modified to indicate.*

Is it possible that the CO_2 spikes are the result of water getting into the CO_2 sample line? NIOSH has modified their DEEC to run sample lines through a column of Dri-Rite before they go into the instrument.

> *Spoke with Nick Kyriazi, NPPTL, who said water droplets getting into the sample line could cause a rapid increase in the CO_2 reading that would remain high until the water evaporated. However, in our case the CO_2 spikes may be due to us inflating the breathing bag during the test - the lung inhales ambient air from the top of the piston, but the sample line continues to draw in 7 to 8% CO_2 gas. This would show as a CO_2 spike. Text modified to clarify.*

There is an error in the "data dictionary" section. These parameters are specified as having units of "liters" when, I think, it should be "concentration fraction". These are: ExpCO_2Pk and InsCO_2Min.

> *Text modified to indicate.*

Scott Deno's title is wrong.

> *Titled corrected to Scott Deno, President, Deec Systems Inc. His title was shown in earlier drafts as Director of Electronic and Computer Services, Penn State University. Dr. Denno's current Penn State position is not in any way involved in the ABMS/3 design either in the past or now. And, in fact, almost all of the ABMS work throughout the years was done by Deec Systems. Ocenco licenses the design from Deec Systems.*

Attribution for design of ABMS is wrong.

> *Corrected from "... by Penn State University's Noll Human Performance Laboratory in conjunction with its Center for Electronic Design, Communications and Computing" to "...Deec Systems, State College, PA".*

> *Even though some early work was done at Noll Lab the majority of the development was done under a NIOSH contract between NIOSH and Deec Systems in the Mid 1980's*

Regarding "flat bag" events; this is a fairly violent negative pressure event for the ABMS/3 and the SCSR and most gas concentration data during that event should probably be suspect regarding accuracy. As far as a spike, I would be cautious about proposing theories about its cause (page 8). This has not been brought to the attention of the ABMS team in the past. We can think of nothing in the ABMS/3 system design which would cause this.

If the bypass was affected through the mixing chamber, this might be the result in the CO_2 issue. Even though this is a minor effect and issue, I would recommend in the future NOT doing the bypass through the mixing chamber and alternatively, bypass almost anywhere else in the breathing pathway (such as at the mouth).

As a matter of note, the ABMS/3 gas measurements should recover from this high negative pressure almost immediately after the high negative pressure disappears.

Referenced text modified.

CSE

Safety Works

October 10, 2006

Mr. Randall Harris
West Virginia Office of Miners' Health
Safety and Training
1615 Washington Street, East
Charleston, WV 25311-2126

Re: CSE Corporation Comments on Draft Study "Effects of Long-Term Temperature Extremes on Self-Contained Self-Rescuers: Initial Findings"

Dear Mr. Harris:

First, we acknowledge receipt on October 1, 2006 of the third draft of the study entitled "Effects of Long-Term Temperature Extremes of Self-Contained Self Rescuers: Initial Findings," prepared by you along with Mr. Ashby for ultimate submission to OMHST. CSE welcomes the opportunity to comment and understands that you intend to publish the report shortly. Unfortunately, with only days to examine this latest version and its newest conclusions, CSE's comments must be confined to the testing protocol used.

We very much appreciate that OMHST is currently engaged in the critical mission of trying to ensure that miners have a ready supply of oxygen available in the event of an emergency. This is CSE's full time occupation and has been for the last twenty-eight years. We intend to continue our review of your recent study, but we may not be able to complete our review before your publication deadline.

Once again, CSE invites your team to work with us as we test whether the protocols you used will deliver data and results that are verifiable and repeatable. CSE has learned over the 28 years it has developed its lifesaving breathing apparatus that good reliable scientific results depend on a great deal of checking and rechecking of methods and results.

As you know, CSE has continually offered its cooperation with your investigation in all respects and has urged your team to visit the CSE plant to review and assess the condition of the units taken out of service because of their poor condition. We have offered to share our protocols and the controls that CSE uses to obtain accurate and consistent measurements of SR-100 performance. We would also like to share what we know about NIOSH testing controls so that your results could be verified and repeatable. Your team declined this offer prior to publishing the report.

We also are concerned that your team did not use NIOSH facilities for your tests. Instead, your team worked with our competitor, Ocenco, using Ocenco's simulator which is designed to test, not the chemical generation units CSE manufactures, but the compressed oxygen units that Ocenco produces.

You will also recall that we suggested that it would be technically difficult for Ocenco to modify its simulator to receive the hard controls that need to be in place to record and measure the test data. Our preliminary review of the limited data in your report indicates that the necessary modifications were not made. The impact on the test data that was generated was predictable because of flaws in your controls.

Your test results are based on the presumption that Ocenco's simulator is identical to the simulator used by NIOSH. We do not agree. The two simulators are not comparable. Besides important configuration differences, which skewed your test results, your test procedures effectively starved the SR-100's in your test of water vapor which is critical to production of oxygen and removal of carbon dioxide in the SR-100 chemical generation unit. The failure to adequately control temperature led to results of reduced oxygen production and spiked CO_2 levels. Had proper controls been used, you would have obtained very different test data on the performance of these damaged units.

At the same time you were conducting your tests, CSE and NIOSH examined a set of 1997 and 1998 vintage SR-100s carried by inspectors from the Pennsylvania Department of Mine Safety which had been exposed to excessive temperatures in the field. CSE tested seven of those units, while NIOSH tested six. With permission from Pennsylvania Department of Mine Safety, we will share with you the results of those tests, which are significantly different from your test results. With one exception, every bottle of oxygen deployed. Each unit reached optimal oxygen production timely and CO_2 levels were in normal limits for the full hour of operation.

It has long been known that any SCSR, whether it is CSE's SR-100 or another manufacturer's unit, that has been exposed to temperature outside the limits set by the manufacturer is not considered to be in acceptable operating condition and is to be removed from service. The same is true for units that have sustained physical damage. CSE is confident that federal and state regulators have actively enforced manufacturers' warnings to remove units from service that were exposed to excessive heat or that otherwise do not meet performance criteria due to their physical condition, but obviously we are now discovering that many outdated, overheated, and damaged units have remained in the field.

Another major concern with your testing is that the test singled out damaged SR-100 units for testing. West Virginia miners also use Ocenco, Draeger and MSA units. Your testing excludes our competitors' units without explanation. Our competitors struggle with performance issues that are documented and should be included in any investigation that purports to evaluate all SCSR's.

The rush to publish data on damaged SR-100 units before testing competitors' units is clearly not based on an evenhanded approach and it suffers from a lack of scientific integrity. Worse yet, for CSE, it foments misleading media attention by implying that only SR-100 units are of concern to regulators. If nothing else, it prompts sensational headlines that are completely misleading to the public.

The enclosed Pittsburgh Post-Gazette article is a perfect example. The story is fair to CSE, because it is factually sound, but the headline gives the impression that 30% of perfectly

good CSE units failed, when in fact the article is talking about damaged units. If other units had been tested, this headline could not have been limited to CSE's units. We cannot stress enough how damaging we consider such headlines to be to CSE's reputation.

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Your report concedes that OMHST inspectors ignored CSE's care and handling instructions. CSE cannot police the condition of its units post-sale. CSE gives explicit instructions and user aids as to when units must be taken out of service, but CSE necessarily relies on those who have custody or regulatory oversight control to screen units and see to it that outdated, damaged or overheated units are removed from service.

CSE relies on the operators and federal and state mine inspectors to assist the miners in identifying and removing damaged units in accordance with manufacturer instructions. Inspectors must set the standard. When OMHST ignores manufacturer warnings on temperature and physical damage resulting in carrying units that are so obviously damaged into mines, OMHST sends the wrong message to the industry. If there are operators who received incorrect training on care and use of the SR-100's from OMHST inspectors, please advise and CSE will target those locations for remedial training.

CSE would also like to offer to provide OMHST inspectors with additional training on use and care of the SR-100. Educating your team on the SR-100 using our training simulation models is important. Because mine inspectors play a crucial role in ensuring that SCSR's in mines are maintained in accordance with manufacturer's inspection and removal criteria, it is critical that West Virginia inspectors be able to recognize damage that warrants removal from service.

We do agree with your conclusion: the industry must re-invigorate training. CSE took the leadership role to address training. CSE offers the SR-D, its "donning unit" which gives the miner the experience of putting on the unit. CSE also offers the SR-T, which is the disposable live trainer which replicates the SR-100 experience from start to finish in 10 minutes including simulation of the heat and breathing resistance a miner may experience.

— Safety Works

CSE designs for worst case scenario conditions – oxygen deficiency and a toxic environment. We advocate training in simulations of these conditions for every miner. We believe that demonstrating proficiency should be considered.

CSE has the training tools to reinforce important training lessons: the instruction manual, the training videos, the daily inspection charts and the mouthpiece trainer in addition to the tools described above. While CSE cannot force the market to invest in training products, CSE is more than willing to partner with enforcement agencies on the efficacy of these tools as we lead the effort to reinvigorate educating miners.

In our meeting yesterday, we shared with you our serious reservations concerning your sampling methods and test protocols. You indicated that you believe that the qualifications in your report sufficiently prevent your conclusions from being generalized to the population of SR-100's in the field because OMHST concedes that its inspectors improperly handled the units that you tested. CSE disagrees that merely conceding poor handling practices is sufficient to satisfy critics who will suggest that your data is relevant to assessing the condition of units in the field.

The protocol recommended to you for your test effectively starved the SR-100 of water vapor which depleted oxygen production and spiked CO_2 levels. From this data, you conclude that there was sub-optimal performance in damaged units. CSE believes that your team should await the release of NIOSH's data of the units it inspected under virtually identical conditions obtained from Pennsylvania mine inspectors. We also believe you should not release your report until you have completed testing of other manufacturers' SCSRs. If you are unwilling to wait to release your report CSE feels strongly that your report should register the criticisms we have imparted, not only of your methods but also of the data generated. We also ask that you include a copy of this letter in an appendix to your report.

Again, we appreciate having this opportunity to review your draft report and to provide these comments. CSE fully supports continued testing of all SCSR's as they clearly represent indispensable preparedness and life saving technology for our nation's miners. We stand ready to assist West Virginia in any way we can with further testing and evaluation of SCSR's. Our testing facilities are open and available to you at any time.

Sincerely,

Scott A. Shearer

enclosure
cc: Ronald Wooten

CSE CORPORATION 600 Seco Road Monroeville, Pennsylvania 15146 Phone 412-856-9200 Fax 412-856-9203

APPENDIX D

The following pages are the data sheets from each SCSR tested. Those wishing the Excel files may contact randall.j.harris@verizon.net

DATA DICTIONARY

For use with attached spreadsheets

Serial Number – Manufacturer's embossed serial number

Manufacture Date – Manufacturer's embossed date

Indicator Top – Top cover moisture indicator

Indicator Bottom – Bottom cover moisture indicator

Indicator Temperature – High Temperature indicator

ASMD – Acoustic Solids Movement Detector test

Case Condition – Plastic cover condition

Seal Condition – Rubber seals for top and bottom covers

Opening Ease – Ease or difficulty of removing covers

Breathing Hoses – Condition of breathing hoses

Starter Bottle – Did the oxygen bottle discharge?

Time – Time was recorded at 30-second intervals. The first two intervals are ignored for warm-up and cold starting of the test SCSR.

STPD – standard temperature and pressure dry gas - a standard set of conditions for experimental measurements, to enable comparisons to be made between sets of data - 60 °F and 14.696 psia and 0.0 percent moisture

Exp O2 – Percentage of expired gas that is oxygen at STPD.

Exp CO2 – Percentage of expired gas that is carbon dioxide at STPD conditions.

Ins O2 – Percentages of inspired gas that is oxygen at STPD conditions.

Ins CO2 – Percentage of inspired gases that is carbon dioxide at STPD conditions.

Exp Vol – Expired gas total volume in liters at STPD conditions.

Ins Vol – Inspired gas total volume in liters at STPD conditions.

Exp Pk Prs – Expired peak pressure in centimeters of water column equivalent.

Ins Pk Prs – Inspired peak pressure in centimeters of water column equivalent

Exp Av Prs – Expired average pressure in centimeters of water column equivalent.

Ins Av Prs – Inspired average pressure in centimeters of water column equivalent.

Exp Time – Duration of expired breath.

Ins Time – Duration of inspired breath.

Exp CO2 Pk – Expired carbon dioxide peak concentration fraction at STPD

Ins CO2Min – Inspired carbon dioxide peak concentration fraction at STPD.

VO2 Stpd – Liters of oxygen consumed per minute at STPD.

VCO2 Stpd – Liters of carbon dioxide produced per minute at STPD.

VE Stpd – Expired gas volume in liters per minute at STPD.

Spare 1 – Not used – ignore value.

Spare 2 – Not used – ignore value.

InsWB EndT – Inspired wet bulb temperature at end of breath in degrees C.

InsDB EndT – Inspired dry bulb temperature at end of breath in degrees C.

ExpDB EndT – Expired dry bulb temperature at end of breath in degrees C.

ExpWB EndT – Expired wet bulb temperature at end of breath in degrees C.

ExpDB EndT – Duplicate data – ignore.

Test time – Elapsed time – duplicate data.

ExpH2Ovapr – Expired water vapor

InsH2Ovapr – Inspired water vapor

Avg Exh O2 – Average exhaled oxygen – not used.

MouthO2Tav – Mouth oxygen time weighted average per minute at STPD.

Mth CO2Tav – Mouth carbon dioxide time weighted average per minute at STPD.

MouthO2Vav – Mouth oxygen volume weighted average per minute at STPD.

Mth CO2Vav – Mouth carbon dioxide volume weighted average per minute at STPD.

InsWBAvgTp – Inspired wet bulb average temperature in degrees C.

InsDBAvgTp – Inspired dry bulb average temperature in degrees C.

Time	Exp O2	Exp CO2	Ins O2	Ins CO2	Exp Vol	Ins Vol	Exp Pk Prs	Ins Pk Prs	Exp Av Prs	Ins Av Prs	xp CO2 Pk	s CO2Min	VE Stpd	sWB EndT	sDB EndT	xpDB EndT	pWB EndT	xpDB EndT	ExpH2OVapr	InsH2OVapr	uthO2TAv	th CO2TAv	uthO2VAv	h CO2VAv	sWBAvgTp	sDBAvgTp
sec	percent	percent	percent	percent	liters	liters	cm H2O	cm H2O	cm H2O	cm H2O	liters	liters	liers/min	C	C	C	C	C							C	C
0.0	0.00%	0.00%	0.00%	0.00%	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.00	0.00	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.5	21.35%	0.21%	21.67%	0.25%	1.9776	1.6613	1.7363	-14.5232	0.5248	-9.6356	0.0037	0.0004	25.8000	22.3622	22.2208	29.5769	29.2590	29.5769	954.65	945.40	0.1960	0.0018	0.2151	0.0023	23.5235	23.5447
1.0	36.77%	0.21%	49.03%	0.09%	1.6508	1.6573	1.5818	-2.2044	0.6716	-0.9777	0.0041	0.0003	29.2752	25.9604	27.1757	28.5478	27.7411	28.5478	1001.34	983.81	0.4293	0.0015	0.4290	0.0015	26.9424	27.8158
1.5	70.09%	0.72%	68.67%	0.26%	1.6452	1.6629	2.8209	-4.9474	2.0682	-3.6219	0.0137	-0.0001	29.1752	25.3255	26.8470	29.6340	28.1716	29.6340	926.28	999.01	0.6932	0.0052	0.6938	0.0049	27.1341	28.2001
2.0	59.62%	2.19%	62.18%	0.80%	1.6469	1.6611	3.3452	-4.9750	2.5888	-3.6337	0.0407	-0.0001	29.2067	27.6973	28.9194	31.7779	31.1637	31.7779	1081.82	1161.96	0.6088	0.0159	0.6090	0.0150	29.8946	30.3246
2.5	56.63%	3.67%	59.40%	1.34%	1.6452	1.6628	3.3369	-5.0412	2.5255	-3.7089	0.0640	-0.0001	29.1769	28.0330	29.4625	32.0923	31.3024	32.0923	1094.45	1172.53	0.5798	0.0262	0.5802	0.0250	30.1148	30.7830
3.0	54.64%	4.35%	57.38%	1.63%	1.6466	1.6615	3.4142	-5.1268	2.4937	-3.7737	0.0762	0.0000	29.2002	28.2811	29.9199	32.4211	31.3097	32.4211	1094.90	1176.19	0.5595	0.0313	0.5601	0.0299	30.2488	31.2978
3.5	52.89%	4.62%	55.59%	1.75%	1.6480	1.6601	3.4252	-5.1295	2.5329	-3.8253	0.0807	0.0000	29.2253	28.4708	31.1776	33.2357	31.3608	33.2357	1087.15	1171.14	0.5417	0.0333	0.5424	0.0319	30.3610	32.1638
4.0	51.08%	4.83%	53.80%	1.86%	1.6464	1.6617	3.4142	-5.2924	2.5248	-3.9266	0.0828	0.0000	29.1965	28.5730	31.9923	34.0647	31.4922	34.0647	1081.28	1166.90	0.5237	0.0348	0.5244	0.0335	30.4760	32.8918
4.5	49.43%	4.95%	52.18%	1.92%	1.6446	1.6634	3.4473	-5.3724	2.4571	-4.0274	0.0848	0.0000	29.1661	28.7628	32.4354	34.3220	31.5359	34.3220	1083.08	1170.14	0.5074	0.0357	0.5081	0.0344	30.5866	33.2115
5.0	47.88%	5.04%	50.62%	2.01%	1.6460	1.6620	3.3314	-5.4579	2.3594	-4.1552	0.0893	0.0000	29.1911	28.9014	32.9213	34.4220	31.7111	34.4220	1092.82	1179.93	0.4916	0.0368	0.4925	0.0352	30.7370	33.5101
5.5	46.35%	5.13%	49.12%	2.02%	1.6475	1.6605	3.3259	-5.4938	2.2638	-4.3048	0.0879	0.0000	29.2175	29.1422	33.0642	34.6078	31.8279	34.6078	1106.91	1195.25	0.4765	0.0372	0.4773	0.0357	30.9356	33.7788
6.0	44.82%	5.15%	47.61%	2.05%	1.6458	1.6623	3.3590	-5.6925	2.1261	-4.5450	0.0895	0.0000	29.1861	29.3393	33.4930	34.9937	31.9300	34.9937	1120.62	1206.66	0.4613	0.0375	0.4622	0.0360	31.1138	34.0321
6.5	43.07%	5.30%	45.96%	2.09%	1.6439	1.6642	3.1051	-5.8691	1.9258	-4.8236	0.0912	0.0000	29.1524	29.6969	33.8074	35.1223	32.2073	35.1223	1138.08	1222.18	0.4443	0.0385	0.4451	0.0370	31.3427	34.3369
7.0	41.26%	5.33%	44.19%	2.11%	1.6453	1.6628	3.0692	-8.3555	1.5963	-5.3855	0.0909	0.0000	29.1779	29.9961	34.0647	35.3510	32.2219	35.3510	1159.07	1241.07	0.4264	0.0386	0.4272	0.0372	31.5699	34.5991
7.5	31.73%	9.02%	33.71%	5.83%	1.6440	1.6640	3.3866	-8.8522	1.8001	-3.6111	0.1162	0.0169	29.1554	31.5651	34.2791	35.3510	32.9517	35.3510	1278.97	1329.85	0.3288	0.0726	0.3272	0.0743	32.4556	34.7661
8.0	28.20%	3.80%	31.84%	1.44%	1.6396	1.6684	3.7674	-5.0302	2.9298	-3.5791	0.0640	0.0000	29.0775	30.6310	34.7221	35.7512	32.7912	35.7512	1217.91	1278.78	0.2997	0.0272	0.3002	0.0262	32.0738	35.0962
8.5	27.87%	4.88%	31.46%	1.88%	1.6431	1.6650	3.9385	-5.0440	2.8840	-3.6078	0.0827	0.0000	29.1381	30.8353	34.9937	36.1371	32.8058	36.1371	1213.43	1284.80	0.2960	0.0351	0.2966	0.0338	32.1688	35.4341
9.0	26.92%	4.98%	30.53%	1.92%	1.6405	1.6676	3.7564	-5.1185	2.8238	-3.6882	0.0843	0.0000	29.0922	31.1565	35.2367	36.2657	32.9955	36.2657	1234.39	1301.54	0.2866	0.0359	0.2873	0.0345	32.3917	35.6692
9.5	26.31%	5.14%	29.89%	1.99%	1.6425	1.6655	3.6487	-5.2234	2.7455	-3.7798	0.0884	0.0000	29.1285	31.5286	35.4225	36.4230	33.1707	36.4230	1260.41	1324.35	0.2802	0.0371	0.2810	0.0356	32.6297	35.8761
10.0	25.70%	5.27%	29.30%	2.04%	1.6447	1.6634	3.6570	-5.3061	2.7225	-3.8529	0.0895	0.0001	29.1666	31.8279	35.6369	36.6087	33.2874	36.6087	1286.44	1344.84	0.2743	0.0380	0.2750	0.0365	32.8423	36.0855
10.5	25.20%	5.27%	28.77%	2.04%	1.6422	1.6659	3.7039	-5.4579	2.7140	-3.9191	0.0885	0.0002	29.1224	32.0760	36.0656	36.7803	33.5355	36.7803	1308.44	1362.93	0.2691	0.0379	0.2699	0.0365	33.0640	36.2847
11.0	24.76%	5.27%	28.32%	2.03%	1.6396	1.6685	3.6239	-5.4276	2.7085	-3.9779	0.0886	0.0002	29.0760	32.4117	36.3229	36.9518	33.6377	36.9518	1329.33	1379.74	0.2647	0.0379	0.2654	0.0365	33.2795	36.5174
11.5	24.26%	5.29%	27.80%	2.02%	1.6418	1.6663	3.5935	-5.4855	2.6769	-3.9881	0.0877	0.0003	29.1156	32.7693	36.5659	37.2090	33.8640	37.2090	1354.83	1401.12	0.2597	0.0379	0.2603	0.0366	33.4920	36.7181
12.0	23.72%	5.31%	27.21%	2.05%	1.6441	1.6640	3.6791	-5.4607	2.6340	-4.0441	0.0886	0.0003	29.1564	32.9371	36.9518	37.2948	34.1048	37.2948	1378.73	1421.43	0.2539	0.0382	0.2547	0.0368	33.6923	36.9244
12.5	23.04%	5.37%	26.50%	2.10%	1.6414	1.6667	3.5797	-5.5545	2.6135	-4.1078	0.0900	0.0005	29.1080	33.2071	37.0661	37.4234	34.2288	37.4234	1401.44	1440.22	0.2469	0.0388	0.2477	0.0373	33.9116	37.1034
13.0	22.07%	5.50%	25.58%	2.14%	1.6411	1.6670	3.6211	-5.5821	2.5956	-4.1633	0.0905	0.0006	29.1027	33.4991	37.2090	37.5663	34.4113	37.5663	1423.88	1458.63	0.2376	0.0395	0.2382	0.0382	34.1012	37.2494
13.5	20.90%	5.42%	24.39%	2.11%	1.6378	1.6703	3.6018	-5.6704	2.5244	-4.2739	0.0894	0.0007	29.0443	33.6961	37.4663	37.8665	34.6010	37.8665	1441.49	1470.75	0.2258	0.0390	0.2265	0.0377	34.2685	37.4563
14.0	19.97%	5.43%	23.39%	2.10%	1.6400	1.6681	3.5384	-5.7615	2.3954	-4.4733	0.0890	0.0009	29.0834	33.8640	37.7093	37.8522	34.6302	37.8522	1459.18	1486.79	0.2161	0.0390	0.2168	0.0377	34.4137	37.5896
14.5	19.13%	5.43%	22.47%	2.10%	1.6425	1.6656	3.2707	-6.0788	2.0954	-4.8628	0.0890	0.0010	29.1279	34.1924	37.8093	37.8665	34.8638	37.8665	1481.88	1506.57	0.2073	0.0390	0.2080	0.0377	34.5922	37.7540
15.0	18.08%	5.56%	21.30%	2.16%	1.6391	1.6690	2.9174	-16.8551	0.6412	-7.0000	0.0907	0.0013	29.0673	34.4843	38.2810	38.2095	35.1046	38.2095	1509.03	1530.59	0.1962	0.0399	0.1969	0.0386	34.8706	38.0316
15.5	17.24%	4.90%	18.69%	3.54%	1.6351	1.6730	3.3921	-4.1250	1.5244	-2.4395	0.0665	0.0229	28.9969	34.2799	37.5806	37.9808	34.9221	37.9808	1482.53	1508.18	0.1798	0.0422	0.1796	0.0422	34.6464	37.6434
16.0	16.54%	5.12%	19.59%	2.05%	1.6382	1.6699	3.6349	-5.2372	2.7079	-3.8016	0.0842	0.0014	29.0518	34.3018	38.2810	38.2095	35.1411	38.2095	1501.69	1521.06	0.1800	0.0371	0.1806	0.0359	34.8111	38.1233
16.5	15.05%	5.36%	18.36%	2.13%	1.6336	1.6745	3.5797	-5.3724	2.6358	-3.9250	0.0878	0.0017	28.9703	34.6594	38.6097	38.3238	35.2724	38.3238	1522.85	1536.96	0.1664	0.0387	0.1670	0.0374	35.0117	38.2927
17.0	14.27%	5.46%	17.61%	2.17%	1.6362	1.6718	3.6073	-5.4441	2.5678	-4.0723	0.0885	0.0019	29.0168	34.8492	38.8527	38.4954	35.4695	38.4954	1546.56	1555.56	0.1588	0.0394	0.1594	0.0381	35.1780	38.4744
17.5	13.48%	5.61%	16.90%	2.21%	1.6393	1.6687	3.5025	-5.5159	2.4575	-4.1756	0.0881	0.0022	29.0723	35.0973	39.0671	38.5525	35.6519	38.5525	1578.09	1583.03	0.1514	0.0402	0.1519	0.0391	35.4061	38.6184
18.0	12.59%	5.51%	16.09%	2.18%	1.6348	1.6733	3.4142	-5.5959	2.3760	-4.3112	0.0865	0.0024	28.9914	35.4330	39.0671	38.7812	35.8709	38.7812	1599.60	1600.87	0.1429	0.0395	0.1434	0.0384	35.6147	38.7656
18.5	12.23%	5.48%	15.81%	2.16%	1.6342	1.6739	3.2486	-5.7891	2.1574	-4.6402	0.0852	0.0025	28.9807	35.6154	39.3529	38.7812	35.9803	38.7812	1616.15	1613.94	0.1397	0.0392	0.1402	0.0382	35.7527	38.9257
19.0	12.27%	5.50%	15.91%	2.18%	1.6302	1.6778	3.1161	-9.1806	1.5815	-5.6272	0.0853	0.0027	28.9106	35.7395	39.4672	38.8955	36.0898	38.8955	1627.43	1624.15	0.1403	0.0394	0.1409	0.0384	35.8874	39.0397
19.5	12.34%	5.65%	15.95%	2.30%	1.6342	1.6738	2.9312	-34.8752	-1.8729	-10.8681	0.0892	0.0032	28.9818	35.7979	39.3529	38.8527	36.0898	38.8527	1635.13	1635.36	0.1407	0.0409	0.1414	0.0398	35.9538	39.0864
20.0	12.32%	6.10%	16.04%	2.49%	1.6382	1.6698	2.8512	-64.5712	-9.4770	-21.3179	0.0948	0.0039	29.0520	35.6519	39.0099	38.8955	36.1774	38.8955	1634.48	1642.44	0.1415	0.0441	0.1418	0.0429	35.9632	38.9856
20.5	12.99%	6.22%	15.22%	4.19%	1.6333	1.6748	3.6349	-6.2168	-0.6800	-2.2670	0.0733	0.0177	28.9644	35.5789	38.4239	38.2810	35.8709	38.2810	1611.11	1609.08	0.1409	0.0522	0.1411	0.0520	35.6175	38.2817
21.0	15.13%	4.87%	18.66%	1.99%	1.6333	1.6748	3.8336	-5.3061	2.9673	-3.7689	0.0734	0.0033	28.9643	35.2432	39.3529	38.7812	35.6811	38.7812	1576.33	1575.09	0.1685	0.0351	0.1689	0.0343	35.4216	38.8259
21.5	14.51%	5.39%	18.41%	2.27%	1.6366	1.6714	3.7453	-5.3613	2.8666	-3.8325	0.0841	0.0035	29.0238	35.0316	39.6387	38.9956	35.2870	38.9956	1531.59	1545.53	0.1640	0.0393	0.1646	0.0383	35.1994	39.1478
22.0	14.70%	5.48%	18.67%	2.31%	1.6402	1.6678	3.7232	-5.4386	2.8202	-3.8980	0.0850	0.0038	29.0878	35.1265	39.9246	39.0671	35.2724	39.0671	1531.41	1547.56	0.1663	0.0399	0.1669	0.0389	35.2097	39.2808
22.5	14.97%	5.52%	18.97%	2.36%	1.6369	1.6711	3.7177	-5.3475	2.7823	-3.9439	0.0861	0.0040	29.0294	35.2505	39.9961	39.0671	35.2141	39.0671	1531.78	1547.13	0.1690	0.0404	0.1697	0.0394	35.2526	39.4065
23.0	15.21%	5.59%	19.28%	2.40%	1.6338	1.6743	3.7122	-5.4496	2.7800	-3.9596	0.0863	0.0043	28.9739	35.2432	40.0389	39.0671	35.3016	39.0671	1532.82	1547.86	0.1719	0.0409	0.1724	0.0400	35.2937	39.4697
23.5	15.51%	5.64%	19.67%	2.44%	1.6374	1.6706	3.7453	-5.4441	2.7961	-3.9628	0.0869	0.0045	29.0386	35.2870	40.2104	39.2100	35.3235	39.2100	1541.11	1557.01	0.1753	0.0414	0.1759	0.0404	35.3569	39.5649
24.0	15.76%	5.65%	19.98%	2.46%	1.6409	1.6671	3.8447	-5.3834	2.8517	-3.9200	0.0867	0.0048	29.1001	35.4184	40.1533	39.2957	35.4476	39.2957	1549.15	1564.26	0.1781	0.0415	0.1787	0.0405	35.4010	39.6344
24.5	15.88%	5.67%	20.18%	2.52%	1.6377	1.6703	3.9799	-5.3475	2.9240	-3.8704	0.0881	0.0049	29.0438	35.4330	40.4248	39.4244	35.3600	39.4244	1547.25	1563.44	0.1796	0.0419	0.1803	0.0409	35.4251	39.6698
25.0	16.13%	5.66%	20.49%	2.51%	1.6379	1.6702	3.9247	-5.3337	3.0011	-3.8193	0.0872	0.0050	29.0461	35.3965	40.3534	39.3529	35.3600	39.3529	1548.72	1564.54	0.1824	0.0418	0.1831	0.0408	35.4441	39.7374
25.5	16.42%	5.65%	20.85%	2.50%	1.6349	1.6731	4.0544	-5.2841	3.1234	-3.7332	0.0864	0.0051	28.9942	35.4768	40.4963	39.3529	35.4184	39.3529	1546.97	1563.22	0.1857	0.0417	0.1863	0.0407	35.4622	39.7736
26.0	16.84%	5.61%	21.34%	2.50%	1.6384	1.6696	4.4076	-5.2234	3.2676	-3.6364	0.0869	0.0052	29.0561	35.3965	40.4248	39.4958	35.4330	39.4958	1549.75	1566.67	0.1901	0.0416	0.1909	0.0406	35.4715	39.8251
26.5	17.60%	5.56%	22.05%	2.50%	1.6418	1.6662	4.2862	-5.2289	3.3759	-3.5918	0.0870	0.0051	29.1160	35.4476	40.5535	39.6959	35.4476	39.6959	1551.87	1570.95	0.1973	0.0413	0.1982	0.0403	35.4933	39.9066
27.0	18.86%	5.53%	23.21%	2.49%	1.6393	1.6687	4.2696	-5.2096	3.4007	-3.6252	0.0869	0.0052	29.0716	35.5060	40.8536	39.6387	35.4330	39.6387	1546.37	1567.44	0.2094	0.0412	0.2104	0.0401	35.5044	40.0333
27.5	20.03%	5.69%	24.40%	2.56%	1.6371	1.6709	4.4076	-5.3613	3.4667	-3.6139	0.0897	0.0053	29.0331	35.5352	40.7821	39.7531	35.5060	39.7531	1550.38	1571.72	0.2211	0.0424	0.2221	0.0413	35.5745	40.1421
28.0	21.13%	5.76%	25.61%	2.60%	1.6405	1.6676	4.5456	-5.4027	3.5330	-3.5907	0.0910	0.0054	29.0924	35.6519	41.0680	39.9246	35.6154	39.9246	1562.48	1585.30	0.2325	0.0430	0.2337	0.0418	35.6801	40.2671
28.5	22.26%	5.69%	26.90%	2.50%	1.6435	1.6645	4.5953	-5.3613	3.6373	-3.6064	0.0906	0.0051	29.1461	35.6227	41.1252	39.9246	35.7103	39.9246	1568.49	1589.59	0.2446	0.0421	0.2458	0.0409	35.7116	40.3944
29.0	23.71%	5.44%	28.30%	2.39%	1.6413	1.6667	4.5180	-5.3337	3.5934	-3.6663	0.0873	0.0047	29.1071	35.5789	41.2109	40.0675	35.6519	40.0675	1556.59	1579.64	0.2587	0.0403	0.2601	0.0391	35.6551	40.4435
29.5	25.43%	5.44%	29.90%	2.40%	1.6394	1.6686	4.4297	-5.3393	3.5931	-3.6971	0.0882	0.0044	29.0741	35.5644	41.2395	40.0389	35.6811	40.0389	1550.79	1577.80	0.2752	0.0405	0.2767	0.0392	35.6593	40.4714
30.0	27.38%	5.35%	31.77%	2.34%	1.6425	1.6656	4.5180	-5.4027	3.6170	-3.7098	0.0894	0.0043	29.1273	35.5060	41.2824	39.9961	35.6154	39.9961	1553.56	1580.14	0.2941	0.0399	0.2957	0.0384	35.6615	40.5141
30.5	28.72%	5.42%	33.23%	2.36%	1.6428	1.6652	4.6284	-5.4717	3.6254	-3.7218	0.0915	0.0041	29.1337	35.5425	41.2824	40.1390	35.6884	40.1390	1553.28	1580.49	0.3079	0.0404	0.3097	0.0389	35.6627	40.5211
31.0	30.04%	5.40%	34.69%	2.30%	1.6453	1.6628	4.7719	-5.3834	3.6257	-3.7459	0.0902	0.0040	29.1774	35.4768	41.3538	39.9246	35.6811	39.9246	1556.43	1583.26	0.3218	0.0400	0.3236	0.0385	35.6669	40.5267
31.5	31.74%	5.16%	36.27%	2.19%	1.6434	1.6647	4.4766	-5.4441	3.6177	-3.8050	0.0871	0.0037	29.1433	35.4695	41.3538	39.9246	35.7614	39.9246	1555.42	1587.15	0.3382	0.0382	0.3401	0.0367	35.7210	40.5716
32.0	33.66%	5.13%	38.02%	2.21%	1.6417	1.6664	5.1472	-5.5600	3.6213	-3.8275	0.0885	0.0035	29.1131	35.6811	41.4110	40.1533	35.8855	40.1533	1565.66	1596.91	0.3565	0.0383	0.3584	0.0367	35.8249	40.6367
32.5	35.72%	5.16%	39.98%	2.18%	1.6441	1.6640	4.5870	-5.5683	3.6584	-3.8575	0.0875	0.0035	29.1560	35.7614	41.5682	40.2104	36.0898	40.2104	1582.76	1608.70	0.3767	0.0382	0.3785	0.0367	35.9062	40.6641
33.0	37.68%	5.20%	41.92%	2.19%	1.6463	1.6618	4.5290	-5.5821	3.6875	-3.8840	0.0883	0.0033	29.1948	35.8271	41.6397	40.1533	36.2358	40.1533	1605.88	1627.96	0.3961	0.0385	0.3980	0.0370	36.0486	40.6883
33.5	39.50%	5.24%	43.76%	2.18%	1.6445	1.6635	4.7526	-5.5821	3.7144	-3.9009	0.0888	0.0033	29.1638	35.9803	41.4968	40.3534	36.3452	40.3534	1625.63	1643.05	0.4144	0.0387	0.4163	0.0371	36.1874	40.7091
34.0	41.16%	5.20%	45.41%	2.18%	1.6429	1.6652	4.6394	-5.6042	3.7453	-3.9161	0.0896	0.0033	29.1346	36.1774	41.6397	40.2104	36.5277	40.2104	1648.12	1659.56	0.4308	0.0386	0.4328	0.0369	36.3386	40.7436
34.5	42.53%	5.14%	46.85%	2.13%	1.6449	1.6632	4.7250	-5.7063	3.7646	-3.9445	0.0871	0.0032	29.1704	36.2358	41.4968	40.2104	36.6736	40.2104	1664.95	1672.13	0.4450	0.0379	0.4469	0.0364	36.4297	40.7891
35.0	43.88%	5.10%	48.19%	2.11%	1.6468	1.6612	4.7057	-5.7146	3.7837	-3.9812	0.0873	0.0032	29.2046	36.3233	41.6969	40.2676	36.7320	40.2676	1679.44	1686.78	0.4584	0.0376	0.4603	0.0360	36.5398	40.8498
35.5	45.37%	4.99%	49.58%	2.05%	1.6451	1.6630	4.6698	-5.7891	3.8029	-4.0186	0.0848	0.0031	29.1744	36.5642	41.6397	40.3534	36.9290	40.3534	1702.68	1704.12	0.4729	0.0367	0.4748	0.0352	36.7034	40.9336
36.0	46.73%	4.96%	50.83%	2.05%	1.6452	1.6628	4.7388	-5.8167	3.8214	-4.0505	0.0842	0.0032	29.1762	36.7466	41.9255	40.4248	37.0750	40.4248	1728.57	1729.89	0.4860	0.0365	0.4878	0.0350	36.9116	40.9794
36.5	48.31%	4.98%	52.30%	2.04%	1.6436	1.6645	4.8823	-5.8581	3.8444	-4.0850	0.0835	0.0031	29.1469	37.1991	41.9255	40.4963	37.3450	40.4963	1769.09	1764.84	0.5014	0.0365	0.5031	0.0351	37.2051	41.0332
37.0	49.88%	5.03%	53.82%	2.05%	1.6454	1.6627	5.0423	-5.9271	3.8648	-4.1158	0.0831	0.0033	29.1789	37.9507	42.0685	40.6392	37.8778	40.6392	1852.14	1844.85	0.5168	0.0367	0.5185	0.0354	37.8096	41.0905
37.5	51.48%	4.99%	55.27%	2.06%	1.6470	1.6611	4.8712	-6.0236	3.8914	-4.1638	0.0828	0.0033	29.2079	39.4176	42.1542	40.7250	39.3592	40.7250	2073.86	2031.80	0.5321	0.0366	0.5337	0.0352	39.1829	41.1867
38.0	52.87%	5.02%	56.65%	2.05%	1.6456	1.6625	4.8630	-6.0236	3.9110	-4.1954	0.0834	0.0033	29.1824	36.0168	42.2828	40.5678	36.4912	40.5678	1638.20	1642.13	0.5460	0.0367	0.5476	0.0354	36.2568	41.2591
38.5	54.23%	5.02%	57.98%	2.04%	1.6444	1.6637	4.8602	-6.0347	3.9408	-4.2239	0.0828	0.0034	29.1617	35.5644	42.3829	40.7821	35.8563	40.7821	1560.16	1586.18	0.5595	0.0366	0.5611	0.0353	35.8278	41.3426
39.0	55.53%	5.02%	59.25%	2.04%	1.6461	1.6619	4.8216	-6.1202	3.9696	-4.2602	0.0825	0.0034	29.1925	35.5789	42.4972	40.9251	35.7249	40.9251	1548.89	1576.55	0.5723	0.0366	0.5739	0.0353	35.7452	41.4035
39.5	56.68%	5.06%	60.40%	2.03%	1.6478	1.6603	4.9595	-6.1782	4.0020	-4.2751	0.0811	0.0034	29.2216	35.5352	42.4401	40.8393	35.7395	40.8393	1542.18	1571.61	0.5841	0.0367	0.5854	0.0355	35.6926	41.4073

SR100 Serial No. 115108

Effects of long-term heat esposure on self-contained self-rescuers

August 31, 2006

Time sec	Exp O2 percent	Exp CO2 percent	Ins O2 percent	Ins CO2 percent	Exp Vol liters	Ins Vol liters	Exp Pk Prs cm H2O	Ins Pk Prs cm H2O	Exp Av Prs cm H2O	Ins Av Prs cm H2O	xp CO2 Pk liters	ns CO2Min liters	VE Stpd liers/min	sWB EndT C	nsDB EndT C	xpDB EndT C	pWB EndT C	xpDB EndT C	ExpH2OVapr	InsH2OVapr	uthO2TAv	th CO2TAv	outhO2VAv	h CO2VAv	sWBAvgTp C	sDBAvgTp C
40.0	57.80%	5.08%	61.48%	2.06%	1.6463	1.6618	4.9457	-6.2030	4.0277	-4.3070	0.0830	0.0035	29.1950	35.5789	42.4258	40.8536	35.7979	40.8536	1539.69	1569.77	0.5949	0.0370	0.5964	0.0357	35.6964	41.4525
40.5	58.73%	5.08%	62.42%	2.05%	1.6448	1.6633	4.9816	-6.2003	4.0632	-4.3297	0.0828	0.0035	29.1689	35.6227	42.4972	40.8965	35.7687	40.8965	1540.04	1569.88	0.6043	0.0370	0.6058	0.0357	35.7218	41.5334
41.0	59.39%	5.07%	63.10%	2.06%	1.6464	1.6617	5.0423	-6.2720	4.0933	-4.3640	0.0823	0.0036	29.1970	35.6154	42.5687	40.9965	35.8344	40.9965	1543.32	1572.50	0.6110	0.0370	0.6125	0.0357	35.7380	41.5783
41.5	59.96%	4.98%	63.64%	2.03%	1.6464	1.6616	5.0285	-6.2996	4.1197	-4.3914	0.0830	0.0035	29.1975	35.6154	42.5687	41.1395	35.7614	41.1395	1543.36	1573.69	0.6164	0.0364	0.6180	0.0350	35.7587	41.6482
42.0	60.45%	4.98%	64.15%	2.02%	1.6479	1.6601	5.0810	-6.3989	4.1388	-4.4282	0.0820	0.0035	29.2248	35.6519	42.7831	41.1823	35.7979	41.1823	1546.84	1577.36	0.6214	0.0364	0.6230	0.0350	35.7900	41.7323
42.5	60.97%	4.99%	64.66%	2.03%	1.6465	1.6616	5.1113	-6.3824	4.1634	-4.4679	0.0823	0.0035	29.1984	35.7249	42.8545	41.0680	35.8344	41.0680	1550.08	1580.55	0.6266	0.0365	0.6281	0.0351	35.8364	41.7880
43.0	61.51%	5.02%	65.22%	2.00%	1.6450	1.6631	5.1362	-6.4541	4.1797	-4.4960	0.0802	0.0036	29.1720	35.7395	42.9546	41.2395	35.8563	41.2395	1554.45	1582.93	0.6324	0.0363	0.6336	0.0351	35.8741	41.8298
43.5	62.21%	4.91%	65.77%	1.98%	1.6465	1.6615	5.1527	-6.5342	4.2091	-4.5405	0.0805	0.0034	29.1994	35.7979	42.8545	41.2109	35.9438	41.2109	1560.53	1588.84	0.6384	0.0358	0.6399	0.0345	35.9209	41.8975
44.0	62.83%	4.87%	66.29%	1.98%	1.6480	1.6600	5.1913	-6.5093	4.2340	-4.5709	0.0808	0.0035	29.2263	35.8563	43.1261	41.1823	35.9438	41.1823	1566.15	1595.49	0.6441	0.0356	0.6456	0.0343	35.9677	41.9280
44.5	63.26%	4.97%	66.73%	2.01%	1.6466	1.6615	5.1941	-6.5618	4.2552	-4.6042	0.0814	0.0036	29.2000	35.9803	43.2833	41.2824	36.0533	41.2824	1571.12	1600.43	0.6485	0.0362	0.6499	0.0349	36.0343	42.0234
45.0	63.83%	4.98%	67.25%	2.02%	1.6451	1.6630	5.2355	-6.5866	4.2794	-4.6456	0.0812	0.0036	29.1739	36.0606	43.0689	41.4682	36.1190	41.4682	1581.80	1610.79	0.6540	0.0363	0.6554	0.0350	36.1428	42.1088
45.5	64.40%	4.94%	67.78%	1.98%	1.6466	1.6615	5.3183	-6.6997	4.3094	-4.6767	0.0817	0.0036	29.2003	36.2722	43.2833	41.4968	36.3452	41.4968	1606.21	1634.78	0.6595	0.0360	0.6609	0.0346	36.3322	42.1648
46.0	64.96%	4.91%	68.30%	1.95%	1.6481	1.6600	5.3128	-6.7743	4.3411	-4.7084	0.0807	0.0034	29.2267	36.5569	43.4119	41.5254	36.6152	41.5254	1642.42	1664.64	0.6649	0.0356	0.6663	0.0343	36.5712	42.2542
46.5	65.51%	4.88%	68.82%	1.93%	1.6465	1.6615	5.3321	-6.8377	4.3620	-4.7634	0.0804	0.0032	29.1998	36.8561	43.6406	41.6397	36.9655	41.6397	1688.84	1703.30	0.6703	0.0354	0.6717	0.0341	36.9001	42.3411
47.0	65.93%	4.89%	69.22%	1.93%	1.6465	1.6615	5.3873	-6.8515	4.3908	-4.7880	0.0790	0.0032	29.1993	37.2939	43.6406	41.6397	37.2210	41.6397	1730.44	1738.56	0.6745	0.0353	0.6758	0.0341	37.1869	42.4242
47.5	66.56%	4.82%	69.70%	1.92%	1.6450	1.6630	5.4121	-6.9288	4.4250	-4.8277	0.0796	0.0031	29.1730	37.0823	43.7550	41.8112	37.1115	41.8112	1708.70	1714.78	0.6800	0.0350	0.6813	0.0337	37.0316	42.5457
48.0	67.14%	4.85%	70.27%	1.91%	1.6467	1.6614	5.4425	-7.0033	4.4490	-4.8916	0.0794	0.0030	29.2020	36.4912	43.9979	41.9255	36.4912	41.9255	1628.50	1647.64	0.6857	0.0351	0.6871	0.0338	36.5134	42.6797
48.5	67.76%	4.91%	70.87%	1.94%	1.6482	1.6599	5.4563	-7.0281	4.4786	-4.9382	0.0782	0.0031	29.2290	36.3233	44.0408	41.8684	36.3233	41.8684	1600.83	1626.39	0.6919	0.0354	0.6932	0.0342	36.3497	42.7887
49.0	68.49%	4.85%	71.50%	1.91%	1.6468	1.6613	5.4977	-7.0999	4.5147	-4.9771	0.0775	0.0033	29.2036	36.4547	44.2123	41.9970	36.3452	41.9970	1599.68	1627.24	0.6987	0.0350	0.6999	0.0338	36.3814	42.8763
49.5	69.09%	4.86%	72.00%	1.97%	1.6453	1.6627	5.5446	-7.1606	4.5471	-5.0044	0.0784	0.0033	29.1782	36.5277	44.3267	42.2114	36.3817	42.2114	1612.70	1637.42	0.7042	0.0354	0.7055	0.0341	36.4846	42.9465
50.0	69.59%	4.90%	72.53%	1.96%	1.6468	1.6613	5.6080	-7.2241	4.5781	-5.0464	0.0795	0.0032	29.2040	36.6371	44.4267	42.2114	36.5642	42.2114	1631.93	1654.73	0.7094	0.0355	0.7106	0.0343	36.6245	43.0394
50.5	70.15%	4.91%	73.03%	1.98%	1.6482	1.6598	5.6329	-7.2489	4.6068	-5.0915	0.0804	0.0031	29.2300	36.7320	44.4982	42.2114	36.4693	42.2114	1631.07	1654.86	0.7146	0.0357	0.7159	0.0345	36.6197	43.0776
51.0	70.64%	4.90%	73.46%	1.99%	1.6468	1.6612	5.6632	-7.3345	4.6431	-5.1359	0.0804	0.0032	29.2047	36.7466	44.5696	42.2114	36.5642	42.2114	1634.42	1656.40	0.7192	0.0357	0.7205	0.0345	36.6538	43.1466
51.5	71.12%	4.87%	73.92%	1.98%	1.6454	1.6627	5.7543	-7.4255	4.6696	-5.1796	0.0800	0.0032	29.1794	36.8488	44.6125	42.2686	36.5569	42.2686	1638.61	1660.32	0.7240	0.0355	0.7252	0.0342	36.7057	43.2093
52.0	71.56%	4.87%	74.35%	1.97%	1.6468	1.6612	5.7460	-7.4448	4.7050	-5.2337	0.0784	0.0033	29.2050	36.9290	44.6411	42.2114	36.6736	42.2114	1652.16	1672.19	0.7284	0.0354	0.7295	0.0342	36.7990	43.2849
52.5	72.01%	4.83%	74.77%	1.93%	1.6468	1.6612	5.7460	-7.4448	4.6741	-5.1668	0.0776	0.0032	29.2052	36.8926	44.5696	42.3543	36.6371	42.3543	1656.25	1676.07	0.7327	0.0350	0.7339	0.0338	36.8180	43.2126
53.0	72.36%	4.92%	75.15%	1.97%	1.6483	1.6598	5.7874	-7.4807	4.6927	-5.2381	0.0784	0.0032	29.2308	36.9363	44.0408	42.0399	36.7028	42.0399	1664.82	1686.97	0.7364	0.0356	0.7375	0.0344	36.8355	42.8433
53.5	72.79%	4.91%	75.49%	1.99%	1.6469	1.6612	5.7874	-7.5276	4.7321	-5.2832	0.0809	0.0032	29.2054	37.0750	44.0694	42.0685	36.8196	42.0685	1677.81	1701.96	0.7401	0.0358	0.7414	0.0345	36.9783	42.9384
54.0	73.29%	4.83%	75.91%	1.99%	1.6454	1.6627	5.8537	-7.6242	4.7626	-5.3414	0.0801	0.0032	29.1797	37.3158	44.2123	42.2686	37.0531	42.2686	1701.13	1723.47	0.7446	0.0354	0.7460	0.0341	37.1696	43.0223
54.5	73.63%	4.90%	76.28%	1.98%	1.6468	1.6612	5.9116	-7.7070	4.7943	-5.3960	0.0786	0.0034	29.2048	37.5129	44.4267	42.4258	37.1845	42.4258	1731.10	1749.45	0.7484	0.0355	0.7495	0.0344	37.3685	43.0914
55.0	74.01%	4.92%	76.63%	2.00%	1.6482	1.6598	5.9420	-7.8119	4.8325	-5.4432	0.0789	0.0033	29.2300	37.9289	44.5553	42.3829	37.4910	42.3829	1773.29	1786.59	0.7521	0.0357	0.7532	0.0346	37.6560	43.2006
55.5	74.38%	4.89%	76.94%	2.02%	1.6468	1.6613	5.9944	-7.8174	4.8697	-5.4935	0.0791	0.0034	29.2038	38.2792	44.4982	42.2829	37.7683	42.2829	1818.67	1824.18	0.7554	0.0358	0.7566	0.0346	37.9714	43.3353
56.0	74.69%	4.97%	77.26%	2.06%	1.6453	1.6628	6.0303	-7.9664	4.9078	-5.5604	0.0797	0.0035	29.1771	38.5711	44.7269	42.4972	38.1040	42.4972	1858.09	1859.02	0.7586	0.0363	0.7597	0.0351	38.2570	43.4250
56.5	75.16%	4.87%	77.63%	2.01%	1.6467	1.6614	6.1048	-7.9968	4.9436	-5.6205	0.0789	0.0036	29.2025	38.9360	44.8555	42.6402	38.2427	42.6402	1894.38	1890.69	0.7628	0.0356	0.7640	0.0344	38.4922	43.5155
57.0	75.45%	4.95%	77.92%	2.04%	1.6481	1.6599	6.1517	-8.0657	4.9896	-5.6701	0.0785	0.0037	29.2282	39.2425	44.9555	42.5544	38.5127	42.5544	1930.02	1925.53	0.7658	0.0360	0.7668	0.0349	38.7466	43.5990
57.5	75.77%	5.00%	78.21%	2.09%	1.6466	1.6614	6.2428	-8.1623	5.0277	-5.7252	0.0800	0.0038	29.2015	39.6293	45.0699	42.7831	38.7535	42.7831	1972.77	1965.18	0.7688	0.0367	0.7699	0.0355	39.0574	43.6763
58.0	76.04%	5.03%	78.49%	2.09%	1.6451	1.6630	6.2621	-8.2313	5.0629	-5.7936	0.0802	0.0039	29.1734	40.5269	45.3557	42.7259	39.3300	42.7259	2065.36	2058.34	0.7716	0.0367	0.7726	0.0356	39.7496	43.7947
58.5	76.23%	5.08%	78.67%	2.12%	1.6461	1.6619	6.3393	-8.3141	5.0994	-5.8549	0.0808	0.0041	29.1928	43.2782	45.3557	42.9260	41.4537	42.9260	2417.48	2405.76	0.7734	0.0372	0.7745	0.0360	42.0967	43.8923
59.0	76.48%	5.01%	78.84%	2.14%	1.6457	1.6623	6.3807	-8.3555	5.1349	-5.8995	0.0802	0.0041	29.1856	45.2486	45.3557	43.0689	43.1322	43.0689	2721.00	2679.99	0.7755	0.0369	0.7766	0.0357	43.8573	44.0026
59.5	76.57%	5.12%	78.97%	2.16%	1.6473	1.6608	6.4497	-8.4962	5.1765	-5.9684	0.0812	0.0043	29.2134	45.7521	45.5844	43.0118	43.5044	43.0118	2812.41	2758.73	0.7767	0.0375	0.7777	0.0364	44.3320	44.0768
60.0	76.77%	5.09%	79.09%	2.19%	1.6456	1.6625	6.4773	-8.5763	5.2147	-6.0131	0.0828	0.0045	29.1828	45.9784	45.6416	43.2119	43.6796	43.2119	2844.44	2787.19	0.7781	0.0377	0.7793	0.0364	44.5343	44.1836
60.5	76.84%	5.09%	79.16%	2.20%	1.6439	1.6642	6.5491	-8.5956	5.2657	-6.0684	0.0817	0.0046	29.1523	46.1316	45.7559	43.1833	43.7963	43.1833	2860.40	2802.01	0.7789	0.0377	0.7800	0.0365	44.6512	44.2682
61.0	76.87%	5.12%	79.20%	2.22%	1.6455	1.6625	6.6153	-8.6867	5.3016	-6.1300	0.0816	0.0047	29.1820	46.1973	45.7845	43.3548	43.8620	43.3548	2881.18	2819.46	0.7793	0.0379	0.7803	0.0367	44.7489	44.3537
61.5	76.87%	5.12%	79.18%	2.22%	1.6472	1.6608	6.6926	-8.8053	5.3461	-6.2036	0.0809	0.0048	29.2119	46.3944	45.9274	43.3548	43.9131	43.3548	2896.26	2836.98	0.7792	0.0378	0.7802	0.0367	44.8441	44.4199
62.0	76.75%	5.19%	79.09%	2.27%	1.6461	1.6620	6.7533	-8.9626	5.3882	-6.3032	0.0810	0.0051	29.1919	39.6293	45.9274	43.3548	38.7900	43.3548	2056.36	1966.85	0.7783	0.0383	0.7792	0.0373	39.1613	44.3948
62.5	76.59%	5.22%	78.90%	2.28%	1.6454	1.6627	6.8140	-9.0702	5.4458	-6.3680	0.0832	0.0052	29.1793	38.6878	45.7559	43.1833	37.6953	43.1833	1825.28	1826.21	0.7764	0.0387	0.7775	0.0375	38.1218	44.1819
63.0	76.36%	5.21%	78.71%	2.28%	1.6468	1.6612	6.8637	-9.1558	5.4772	-6.4335	0.0826	0.0053	29.2048	38.6440	45.7130	42.8545	37.6223	42.8545	1827.55	1829.03	0.7744	0.0386	0.7754	0.0375	38.1102	44.0399
63.5	76.24%	5.19%	78.56%	2.30%	1.6483	1.6598	6.9465	-9.2358	5.5192	-6.5050	0.0819	0.0054	29.2302	38.8046	45.9274	43.1261	37.7829	43.1261	1840.18	1840.12	0.7730	0.0386	0.7740	0.0375	38.2180	44.2950
64.0	76.22%	5.19%	78.45%	2.33%	1.6468	1.6613	6.9878	-9.3214	5.5515	-6.6008	0.0819	0.0054	29.2043	38.9360	45.9989	43.3548	37.8778	43.3548	1853.67	1851.17	0.7723	0.0387	0.7734	0.0376	38.3248	44.3847
64.5	76.14%	5.25%	78.43%	2.30%	1.6468	1.6613	7.0568	-9.4593	5.5601	-6.7048	0.0818	0.0055	29.2040	39.0089	46.1418	43.1404	37.8778	43.1404	1866.31	1861.51	0.7720	0.0388	0.7729	0.0378	38.4002	44.3762
65.0	76.12%	5.25%	78.33%	2.35%	1.6453	1.6628	7.1231	-9.6001	5.5638	-6.8182	0.0830	0.0057	29.1778	39.2133	46.0418	43.2976	37.9872	43.2976	1880.58	1872.84	0.7712	0.0391	0.7722	0.0380	38.5035	44.4279
65.5	76.14%	5.22%	78.30%	2.34%	1.6467	1.6613	7.1534	-9.6801	5.5675	-6.9465	0.0832	0.0058	29.2032	39.3008	46.2133	43.3548	37.9872	43.3548	1896.40	1888.81	0.7711	0.0390	0.7722	0.0378	38.6191	44.5005
66.0	76.07%	5.28%	78.25%	2.35%	1.6482	1.6599	7.2114	-9.8098	5.5636	-7.0896	0.0819	0.0060	29.2289	39.4760	46.2133	43.4119	38.0748	43.4119	1913.43	1904.00	0.7706	0.0392	0.7716	0.0381	38.7247	44.5491
66.5	76.00%	5.30%	78.13%	2.42%	1.6467	1.6614	7.2638	-9.9837	5.5631	-7.2271	0.0835	0.0062	29.2026	39.5563	46.2133	43.4977	38.2427	43.4977	1925.46	1913.92	0.7696	0.0397	0.7706	0.0386	38.8206	44.6286
67.0	76.00%	5.26%	78.11%	2.37%	1.6452	1.6628	7.3218	-10.1078	5.5862	-7.3654	0.0816	0.0065	29.1763	39.7095	46.3276	43.4691	38.3083	43.4691	1935.00	1921.49	0.7696	0.0392	0.7706	0.0382	38.8967	44.6883
67.5	75.94%	5.29%	78.01%	2.42%	1.6467	1.6614	7.4156	-10.3010	5.6061	-7.5116	0.0839	0.0066	29.2020	39.8482	46.4991	43.6406	38.4251	43.6406	1951.58	1936.16	0.7687	0.0397	0.7698	0.0386	39.0022	44.7708
68.0	75.81%	5.38%	77.92%	2.44%	1.6466	1.6614	7.4984	-10.4666	5.6430	-7.6143	0.0816	0.0069	29.2015	39.9577	46.4991	43.6406	38.5346	43.6406	1969.49	1955.70	0.7678	0.0401	0.7687	0.0391	39.1510	44.8267
68.5	75.75%	5.36%	77.77%	2.48%	1.6481	1.6600	7.6308	-10.6156	5.7091	-7.7341	0.0834	0.0071	29.2276	40.1182	46.7850	43.5263	38.5419	43.5263	1984.63	1968.48	0.7666	0.0403	0.7676	0.0392	39.2359	44.8685
69.0	75.56%	5.44%	77.59%	2.52%	1.6466	1.6615	7.6639	-10.7425	5.7268	-7.8736	0.0832	0.0074	29.2009	40.3225	46.7135	43.6406	38.6805	43.6406	1999.06	1981.39	0.7649	0.0409	0.7658	0.0398	39.3509	44.9401
69.5	75.43%	5.44%	77.43%	2.56%	1.6451	1.6630	7.7743	-10.9688	5.7602	-8.0245	0.0859	0.0075	29.1740	40.4101	46.8421	43.6978	38.7170	43.6978	2012.45	1992.19	0.7632	0.0412	0.7643	0.0400	39.4507	45.0108
70.0	75.11%	5.57%	77.18%	2.56%	1.6465	1.6615	7.8847	-11.1703	5.8202	-8.1704	0.0839	0.0080	29.1998	40.5780	46.7850	43.7836	38.7900	43.7836	2033.12	2010.98	0.7607	0.0416	0.7615	0.0407	39.5809	45.0792
70.5	74.94%	5.53%	76.91%	2.62%	1.6480	1.6600	7.9951	-11.3552	5.8819	-8.3032	0.0865	0.0081	29.2260	40.8188	47.0136	43.7550	38.9214	43.7550	2054.50	2033.28	0.7582	0.0419	0.7593	0.0408	39.7378	45.1699
71.0	74.69%	5.53%	76.62%	2.63%	1.6465	1.6616	8.1055	-11.4600	5.9613	-8.4152	0.0861	0.0083	29.1988	41.0158	47.1423	43.8550	39.0089	43.8550	2070.59	2052.24	0.7556	0.0419	0.7566	0.0408	39.8938	45.2415
71.5	74.37%	5.58%	76.31%	2.65%	1.6449	1.6631	8.2159	-11.6532	6.0268	-8.5862	0.0863	0.0086	29.1712	41.2275	47.1852	43.9265	39.1257	43.9265	2088.07	2071.65	0.7524	0.0423	0.7534	0.0412	40.0523	45.3091
72.0	74.04%	5.62%	75.95%	2.68%	1.6464	1.6617	8.3676	-11.9016	6.0827	-8.7483	0.0852	0.0090	29.1973	41.5997	47.3567	44.1409	39.1549	44.1409	2109.22	2101.80	0.7491	0.0426	0.7500	0.0415	40.2603	45.3961
72.5	73.65%	5.70%	75.58%	2.72%	1.6479	1.6602	8.4477	-12.0837	6.1395	-8.8937	0.0862	0.0092	29.2237	41.9281	47.3567	44.0408	39.3008	44.0408	2145.60	2140.20	0.7453	0.0431	0.7462	0.0421	40.5177	45.4458
73.0	73.30%	5.69%	75.14%	2.78%	1.6463	1.6618	8.5332	-12.2741	6.1991	-9.0444	0.0881	0.0095	29.1954	42.2565	47.4996	44.1409	39.4833	44.1409	2183.21	2173.59	0.7412	0.0435	0.7422	0.0424	40.7700	45.5243
73.5	72.94%	5.70%	74.75%	2.76%	1.6462	1.6618	8.6574	-12.4673	6.2605	-9.1898	0.0865	0.0099	29.1944	42.5849	47.6425	44.2123	39.7022	44.2123	2215.01	2206.87	0.7376	0.0434	0.7384	0.0423	41.0036	45.5841
74.0	72.40%	5.78%	74.21%	2.83%	1.6446	1.6635	8.8561	-12.6687	6.3931	-9.2992	0.0880	0.0102	29.1652	42.8622	47.7569	44.2695	39.8847	44.2695	2251.21	2237.61	0.7321	0.0441	0.7331	0.0430	41.2396	45.6950
74.5	71.87%	5.82%	73.66%	2.87%	1.6461	1.6620	9.0299	-12.8260	6.5137	-9.4166	0.0878	0.0106	29.1919	43.1322	47.7854	44.3552	40.1036	44.3552	2288.94	2273.57	0.7268	0.0445	0.7277	0.0434	41.4744	45.7619
75.0	71.25%	5.85%	73.01%	2.91%	1.6476	1.6604	9.1872	-13.0992	6.6023	-9.6376	0.0898	0.0111	29.2191	43.5628	47.8140	44.4982	40.3225	44.4982	2335.23	2315.19	0.7204	0.0450	0.7213	0.0438	41.7466	45.8522
75.5	70.41%	5.98%	72.20%	2.94%	1.6459	1.6621	9.2921	-13.2814	6.6891	-9.8259	0.0888	0.0116	29.1893	43.8620	47.8569	44.5696	40.4685	44.5696	2376.30	2351.46	0.7122	0.0456	0.7130	0.0446	42.0122	45.9507
			79.20%	5.83%			7.2638	-4.1250																		
			15.22%	0.80%			2.8512	-64.5712																		
			50.04%	2.17%																						

Bag went flat at 15 min and 19.5 min and had to take external breaths to reinflate - ignored the inspired value at those times and use end of life max at 66.5 min

SR100 Serial no. 53664

Effects of long-term heat on self-contained self-rescuers

August 31, 2006

Time sec	Exp O2 percent	Exp CO2 percent	Ins O2 percent	Ins CO2 percent	Exp Vol liters	Ins Vol liters	Exp Pk Prs cm H2O	Ins Pk Prs cm H2O	Exp Av Prs cm H2O	Ins Av Prs cm H2O	xp CO2 Pk liters	ns CO2Min liters	VE Stpd liers/min	sWB EndT C	nsDB EndT C	xpDB EndT C	pWB EndT C	pDB EndT C	ExpH2OVapr	InsH2OVapr	uthO2TAv	th CO2TAv	puthO2VAv	th CO2VAv	sWBAvgTp C	sDBAvgTp C
0.5	23.97%	1.40%	25.96%	1.84%	1.9736	1.6600	1.5266	-1.0895	0.5089	-0.2613	0.0227	0.0025	25.7435	23.0628	23.9359	30.9489	29.9596	30.9489	996.60	954.82	0.2215	0.0115	0.2497	0.0162	24.0112	24.9333
1.0	22.00%	0.27%	30.33%	-0.01%	1.6492	1.6542	0.8974	-1.0453	0.1334	-0.2590	0.0054	-0.0004	29.2466	26.4566	29.0624	30.1486	27.9746	30.1486	964.13	950.53	0.2653	0.0013	0.2617	0.0013	27.2223	29.5290
1.5	70.93%	0.74%	75.89%	0.23%	1.6449	1.6585	2.9312	-3.2640	2.1338	-2.1130	0.0164	-0.0007	29.1703	25.1795	29.6340	31.9923	27.5148	31.9923	809.72	925.45	0.7359	0.0054	0.7341	0.0049	26.7775	30.7440
2.0	63.64%	2.12%	66.81%	0.69%	1.6434	1.6599	3.0168	-4.0588	2.3913	-2.8338	0.0396	-0.0007	29.1448	28.6460	32.5497	35.3510	31.5067	35.3510	1052.53	1157.50	0.6523	0.0150	0.6523	0.0140	30.5723	33.8354
2.5	60.58%	3.47%	63.47%	1.16%	1.6446	1.6588	2.9174	-4.0919	2.1692	-2.9557	0.0623	-0.0007	29.1654	29.0474	33.1357	35.6369	31.8570	35.6369	1083.72	1181.85	0.6198	0.0245	0.6202	0.0232	30.8988	34.2589
3.0	57.99%	4.17%	60.94%	1.44%	1.6444	1.6589	2.8485	-4.0505	2.1060	-3.0301	0.0765	-0.0007	29.1625	29.1568	33.4215	35.9227	32.0030	35.9227	1095.60	1189.40	0.5939	0.0298	0.5947	0.0280	31.0385	34.5727
3.5	55.35%	4.42%	58.35%	1.51%	1.6458	1.6576	2.7739	-4.2133	2.0241	-3.1413	0.0787	-0.0007	29.1860	29.3466	33.9218	36.1514	31.8570	36.1514	1085.50	1182.75	0.5678	0.0313	0.5685	0.0297	31.0308	34.9272
4.0	53.52%	4.51%	56.40%	1.55%	1.6442	1.6592	2.6415	-4.3817	1.9568	-3.2801	0.0804	-0.0007	29.1581	29.2663	34.3505	36.4944	31.8206	36.4944	1071.26	1171.42	0.5487	0.0319	0.5496	0.0303	30.9948	35.2687
4.5	52.16%	4.59%	55.00%	1.61%	1.6425	1.6608	2.6084	-4.5776	1.9042	-3.4189	0.0838	-0.0007	29.1290	29.5217	34.6650	36.7803	31.5943	36.7803	1065.39	1167.08	0.5348	0.0328	0.5358	0.0310	31.0232	35.5747
5.0	50.81%	4.84%	53.76%	1.67%	1.6439	1.6594	2.6415	-4.6438	1.8233	-3.5818	0.0845	-0.0007	29.1538	29.5947	35.0652	36.9946	31.9665	36.9946	1085.33	1183.86	0.5220	0.0342	0.5229	0.0326	31.2376	35.8590
5.5	49.95%	4.79%	52.90%	1.70%	1.6454	1.6579	2.5973	-4.8205	1.6857	-3.7647	0.0870	-0.0007	29.1800	29.6969	35.4082	36.9518	32.2949	36.9518	1106.35	1200.91	0.5131	0.0343	0.5143	0.0324	31.4427	36.0973
6.0	49.17%	4.86%	52.20%	1.72%	1.6438	1.6595	2.4897	-4.9336	1.5823	-3.9502	0.0878	-0.0007	29.1518	29.7772	35.7083	37.2805	31.6016	37.2805	1056.05	1155.62	0.5057	0.0347	0.5068	0.0329	31.0440	36.3212
6.5	48.82%	4.80%	51.88%	1.69%	1.6422	1.6611	2.4097	-5.1075	1.4533	-4.1847	0.0851	-0.0007	29.1229	30.0472	35.9799	37.4091	31.8570	37.4091	1084.39	1177.36	0.5024	0.0342	0.5035	0.0325	31.3224	36.5683
7.0	48.70%	4.83%	51.85%	1.68%	1.6437	1.6596	2.3793	-6.1754	1.2449	-4.5504	0.0857	-0.0007	29.1504	30.3975	36.2800	37.6378	31.8935	37.6378	1098.90	1196.98	0.5017	0.0342	0.5028	0.0325	31.5406	36.7461
7.5	48.83%	4.81%	52.00%	1.69%	1.6437	1.6596	2.3931	-7.7898	1.0933	-4.8616	0.0852	-0.0007	29.1503	30.5434	36.4230	37.6378	32.0030	37.6378	1116.39	1205.08	0.5030	0.0342	0.5041	0.0325	31.6481	36.8905
8.0	49.10%	4.82%	52.27%	1.70%	1.6453	1.6580	2.4428	-9.9312	0.8759	-5.3252	0.0850	-0.0007	29.1783	30.9229	36.4944	37.6378	32.1198	37.6378	1138.35	1231.41	0.5057	0.0343	0.5069	0.0326	31.9002	36.9281
8.5	36.93%	7.36%	40.67%	4.50%	1.6337	1.6697	2.9036	-3.7056	2.0147	-2.2147	0.1043	0.0107	28.9720	32.2584	36.2800	36.9946	32.9882	36.9946	1249.55	1329.21	0.3906	0.0584	0.3880	0.0593	32.8470	36.5892
9.0	39.60%	3.91%	43.19%	1.36%	1.6445	1.6589	3.0058	-4.5887	2.2586	-3.2636	0.0711	-0.0007	29.1633	31.2440	36.6087	37.4663	32.5868	37.4663	1180.84	1270.63	0.4129	0.0279	0.4139	0.0264	32.2794	36.9089
9.5	39.90%	4.47%	43.41%	1.58%	1.6427	1.6606	3.0002	-4.6025	2.2693	-3.2891	0.0817	-0.0007	29.1322	31.4557	37.1376	37.7807	32.9882	37.7807	1205.01	1290.69	0.4153	0.0320	0.4165	0.0302	32.5464	37.2611
10.0	39.76%	4.68%	43.35%	1.65%	1.6409	1.6625	3.0168	-4.6770	2.2613	-3.3329	0.0840	-0.0007	29.0993	31.6235	37.2948	38.0380	33.2874	38.0380	1228.50	1307.49	0.4144	0.0334	0.4156	0.0316	32.7477	37.4246
10.5	39.69%	4.81%	43.26%	1.72%	1.6427	1.6607	3.0278	-4.7266	2.2606	-3.3798	0.0867	-0.0007	29.1310	31.7476	37.4234	37.9237	33.3166	37.9237	1243.34	1321.29	0.4136	0.0345	0.4147	0.0327	32.8923	37.5881
11.0	39.52%	4.91%	43.17%	1.74%	1.6444	1.6589	3.0499	-4.7653	2.2571	-3.4090	0.0886	-0.0007	29.1626	31.9154	37.6950	38.1523	33.5793	38.1523	1261.71	1336.62	0.4123	0.0351	0.4135	0.0333	33.0466	37.7353
11.5	39.36%	4.94%	42.99%	1.75%	1.6426	1.6608	3.0554	-4.7680	2.2508	-3.4605	0.0892	-0.0007	29.1297	32.1125	37.7093	38.3524	33.6450	38.3524	1276.18	1348.22	0.4105	0.0353	0.4117	0.0334	33.1854	37.8405
12.0	39.32%	4.90%	42.88%	1.74%	1.6407	1.6626	3.0720	-4.7653	2.2375	-3.5027	0.0873	-0.0007	29.0968	32.3241	37.9237	38.3810	33.7253	38.3810	1286.64	1357.68	0.4098	0.0350	0.4110	0.0332	33.3097	37.9765
12.5	39.24%	4.89%	42.77%	1.73%	1.6425	1.6608	3.0278	-4.7680	2.2353	-3.5529	0.0865	-0.0007	29.1287	32.5139	38.2810	38.4239	33.8275	38.4239	1303.04	1371.77	0.4090	0.0348	0.4100	0.0331	33.4475	38.1108
13.0	39.02%	4.95%	42.57%	1.73%	1.6425	1.6609	3.0830	-4.8232	2.2313	-3.5947	0.0852	-0.0007	29.1280	32.6233	38.2810	38.4954	34.0099	38.4954	1315.33	1384.95	0.4069	0.0350	0.4079	0.0334	33.5903	38.2475
13.5	38.83%	4.91%	42.30%	1.75%	1.6443	1.6591	3.0278	-4.8425	2.2209	-3.6423	0.0864	-0.0007	29.1601	32.8496	38.4382	38.6669	34.0172	38.6669	1331.86	1397.66	0.4045	0.0350	0.4057	0.0333	33.7142	38.3860
14.0	38.45%	4.99%	41.92%	1.80%	1.6424	1.6610	3.0830	-4.9060	2.2290	-3.6855	0.0890	-0.0007	29.1263	33.0247	38.5668	38.6383	34.1559	38.6383	1344.51	1408.23	0.4006	0.0357	0.4018	0.0339	33.8465	38.5241
14.5	38.05%	5.00%	41.50%	1.80%	1.6404	1.6629	3.0720	-4.9529	2.2028	-3.7365	0.0889	-0.0006	29.0916	33.1707	38.6669	38.7812	34.3091	38.7812	1356.86	1418.40	0.3965	0.0358	0.3977	0.0340	33.9652	38.6035
15.0	37.53%	5.03%	40.99%	1.79%	1.6422	1.6611	3.0278	-5.0578	2.1828	-3.7932	0.0891	-0.0006	29.1230	33.3531	38.7812	38.8527	34.4478	38.8527	1374.07	1433.35	0.3914	0.0359	0.3926	0.0341	34.1032	38.7198
15.5	37.12%	4.97%	40.52%	1.78%	1.6441	1.6593	3.0389	-5.0964	2.1544	-3.8620	0.0888	-0.0006	29.1558	33.4626	38.9527	38.9527	34.4843	38.9527	1388.13	1444.61	0.3870	0.0356	0.3882	0.0338	34.2054	38.8253
16.0	36.61%	5.00%	40.01%	1.79%	1.6420	1.6613	2.9726	-5.1406	2.1056	-3.9388	0.0882	-0.0006	29.1202	33.6085	39.2100	39.0671	34.5937	39.0671	1402.45	1456.10	0.3819	0.0357	0.3831	0.0340	34.3376	38.9241
16.5	36.15%	5.03%	39.56%	1.82%	1.6400	1.6633	2.9947	-5.2178	2.0513	-4.0282	0.0883	-0.0005	29.0845	33.7837	39.2386	39.0099	34.5135	39.0099	1401.37	1453.66	0.3773	0.0360	0.3785	0.0343	34.3412	38.9794
17.0	35.80%	4.98%	39.20%	1.80%	1.6419	1.6614	2.9588	-5.3337	1.9824	-4.1564	0.0882	-0.0005	29.1179	33.8640	39.1385	39.0671	34.4478	39.0671	1397.68	1444.89	0.3738	0.0356	0.3750	0.0339	34.2670	39.0779
17.5	35.53%	5.00%	38.96%	1.81%	1.6438	1.6595	2.9064	-5.3503	1.8831	-4.3103	0.0887	-0.0004	29.1521	33.9296	39.3529	39.1242	34.3091	39.1242	1394.89	1446.97	0.3712	0.0358	0.3725	0.0341	34.2892	39.1888
18.0	35.32%	5.06%	38.80%	1.84%	1.6419	1.6615	2.9036	-5.5683	1.7432	-4.6033	0.0894	-0.0003	29.1167	34.1559	39.4958	39.2814	34.4478	39.2814	1409.67	1460.59	0.3694	0.0362	0.3706	0.0345	34.4363	39.2713
18.5	35.26%	5.09%	38.71%	1.88%	1.6418	1.6615	2.7795	-6.8929	1.5452	-4.9601	0.0922	-0.0003	29.1160	34.1924	39.6387	39.2814	34.5573	39.2814	1419.08	1467.65	0.3685	0.0367	0.3699	0.0348	34.5113	39.3521
19.0	31.41%	6.89%	35.63%	2.51%	1.6390	1.6643	2.9947	-7.7015	1.6956	-4.2843	0.1045	0.0015	29.0663	34.5718	39.4101	39.2957	34.9221	39.2957	1470.82	1505.09	0.3349	0.0480	0.3352	0.0470	34.8305	39.2174
19.5	30.71%	4.08%	34.27%	1.50%	1.6406	1.6627	3.3452	-5.0302	2.4315	-3.6648	0.0709	-0.0003	29.0952	34.1194	39.5673	39.2814	34.8127	39.2814	1441.34	1479.20	0.3239	0.0292	0.3249	0.0279	34.6013	39.2410
20.0	30.46%	4.75%	34.06%	1.76%	1.6388	1.6646	3.2596	-4.9750	2.4071	-3.6965	0.0825	-0.0001	29.0625	34.1924	39.8674	39.3529	34.8638	39.3529	1431.94	1478.31	0.3215	0.0341	0.3226	0.0325	34.6411	39.4405
20.5	29.76%	5.04%	33.55%	1.87%	1.6408	1.6626	3.2900	-5.0026	2.4074	-3.6925	0.0843	0.0001	29.0978	34.3383	39.7817	39.4244	34.9586	39.4244	1451.02	1495.13	0.3157	0.0360	0.3166	0.0345	34.7853	39.5346
21.0	29.38%	5.02%	33.20%	1.88%	1.6429	1.6605	3.2927	-5.0743	2.4225	-3.6828	0.0860	0.0002	29.1351	34.3383	39.9246	39.5816	35.0389	39.5816	1459.63	1502.32	0.3119	0.0360	0.3129	0.0345	34.8359	39.5691
21.5	28.98%	5.10%	32.87%	1.93%	1.6406	1.6628	3.2762	-5.0440	2.4314	-3.6930	0.0882	0.0003	29.0943	34.3748	40.1390	39.5673	34.9586	39.5673	1454.71	1490.21	0.3082	0.0368	0.3092	0.0352	34.7738	39.7110
22.0	28.95%	5.13%	32.89%	1.93%	1.6385	1.6649	3.2817	-5.0523	2.4290	-3.7209	0.0881	0.0004	29.0566	34.2215	40.2104	39.6959	34.5135	39.6959	1409.92	1450.28	0.3081	0.0369	0.3092	0.0353	34.4567	39.7705
22.5	29.27%	5.07%	33.20%	1.92%	1.6407	1.6626	3.2900	-5.1130	2.4356	-3.7393	0.0867	0.0005	29.0965	34.3018	40.2104	39.7102	34.5208	39.7102	1413.55	1455.27	0.3113	0.0365	0.3124	0.0350	34.4946	39.8399
23.0	29.45%	5.13%	33.47%	1.95%	1.6429	1.6604	3.3148	-5.1406	2.4551	-3.7274	0.0881	0.0006	29.1360	34.3091	40.2676	39.7531	34.5135	39.7531	1421.16	1460.22	0.3135	0.0370	0.3146	0.0354	34.5294	39.8935
23.5	29.69%	5.15%	33.79%	1.96%	1.6408	1.6625	3.3590	-5.1406	2.4813	-3.7210	0.0870	0.0006	29.0986	34.1924	40.4248	39.7817	34.5208	39.7817	1409.76	1449.94	0.3163	0.0370	0.3174	0.0356	34.4665	39.9502
24.0	30.13%	5.13%	34.25%	1.95%	1.6388	1.6646	3.4031	-5.1406	2.4977	-3.7221	0.0865	0.0007	29.0622	34.1924	40.3248	39.8103	34.6302	39.8103	1405.69	1454.77	0.3209	0.0369	0.3219	0.0354	34.5262	39.9650
24.5	30.70%	5.08%	34.87%	1.95%	1.6410	1.6623	3.3866	-5.1544	2.5279	-3.7170	0.0869	0.0008	29.1022	34.3383	40.4963	39.7817	34.4843	39.7817	1414.55	1456.70	0.3267	0.0367	0.3279	0.0352	34.5390	40.0465
25.0	31.45%	5.00%	35.59%	1.92%	1.6412	1.6622	3.4556	-5.2096	2.5379	-3.7140	0.0844	0.0009	29.1050	34.3748	40.4963	39.9246	34.5208	39.9246	1412.38	1453.97	0.3341	0.0361	0.3352	0.0346	34.5188	40.0722
25.5	32.65%	4.97%	36.73%	1.92%	1.6434	1.6599	3.4142	-5.1737	2.5488	-3.7388	0.0869	0.0009	29.1447	34.3967	40.7250	39.9818	34.5718	39.9818	1412.08	1461.22	0.3456	0.0361	0.3469	0.0344	34.5795	40.1638
26.0	34.12%	4.95%	38.16%	1.91%	1.6416	1.6617	3.4418	-5.1820	2.5589	-3.7491	0.0864	0.0010	29.1124	34.3748	40.8536	39.9961	34.7032	39.9961	1421.89	1474.48	0.3601	0.0359	0.3614	0.0343	34.7223	40.2563
26.5	35.57%	5.04%	39.62%	1.96%	1.6399	1.6635	3.4583	-5.1958	2.5931	-3.7423	0.0871	0.0011	29.0817	34.4843	40.8965	40.0389	34.8638	40.0389	1433.11	1486.10	0.3746	0.0366	0.3760	0.0350	34.8375	40.2726
27.0	37.23%	4.96%	41.21%	1.98%	1.6421	1.6612	3.4694	-5.2096	2.6445	-3.7288	0.0890	0.0011	29.1211	34.4843	40.9251	39.9961	34.9586	39.9961	1442.80	1493.50	0.3906	0.0365	0.3922	0.0347	34.8940	40.3378
27.5	38.51%	5.10%	42.57%	2.02%	1.6441	1.6592	3.5356	-5.2178	2.6914	-3.7451	0.0900	0.0012	29.1571	34.5427	41.0680	40.1533	35.0389	40.1533	1452.20	1502.68	0.4038	0.0373	0.4054	0.0356	34.9663	40.4006
28.0	39.69%	5.25%	43.81%	2.08%	1.6424	1.6609	3.5384	-5.1958	2.7791	-3.7021	0.0921	0.0014	29.1266	34.5573	41.2109	40.2819	35.2141	40.2819	1457.61	1509.30	0.4160	0.0384	0.4175	0.0367	35.0606	40.5538
28.5	40.37%	5.29%	44.62%	2.11%	1.6407	1.6627	3.6018	-5.1516	2.8354	-3.6644	0.0927	0.0014	29.0960	34.6886	41.1823	40.3820	35.3600	40.3820	1466.48	1514.50	0.4234	0.0387	0.4250	0.0370	35.1379	40.6777
29.0	40.99%	5.18%	45.28%	2.06%	1.6426	1.6608	3.7177	-5.0716	2.8845	-3.6112	0.0892	0.0015	29.1299	34.7397	41.3538	40.4248	35.2870	40.4248	1464.01	1514.20	0.4299	0.0378	0.4313	0.0362	35.1276	40.7208
29.5	41.55%	5.14%	45.84%	2.05%	1.6445	1.6589	3.7122	-5.0854	2.9374	-3.5977	0.0895	0.0014	29.1629	34.6594	41.3538	40.3248	35.2432	40.3248	1461.94	1513.08	0.4354	0.0376	0.4370	0.0359	35.1091	40.7523
30.0	42.31%	5.00%	46.52%	1.99%	1.6427	1.6606	3.7453	-5.1268	2.9936	-3.5715	0.0870	0.0014	29.1323	34.5208	41.3538	40.4963	35.2870	40.4963	1454.89	1505.62	0.4427	0.0366	0.4442	0.0350	35.0630	40.7728
30.5	42.85%	5.03%	47.03%	2.04%	1.6428	1.6606	3.8419	-5.0854	3.0999	-3.5657	0.0889	0.0014	29.1335	34.5208	41.3538	40.3534	35.2141	40.3534	1451.38	1503.62	0.4478	0.0371	0.4494	0.0353	35.0471	40.7813
31.0	43.42%	5.11%	47.67%	2.05%	1.6411	1.6622	3.8116	-5.1295	3.1133	-3.5302	0.0889	0.0014	29.1037	34.5135	41.3538	40.4391	35.1849	40.4391	1447.80	1501.49	0.4539	0.0375	0.4555	0.0358	35.0383	40.7585
31.5	44.45%	4.96%	48.53%	2.00%	1.6430	1.6604	4.1869	-5.1268	3.3433	-3.4641	0.0880	0.0014	29.1367	34.4843	41.4253	40.4963	35.1411	40.4963	1443.85	1496.17	0.4632	0.0365	0.4649	0.0348	34.9829	40.7813
32.0	45.54%	4.99%	49.55%	1.98%	1.6448	1.6585	4.6063	-5.1737	3.4920	-3.4452	0.0873	0.0014	29.1690	34.3967	41.2967	40.3820	35.0681	40.3820	1436.16	1491.36	0.4738	0.0365	0.4754	0.0349	34.9231	40.7504
32.5	46.94%	4.98%	50.77%	1.98%	1.6432	1.6601	5.3735	-5.1958	3.6484	-3.3290	0.0860	0.0014	29.1406	34.1194	38.8527	38.5668	34.8127	38.5668	1451.53	1499.31	0.4870	0.0363	0.4885	0.0348	34.6553	38.6507
33.0	48.40%	4.95%	52.27%	1.87%	1.6417	1.6617	4.1537	-5.2951	3.2532	-3.6810	0.0849	0.0013	29.1134	33.8421	36.3229	36.3229	34.1924	36.3229	1435.80	1482.80	0.5017	0.0357	0.5033	0.0341	34.1470	36.4012
33.5	49.82%	4.89%	53.53%	1.89%	1.6435	1.6599	4.0075	-5.3199	3.2549	-3.6960	0.0853	0.0014	29.1451	33.9369	36.2086	36.4230	34.1924	36.4230	1448.98	1499.10	0.5151	0.0356	0.5168	0.0339	34.2495	36.2458
34.0	51.16%	4.90%	54.81%	1.91%	1.6452	1.6582	4.0434	-5.3834	3.2622	-3.7223	0.0867	0.0014	29.1755	33.9588	36.2657	36.3801	34.3383	36.3801	1451.31	1506.96	0.5281	0.0358	0.5299	0.0340	34.3336	36.4217
34.5	52.27%	5.01%	55.98%	1.95%	1.6436	1.6597	4.0489	-5.4027	3.2778	-3.7519	0.0866	0.0016	29.1481	33.9734	36.5659	36.6373	34.4478	36.6373	1457.00	1512.25	0.5396	0.0364	0.5413	0.0348	34.4280	36.6381
35.0	53.50%	4.99%	57.16%	1.95%	1.6421	1.6612	4.0985	-5.4717	3.3053	-3.7824	0.0868	0.0016	29.1217	34.0464	36.9518	36.7231	34.4551	36.7231	1454.33	1507.39	0.5516	0.0364	0.5533	0.0347	34.4523	36.9642
35.5	54.75%	4.89%	58.33%	1.91%	1.6438	1.6595	4.1179	-5.4717	3.3293	-3.8094	0.0872	0.0016	29.1513	34.1559	38.2095	37.7093	34.8127	37.7093	1462.69	1511.90	0.5636	0.0358	0.5654	0.0340	34.6406	37.9407
36.0	55.70%	4.93%	59.30%	1.90%	1.6439	1.6594	4.1317	-5.5131	3.3472	-3.8439	0.0860	0.0016	29.1536	34.1559	41.5682	40.4248	34.9586	40.4248	1408.15	1461.50	0.5733	0.0357	0.5750	0.0341	34.6997	40.8932
36.5	56.65%	5.01%	60.28%	1.94%	1.6455	1.6578	4.1537	-5.5490	3.3810	-3.8658	0.0880	0.0017	29.1821	34.1924	41.8684	40.7821	34.9805	40.7821	1409.48	1467.50	0.5829	0.0365	0.5846	0.0348	34.7956	41.2351
37.0	57.41%	5.05%	61.10%	1.97%	1.6440	1.6593	4.2145	-5.6097	3.4093	-3.8859	0.0884	0.0018	29.1554	34.2653	42.0685	40.7821	34.9951	40.7821	1413.32	1470.42	0.5907	0.0369	0.5925	0.0351	34.8266	41.2039
37.5	58.03%	4.99%	61.76%	1.95%	1.6426	1.6608	4.2862	-5.5931	3.4306	-3.9081	0.0892	0.0018	29.1293	34.2215	41.9827	40.7821	35.0097	40.7821	1412.53	1468.96	0.5970	0.0366	0.5989	0.0347	34.8295	41.2289
38.0	58.61%	4.84%	62.31%	1.91%	1.6441	1.6592	4.2972	-5.6097	3.4449	-3.9299	0.0876	0.0019	29.1569	34.2653	42.1399	40.7821	34.9951	40.7821	1412.23	1469.13	0.6026	0.0356	0.6046	0.0338	34.8262	41.2715
38.5	58.87%	4.96%	62.69%	1.91%	1.6456	1.6577	4.3083	-5.6815	3.4610	-3.9638	0.0872	0.0018	29.1840	34.2215	42.1542	41.0108	34.9805	41.0108	1410.74	1468.75	0.6060	0.0361	0.6078	0.0344	34.8210	41.3290
39.0	59.38%	4.89%	63.17%	1.88%	1.6442	1.6592	4.2696	-5.7063	3.4707	-3.9952	0.0852	0.0018	29.1578	34.2288	42.1399	40.8536	34.9586	40.8536	1408.51	1466.93	0.6110	0.0355	0.6128	0.0339	34.8159	41.3243
39.5	59.91%	4.84%	63.61%	1.88%	1.6427	1.6606	4.3083	-5.7477	3.4924	-4.0198	0.0843	0.0019	29.1317	34.2507	42.1542	41.0108	35.0681	41.0108	1407.88	1466.61	0.6158	0.0352	0.6176	0.0336	34.8298	41.3575
40.0	60.39%	4.84%	64.03%	1.92%	1.6442	1.6591	4.3110	-5.8029	3.5140	-4.0531	0.0863	0.0019	29.1590	34.1924	42.2114	41.0680	34.9951	41.0680	1407.80	1465.29	0.6202	0.0356	0.6221	0.0338	34.8183	41.4253

SR100 Serial no. 53664

Effects of long-term heat on self-contained self-rescuers

August 31, 2006

Time sec	Exp O2 percent	Exp CO2 percent	Ins O2 percent	Ins CO2 percent	Exp Vol liters	Ins Vol liters	Exp Pk Prs cm H2O	Ins Pk Prs cm H2O	Exp Av Prs cm H2O	Ins Av Prs cm H2O	xp CO2 Pk liters	ns CO2Min liters	VE Stpd liers/min	sWB EndT C	nsDB EndT C	kpDB EndT C	pWB EndT C	kpDB EndT C	ExpH2OVapr	InsH2OVapr	uthO2TAv	th CO2TAv	uthO2VAv	th CO2VAv	sWBAvgTp C	sDBAvgTp C
40.5	60.81%	4.87%	64.43%	1.93%	1.6457	1.6576	4.3524	-5.8139	3.5360	-4.0810	0.0868	0.0020	29.1856	34.2215	42.1542	41.0680	35.0097	41.0680	1408.68	1465.79	0.6243	0.0358	0.6262	0.0340	34.8219	41.4905
41.0	61.36%	4.83%	64.94%	1.89%	1.6443	1.6591	4.3938	-5.8857	3.5579	-4.1176	0.0845	0.0019	29.1598	34.2653	42.3543	40.9251	34.9586	40.9251	1405.79	1464.74	0.6297	0.0352	0.6315	0.0336	34.8302	41.5270
41.5	61.72%	4.94%	65.32%	1.92%	1.6443	1.6590	4.3800	-5.8995	3.5708	-4.1413	0.0848	0.0021	29.1602	34.2653	42.4972	41.0680	34.9951	41.0680	1406.71	1464.93	0.6335	0.0358	0.6352	0.0343	34.8329	41.5356
42.0	62.32%	4.88%	65.82%	1.92%	1.6429	1.6605	4.4076	-5.9574	3.5919	-4.1829	0.0843	0.0021	29.1346	34.3091	42.3829	41.1252	35.0973	41.1252	1407.82	1465.63	0.6390	0.0356	0.6407	0.0340	34.8619	41.6086
42.5	62.84%	4.93%	66.33%	1.93%	1.6444	1.6590	4.4490	-5.9960	3.6096	-4.2149	0.0844	0.0022	29.1612	34.3383	42.4972	41.0680	35.1046	41.0680	1411.73	1470.53	0.6442	0.0359	0.6459	0.0343	34.8996	41.6536
43.0	63.59%	4.84%	66.95%	1.89%	1.6458	1.6575	4.4407	-6.0568	3.6346	-4.2513	0.0826	0.0022	29.1875	34.3383	42.4972	41.1823	35.0973	41.1823	1414.76	1472.93	0.6512	0.0352	0.6527	0.0336	34.9155	41.6956
43.5	64.26%	4.84%	67.55%	1.92%	1.6444	1.6589	4.4766	-6.1340	3.6604	-4.2888	0.0836	0.0022	29.1621	34.3383	42.5687	41.2824	35.0316	41.2824	1414.93	1471.78	0.6574	0.0354	0.6590	0.0338	34.9210	41.7220
44.0	66.33%	4.96%	69.62%	2.00%	1.6429	1.6604	4.9375	-5.8250	4.1220	-3.9733	0.0847	0.0030	29.1360	35.8271	46.0989	44.7269	36.5277	44.7269	1524.52	1585.60	0.6781	0.0364	0.6797	0.0348	36.4154	45.2209
44.5	67.63%	4.87%	70.76%	1.97%	1.6444	1.6589	5.1527	-5.8167	4.2534	-3.9262	0.0820	0.0032	29.1621	36.2358	46.9994	45.5701	36.9290	45.5701	1552.16	1613.64	0.6904	0.0357	0.6919	0.0342	36.7764	46.1224
45.0	68.44%	5.00%	71.55%	2.03%	1.6459	1.6575	5.1472	-5.8691	4.2803	-3.9694	0.0842	0.0033	29.1883	36.2358	47.0136	45.5844	36.9072	45.5844	1555.56	1617.19	0.6984	0.0366	0.6999	0.0352	36.7977	46.1542
45.5	69.31%	5.05%	72.34%	2.07%	1.6445	1.6589	5.1941	-5.9271	4.3104	-4.0084	0.0850	0.0034	29.1633	36.2358	47.0708	45.5701	36.9655	45.5701	1557.43	1620.71	0.7067	0.0371	0.7082	0.0356	36.8391	46.1729
46.0	70.20%	5.02%	73.17%	2.07%	1.6431	1.6603	5.1803	-5.9243	4.3342	-4.0533	0.0866	0.0034	29.1385	36.3817	47.1280	45.5844	37.0239	45.5844	1561.16	1620.76	0.7152	0.0370	0.7168	0.0354	36.8558	46.2095
46.5	70.92%	5.09%	73.91%	2.07%	1.6445	1.6588	5.2493	-6.0512	4.3656	-4.0978	0.0850	0.0035	29.1644	36.4182	47.2137	45.6416	37.0385	45.6416	1567.07	1629.06	0.7227	0.0373	0.7242	0.0358	36.9176	46.2637
47.0	71.70%	5.05%	74.61%	2.07%	1.6446	1.6588	5.2631	-6.0926	4.3860	-4.1383	0.0845	0.0035	29.1649	36.3817	47.2852	45.5701	37.0750	45.5701	1571.03	1631.56	0.7301	0.0371	0.7315	0.0356	36.9461	46.3243
47.5	72.47%	5.06%	75.37%	2.06%	1.6460	1.6573	5.3017	-6.1230	4.4146	-4.1796	0.0835	0.0035	29.1904	36.4985	47.3567	45.6987	37.0823	45.6987	1576.00	1635.44	0.7378	0.0370	0.7392	0.0356	36.9735	46.3785
48.0	73.33%	4.98%	76.13%	2.05%	1.6446	1.6587	5.3321	-6.2030	4.4542	-4.2298	0.0836	0.0034	29.1658	36.5277	47.4281	45.7130	37.0750	45.7130	1579.59	1638.98	0.7458	0.0366	0.7473	0.0351	37.0191	46.4269
48.5	74.12%	4.99%	76.88%	2.06%	1.6432	1.6601	5.3900	-6.2886	4.4152	-4.3055	0.0845	0.0034	29.1413	36.5569	47.5282	45.8702	37.1115	45.8702	1578.58	1637.20	0.7535	0.0367	0.7550	0.0352	37.0322	46.5333
49.0	74.86%	5.04%	77.59%	2.09%	1.6447	1.6587	5.3873	-6.3686	4.5050	-4.3295	0.0860	0.0035	29.1667	36.6736	47.5710	45.8560	37.1480	45.8560	1588.49	1646.71	0.7607	0.0372	0.7623	0.0357	37.1000	46.5674
49.5	75.72%	5.00%	78.36%	2.05%	1.6461	1.6573	5.4342	-6.4431	4.5434	-4.3794	0.0848	0.0034	29.1919	36.7320	47.7569	45.9274	37.2283	45.9274	1593.29	1652.53	0.7689	0.0368	0.7704	0.0353	37.1461	46.6470
50.0	76.44%	5.10%	79.12%	2.08%	1.6447	1.6586	5.4977	-6.4514	4.5792	-4.4304	0.0853	0.0035	29.1675	36.7466	47.8569	46.0703	37.2939	46.0703	1600.84	1656.04	0.7764	0.0373	0.7778	0.0359	37.1988	46.7453
50.5	77.17%	5.05%	79.80%	2.06%	1.6433	1.6600	5.5446	-6.5093	4.6173	-4.4865	0.0846	0.0035	29.1431	36.9655	47.8712	45.9846	37.2575	45.9846	1607.18	1662.10	0.7834	0.0371	0.7849	0.0356	37.2661	46.8110
51.0	77.72%	5.12%	80.37%	2.10%	1.6447	1.6586	5.5667	-6.6170	4.6509	-4.5441	0.0849	0.0035	29.1681	36.9290	47.9284	46.1418	37.3304	46.1418	1613.51	1669.76	0.7891	0.0376	0.7905	0.0361	37.3190	46.8440
51.5	78.45%	5.00%	81.01%	2.05%	1.6461	1.6572	5.6439	-6.7301	4.6901	-4.5998	0.0839	0.0034	29.1928	37.0239	48.0999	46.0418	37.4326	46.0418	1621.31	1676.14	0.7959	0.0367	0.7973	0.0352	37.3622	46.8788
52.0	79.12%	4.99%	81.65%	2.04%	1.6448	1.6586	5.6908	-6.7825	4.7306	-4.6689	0.0835	0.0033	29.1685	37.0750	48.2142	46.1418	37.4399	46.1418	1626.01	1680.50	0.8024	0.0366	0.8038	0.0351	37.4225	46.9869
52.5	79.75%	4.91%	82.17%	2.03%	1.6448	1.6586	5.7460	-6.7963	4.7707	-4.7061	0.0838	0.0034	29.1688	37.1480	48.2142	46.2133	37.5129	46.2133	1630.77	1684.82	0.8081	0.0363	0.8096	0.0347	37.4598	47.0164
53.0	80.24%	5.00%	82.70%	2.05%	1.6434	1.6599	5.7874	-6.9729	4.8059	-4.7709	0.0837	0.0033	29.1446	37.1991	48.1570	46.1561	37.4618	46.1561	1636.08	1688.83	0.8133	0.0367	0.8147	0.0353	37.5021	47.0236
53.5	80.84%	5.02%	83.26%	2.06%	1.6448	1.6585	5.8426	-6.9895	4.8528	-4.8310	0.0848	0.0033	29.1693	37.2939	48.4286	46.3562	37.5494	46.3562	1642.62	1696.16	0.8191	0.0369	0.8205	0.0354	37.5597	47.1081
54.0	81.33%	5.06%	83.74%	2.07%	1.6462	1.6572	5.9199	-7.1275	4.9011	-4.8922	0.0849	0.0033	29.1937	37.3742	48.3857	46.3276	37.6369	46.3276	1652.96	1705.37	0.8240	0.0372	0.8254	0.0357	37.6287	47.1739
54.5	81.87%	5.00%	84.29%	2.02%	1.6448	1.6585	5.9944	-7.2241	4.9469	-4.9648	0.0833	0.0034	29.1695	37.5129	48.5001	46.3562	37.6223	46.3562	1659.27	1709.82	0.8295	0.0365	0.8308	0.0351	37.6847	47.2518
55.0	82.32%	4.98%	84.66%	2.05%	1.6435	1.6599	6.0744	-7.3041	4.9984	-5.0295	0.0846	0.0032	29.1454	37.5494	48.6144	46.5563	37.6953	46.5563	1664.94	1716.34	0.8335	0.0367	0.8349	0.0352	37.7620	47.3684
55.5	82.67%	5.01%	85.00%	2.08%	1.6448	1.6585	6.1324	-7.4034	5.0596	-5.0987	0.0860	0.0032	29.1696	37.6223	48.7859	46.5706	37.7683	46.5706	1676.85	1726.25	0.8368	0.0371	0.8384	0.0355	37.8417	47.4747
56.0	82.99%	5.02%	85.36%	2.02%	1.6462	1.6571	6.1848	-7.4586	5.1130	-5.1752	0.0831	0.0032	29.1939	37.8121	48.9002	46.6135	37.8121	46.6135	1686.34	1735.59	0.8405	0.0366	0.8418	0.0352	37.9178	47.5884
56.5	83.34%	4.98%	85.68%	2.00%	1.6448	1.6585	6.2704	-7.6380	5.1748	-5.2523	0.0826	0.0032	29.1696	37.8778	49.0718	46.5706	37.8413	46.5706	1693.97	1742.18	0.8438	0.0363	0.8451	0.0349	37.9893	47.6650
57.0	83.67%	4.94%	85.94%	2.01%	1.6435	1.6599	6.3614	-7.7015	5.2321	-5.3306	0.0828	0.0031	29.1453	37.9289	49.0146	46.8421	37.9289	46.8421	1703.23	1748.77	0.8467	0.0362	0.8480	0.0347	38.0685	47.7954
57.5	83.98%	4.88%	86.20%	1.99%	1.6448	1.6585	6.4497	-7.8174	5.2933	-5.4164	0.0820	0.0030	29.1695	38.0237	49.2147	46.9279	37.9872	46.9279	1713.24	1757.60	0.8495	0.0358	0.8509	0.0343	38.1420	47.9213
58.0	84.11%	4.92%	86.37%	1.98%	1.6462	1.6572	6.5491	-7.9554	5.3596	-5.5090	0.0824	0.0030	29.1937	38.1624	49.4148	47.0708	38.0748	47.0708	1725.47	1769.23	0.8511	0.0359	0.8524	0.0345	38.2383	48.0638
58.5	84.35%	4.88%	86.56%	1.95%	1.6448	1.6585	6.6291	-8.0795	5.4201	-5.5958	0.0802	0.0028	29.1693	38.2792	49.5005	47.0708	38.1697	47.0708	1736.37	1778.58	0.8533	0.0355	0.8545	0.0341	38.3339	48.1707
59.0	84.43%	4.93%	86.65%	1.98%	1.6448	1.6585	6.6981	-8.1761	5.4836	-5.6614	0.0826	0.0028	29.1692	38.3156	49.7149	47.0708	38.1697	47.0708	1745.76	1788.91	0.8541	0.0360	0.8554	0.0345	38.4140	48.1971
59.5	84.56%	4.94%	86.80%	1.95%	1.6434	1.6599	6.8140	-8.3196	5.5563	-5.7785	0.0805	0.0028	29.1446	38.4835	49.7006	47.1852	38.3375	47.1852	1759.10	1798.28	0.8557	0.0357	0.8568	0.0344	38.5092	48.3018
60.0	84.75%	4.86%	86.89%	1.95%	1.6448	1.6586	6.9327	-8.4659	5.6373	-5.8860	0.0815	0.0027	29.1687	38.6440	49.8578	47.3567	38.4251	47.3567	1772.88	1811.40	0.8569	0.0355	0.8582	0.0341	38.6072	48.3897
60.5	84.80%	4.91%	86.96%	1.97%	1.6462	1.6572	7.0348	-8.6177	5.7161	-5.9936	0.0832	0.0026	29.1930	38.8338	50.1008	47.4138	38.4835	47.4138	1788.78	1823.47	0.8574	0.0359	0.8588	0.0344	38.7110	48.5771
61.0	84.92%	4.87%	87.02%	1.96%	1.6448	1.6586	7.1120	-8.7005	5.7820	-6.0376	0.0832	0.0026	29.1683	39.0089	50.7154	47.7140	38.6440	47.7140	1802.69	1838.35	0.8583	0.0357	0.8597	0.0342	38.8892	48.9886
61.5	84.98%	4.89%	87.05%	1.99%	1.6434	1.6600	7.2666	-8.8605	5.8651	-6.1400	0.0828	0.0026	29.1434	39.1257	50.8440	47.8712	38.7170	47.8712	1814.31	1847.64	0.8588	0.0359	0.8602	0.0344	38.9944	49.1761
62.0	84.98%	4.92%	87.03%	2.00%	1.6447	1.6586	7.3880	-9.0178	5.9469	-6.2548	0.0814	0.0026	29.1677	39.3373	51.0012	47.9284	38.7900	47.9284	1831.64	1864.97	0.8588	0.0360	0.8600	0.0346	39.1173	49.2411
62.5	85.01%	4.90%	87.06%	1.97%	1.6461	1.6572	7.5094	-9.2358	6.0550	-6.4244	0.0823	0.0025	29.1921	39.5052	51.1299	48.0999	38.8922	48.0999	1850.86	1881.82	0.8591	0.0358	0.8604	0.0343	39.2489	49.3986
63.0	85.10%	4.89%	87.07%	2.00%	1.6447	1.6587	7.6639	-9.4317	6.1587	-6.5322	0.0824	0.0025	29.1671	39.6292	51.2871	48.2142	38.9360	48.2142	1862.98	1894.87	0.8595	0.0358	0.8608	0.0344	39.3731	49.5386
63.5	85.14%	4.86%	87.07%	1.97%	1.6433	1.6601	7.8406	-9.6222	6.2692	-6.7241	0.0814	0.0024	29.1419	39.8263	51.5872	48.2142	39.0673	48.2142	1881.52	1908.43	0.8598	0.0356	0.8611	0.0342	39.5002	49.6751
64.0	85.12%	4.87%	87.03%	1.97%	1.6447	1.6587	8.0365	-9.8733	6.3933	-6.8898	0.0814	0.0024	29.1664	39.9577	51.5729	48.5001	39.1184	48.5001	1897.22	1923.76	0.8595	0.0356	0.8607	0.0342	39.6118	49.7801
			87.07%	4.50%		max	8.0365	-3.7056																		
			32.87%	0.69%		min	2.3793	-9.9312																		
			59.30%	1.93%		avg																				

SR100 Serial No. 51823

Effects of long-term heat exposure on self-conatined self-rescuers

August 31, 2006

Time sec	Exp O2 percent	Exp CO2 percent	Ins O2 percent	Ins CO2 percent	Exp Vol liters	Ins Vol liters	Exp Pk Prs cm H2O	Ins Pk Prs cm H2O	Exp Av Prs cm H2O	Ins Av Prs cm H2O	xp CO2 Pk liters	ns CO2Min liters	VE Stpd liers/min	sWB EndT C	hsDB EndT C	kpDB EndT C	pWB EndT C	kpDB EndT C	ExpH2OVapr	InsH2OVapr	uthO2TAv	th CO2TAv	puthO2VAv	th CO2VAv	sWBAvgTp C	sDBAvgTp C
0.0	0.00%	0.00%	0.00%	0.00%	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.00	0.00	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.5	23.71%	1.42%	25.72%	2.02%	1.9737	1.6600	0.7318	-1.1447	0.0818	-0.2800	0.0250	0.0061	25.7449	23.0628	26.4514	33.5788	29.6969	33.5788	921.82	895.80	0.2195	0.0129	0.2472	0.0172	23.8717	27.3358
1.0	21.76%	0.28%	31.39%	0.30%	1.6491	1.6543	0.7318	-1.1226	0.1529	-0.3112	0.0050	0.0019	29.2449	27.3032	32.7212	33.2929	28.0330	33.2929	940.13	912.69	0.2673	0.0030	0.2658	0.0029	27.5497	32.8623
1.5	73.46%	0.80%	79.97%	0.24%	1.6420	1.6614	2.0344	-2.9467	1.1784	-2.0018	0.0153	-0.0001	29.1187	25.1795	31.7779	33.6359	27.6243	33.6359	783.91	879.85	0.7642	0.0056	0.7672	0.0052	26.7795	32.6176
2.0	68.01%	1.82%	72.06%	0.58%	1.6450	1.6584	2.7381	-3.5400	2.0464	-2.4728	0.0337	-0.0001	29.1723	28.7190	33.4215	35.9227	31.9665	35.9227	1068.04	1174.28	0.7008	0.0128	0.7003	0.0120	30.8810	34.5750
2.5	66.59%	3.09%	69.66%	0.97%	1.6462	1.6571	2.6084	-3.5290	1.9713	-2.5104	0.0545	-0.0001	29.1942	29.3466	33.8074	35.9227	32.4409	35.9227	1129.75	1220.50	0.6811	0.0215	0.6812	0.0203	31.3865	34.8296
3.0	64.71%	3.96%	67.56%	1.22%	1.6448	1.6586	2.5449	-3.6366	1.8531	-2.6265	0.0673	-0.0002	29.1682	29.5947	33.9932	36.2086	32.8787	36.2086	1159.61	1239.40	0.6609	0.0272	0.6614	0.0259	31.6298	35.0675
3.5	63.08%	4.39%	65.89%	1.37%	1.6432	1.6601	2.4097	-3.6614	1.7857	-2.7072	0.0747	-0.0001	29.1411	29.5801	34.3791	36.4944	33.1999	36.4944	1180.32	1247.43	0.6441	0.0303	0.6448	0.0288	31.7705	35.3342
4.0	61.16%	4.70%	64.07%	1.50%	1.6445	1.6588	2.3241	-3.7056	1.7266	-2.7877	0.0798	-0.0001	29.1639	29.6312	34.6364	36.5659	33.4991	36.5659	1199.92	1260.06	0.6253	0.0325	0.6261	0.0310	31.9328	35.5949
4.5	58.88%	4.80%	61.97%	1.52%	1.6458	1.6575	2.3103	-3.7939	1.6806	-2.8667	0.0820	-0.0001	29.1875	29.8720	35.0080	36.6088	33.7253	36.6088	1222.34	1277.69	0.6034	0.0332	0.6043	0.0316	32.1347	35.8208
5.0	56.50%	4.84%	59.75%	1.53%	1.6442	1.6591	2.2965	-3.8850	1.6445	-2.9170	0.0810	-0.0001	29.1590	30.1785	35.3510	36.7803	33.7545	36.7803	1232.62	1288.88	0.5806	0.0334	0.5813	0.0319	32.2918	36.0268
5.5	55.09%	4.57%	58.25%	1.42%	1.6426	1.6607	2.2551	-4.0147	1.5843	-3.0356	0.0768	-0.0001	29.1302	30.5726	35.6369	37.0089	33.1415	37.0089	1203.03	1280.96	0.5660	0.0314	0.5667	0.0300	32.2645	36.2222
6.0	54.23%	4.61%	57.35%	1.43%	1.6441	1.6593	2.2186	-4.0643	1.5219	-3.1753	0.0763	-0.0001	29.1559	30.7259	35.9942	37.2090	33.0612	37.2090	1202.06	1284.40	0.5572	0.0315	0.5579	0.0302	32.3231	36.4198
6.5	53.62%	4.70%	56.78%	1.48%	1.6455	1.6578	2.1668	-4.1361	1.4322	-3.2998	0.0795	-0.0001	29.1821	30.9229	36.2086	37.4091	33.1999	37.4091	1213.95	1296.60	0.5511	0.0325	0.5520	0.0309	32.4641	36.6187
7.0	42.73%	8.66%	48.10%	3.34%	1.6394	1.6639	2.4621	-3.5124	1.7462	-2.4552	0.1109	0.0035	29.0737	32.2219	36.2800	37.3520	33.8640	37.3520	1332.70	1379.32	0.4560	0.0593	0.4541	0.0600	33.2956	36.7818
7.5	39.83%	3.55%	44.25%	1.12%	1.6426	1.6607	2.5863	-3.6642	1.9994	-2.5944	0.0615	-0.0001	29.1301	31.4922	36.5659	37.5663	33.5720	37.5663	1259.70	1328.48	0.4199	0.0246	0.4204	0.0233	32.8395	36.9286
8.0	41.36%	4.08%	44.84%	1.27%	1.6446	1.6587	2.5201	-3.7497	1.9654	-2.6443	0.0701	-0.0001	29.1655	31.4192	36.8374	37.8093	33.4626	37.8093	1242.40	1321.14	0.4302	0.0282	0.4310	0.0268	32.8036	37.1848
8.5	41.10%	4.62%	44.63%	1.45%	1.6428	1.6605	2.4897	-3.7884	1.9278	-2.6929	0.0773	-0.0001	29.1340	31.5651	37.0661	37.9237	33.4991	37.9237	1251.51	1328.52	0.4279	0.0318	0.4287	0.0303	32.9165	37.3582
9.0	41.01%	4.71%	44.54%	1.50%	1.6410	1.6623	2.4318	-3.8380	1.8931	-2.7424	0.0794	-0.0001	29.1018	31.7987	37.2948	37.9808	33.6377	37.9808	1259.53	1335.95	0.4269	0.0325	0.4277	0.0311	33.0273	37.5179
9.5	40.70%	4.92%	44.34%	1.53%	1.6427	1.6606	2.4759	-3.9126	1.8866	-2.7847	0.0799	-0.0001	29.1326	31.8935	37.4234	38.0666	33.7180	38.0666	1269.85	1346.20	0.4246	0.0336	0.4252	0.0323	33.1378	37.6828
10.0	40.80%	4.83%	44.35%	1.54%	1.6445	1.6588	2.6525	-3.9043	1.9881	-2.7992	0.0804	-0.0001	29.1642	32.0906	37.6378	38.1523	33.7545	38.1523	1281.64	1356.33	0.4250	0.0333	0.4257	0.0319	33.2396	37.8105
10.5	40.82%	4.84%	44.37%	1.56%	1.6427	1.6606	2.6415	-3.9401	1.9645	-2.8471	0.0822	-0.0001	29.1323	32.1490	37.8522	38.3524	33.7910	38.3524	1291.62	1364.11	0.4251	0.0336	0.4260	0.0320	33.3496	37.9570
11.0	40.80%	4.85%	44.35%	1.56%	1.6409	1.6624	2.5973	-4.0257	1.9534	-2.8998	0.0808	-0.0001	29.1004	32.3533	38.0380	38.4382	33.9588	38.4382	1301.06	1372.14	0.4250	0.0335	0.4258	0.0320	33.4629	38.1119
11.5	40.82%	4.84%	44.33%	1.57%	1.6427	1.6606	2.6001	-4.0505	1.9573	-2.9518	0.0829	-0.0001	29.1318	32.4774	38.2810	38.4954	34.0464	38.4954	1313.07	1384.11	0.4248	0.0336	0.4258	0.0320	33.5812	38.2475
12.0	40.55%	5.04%	44.15%	1.63%	1.6445	1.6589	2.6084	-4.0257	1.9570	-2.9686	0.0835	-0.0001	29.1632	32.6744	38.2667	38.6669	34.1632	38.6669	1325.86	1396.72	0.4227	0.0348	0.4235	0.0333	33.7047	38.3866
12.5	40.62%	4.88%	44.12%	1.59%	1.6426	1.6607	2.6139	-4.0781	1.9367	-3.0256	0.0827	-0.0001	29.1308	32.8423	38.5668	38.7812	34.1924	38.7812	1334.98	1402.98	0.4229	0.0338	0.4237	0.0323	33.7958	38.5109
13.0	40.47%	4.96%	43.99%	1.61%	1.6426	1.6607	2.6553	-4.1333	1.9119	-3.0724	0.0831	-0.0001	29.1306	32.9517	38.5668	38.8527	34.3748	38.8527	1347.75	1414.78	0.4215	0.0343	0.4223	0.0328	33.9148	38.5948
13.5	40.36%	4.93%	43.82%	1.62%	1.6408	1.6626	2.6415	-4.1692	1.8900	-3.1323	0.0826	-0.0001	29.0975	33.1707	38.7240	38.8955	34.3967	38.8955	1361.45	1426.62	0.4201	0.0342	0.4209	0.0327	34.0601	38.7495
14.0	40.13%	5.02%	43.61%	1.64%	1.6426	1.6608	2.6001	-4.2161	1.8685	-3.1844	0.0827	-0.0001	29.1292	33.3166	38.9956	38.9956	34.5573	38.9956	1375.94	1439.87	0.4179	0.0347	0.4187	0.0333	34.1857	38.8845
14.5	40.00%	5.00%	43.41%	1.66%	1.6443	1.6590	2.6194	-4.3127	1.8391	-3.2523	0.0834	-0.0001	29.1609	33.4626	39.0671	39.1242	34.5718	39.1242	1390.41	1451.77	0.4162	0.0348	0.4170	0.0333	34.2974	39.0130
15.0	39.88%	4.98%	43.24%	1.66%	1.6425	1.6609	2.5863	-4.3679	1.8045	-3.3045	0.0857	-0.0001	29.1281	33.5720	39.3529	39.0671	34.6667	39.0671	1402.43	1460.61	0.4146	0.0348	0.4156	0.0332	34.4038	39.1066
15.5	39.64%	5.04%	43.00%	1.69%	1.6406	1.6628	2.5201	-4.4120	1.7790	-3.3521	0.0844	0.0000	29.0941	33.8421	39.4672	39.2957	34.7762	39.2957	1416.52	1474.13	0.4123	0.0352	0.4132	0.0337	34.5522	39.2062
16.0	39.26%	5.18%	42.68%	1.72%	1.6424	1.6610	2.4759	-4.4645	1.7457	-3.4241	0.0841	0.0000	29.1260	34.0464	39.5673	39.2814	34.9586	39.2814	1436.18	1490.22	0.4090	0.0358	0.4097	0.0345	34.6929	39.3047
16.5	39.06%	5.10%	42.40%	1.73%	1.6442	1.6592	2.4538	-4.5114	1.6911	-3.5191	0.0854	0.0001	29.1581	34.1924	39.6959	39.4101	35.0097	39.4101	1455.32	1505.57	0.4064	0.0356	0.4073	0.0342	34.8279	39.4156
17.0	38.81%	5.07%	42.13%	1.72%	1.6423	1.6611	2.4897	-4.6025	1.6603	-3.6154	0.0851	0.0001	29.1239	34.3383	39.7102	39.5673	35.2141	39.5673	1471.04	1516.70	0.4038	0.0354	0.4047	0.0339	34.9472	39.4756
17.5	38.60%	5.06%	41.93%	1.72%	1.6403	1.6630	2.4318	-4.6659	1.5618	-3.7809	0.0833	0.0002	29.0898	34.5135	39.8674	39.5816	35.3016	39.5816	1481.23	1524.04	0.4019	0.0353	0.4027	0.0339	35.0418	39.5822
18.0	38.39%	5.16%	41.74%	1.79%	1.6422	1.6612	2.4069	-4.9060	1.4203	-4.0181	0.0863	0.0002	29.1224	34.6667	39.9246	39.6387	35.2870	39.6387	1494.87	1535.31	0.3998	0.0362	0.4006	0.0347	35.1336	39.6512
18.5	38.19%	5.19%	41.56%	1.80%	1.6421	1.6612	2.4069	-6.3548	1.2108	-4.3710	0.0858	0.0003	29.1218	34.8127	39.9246	39.7102	35.5060	39.7102	1509.85	1547.79	0.3979	0.0364	0.3987	0.0350	35.2530	39.7397
19.0	30.20%	7.86%	34.75%	3.54%	1.6381	1.6652	2.7298	-5.6925	1.7348	-3.2354	0.1040	0.0040	29.0508	35.2724	39.6387	39.4672	35.5644	39.4672	1563.38	1580.05	0.3260	0.0566	0.3247	0.0570	35.5009	39.4163
19.5	30.87%	4.01%	34.42%	1.40%	1.6407	1.6626	3.0140	-4.2437	2.2805	-3.0049	0.0667	0.0004	29.0967	34.5937	39.9246	39.4958	35.3600	39.4958	1494.16	1527.71	0.3257	0.0282	0.3265	0.0271	35.0800	39.6442
20.0	30.16%	4.88%	33.82%	1.73%	1.6387	1.6647	2.9726	-4.2465	2.2528	-3.0080	0.0807	0.0006	29.0599	34.6594	40.0961	39.6959	35.3308	39.6959	1491.99	1532.46	0.3191	0.0344	0.3199	0.0331	35.1586	39.7817
20.5	29.20%	5.25%	33.10%	1.87%	1.6406	1.6627	3.0002	-4.2851	2.2590	-3.0040	0.0848	0.0009	29.0947	34.8127	40.2819	39.8531	35.5060	39.8531	1508.52	1546.58	0.3108	0.0369	0.3115	0.0356	35.2807	39.8997
21.0	28.64%	5.27%	32.54%	1.91%	1.6427	1.6606	2.9837	-4.2575	2.2807	-3.0037	0.0857	0.0011	29.1320	34.9513	40.3820	39.9246	35.5060	39.9246	1516.73	1553.09	0.3051	0.0372	0.3059	0.0359	35.3337	39.9948
21.5	28.26%	5.27%	32.18%	1.91%	1.6404	1.6630	3.0140	-4.2299	2.2815	-3.0101	0.0844	0.0014	29.0908	34.9951	40.4963	39.9246	35.5789	39.9246	1518.18	1553.64	0.3014	0.0372	0.3022	0.0359	35.3708	40.0823
22.0	28.21%	5.27%	32.09%	1.94%	1.6381	1.6653	2.9726	-4.2575	2.2654	-3.0336	0.0852	0.0015	29.0494	34.9805	40.4391	39.9246	35.5060	39.9246	1515.83	1551.63	0.3007	0.0373	0.3015	0.0360	35.3781	40.1172
22.5	28.16%	5.45%	32.10%	2.04%	1.6403	1.6630	2.9726	-4.3127	2.2581	-3.0619	0.0891	0.0017	29.0900	34.9951	40.6392	40.0675	35.5425	40.0675	1521.73	1557.33	0.3003	0.0389	0.3013	0.0375	35.4291	40.2508
23.0	28.31%	5.47%	32.30%	2.05%	1.6426	1.6607	2.9726	-4.3458	2.2575	-3.0849	0.0869	0.0020	29.1304	35.1265	40.8393	40.1533	35.6227	40.1533	1529.34	1563.50	0.3022	0.0389	0.3030	0.0376	35.4816	40.3707
23.5	28.65%	5.45%	32.65%	2.06%	1.6404	1.6629	3.0002	-4.3541	2.2640	-3.0926	0.0872	0.0022	29.0915	35.0681	40.8536	40.2104	35.6519	40.2104	1525.07	1560.71	0.3057	0.0388	0.3065	0.0375	35.4905	40.4629
24.0	28.87%	5.48%	32.93%	2.10%	1.6383	1.6651	3.0278	-4.3679	2.2888	-3.0760	0.0891	0.0024	29.0532	35.1557	40.9537	40.2676	35.5935	40.2676	1525.61	1560.96	0.3080	0.0393	0.3090	0.0379	35.5101	40.4658
24.5	29.02%	5.58%	33.24%	2.14%	1.6406	1.6628	2.9864	-4.3403	2.3142	-3.0749	0.0885	0.0027	29.0941	35.1776	40.9251	40.1390	35.6884	40.1390	1525.15	1562.08	0.3104	0.0398	0.3113	0.0386	35.5104	40.5227
25.0	29.39%	5.49%	33.58%	2.14%	1.6407	1.6627	2.9726	-4.2989	2.3249	-3.0826	0.0878	0.0028	29.0955	35.0681	41.0680	40.2819	35.6154	40.2819	1523.38	1560.10	0.3139	0.0394	0.3148	0.0381	35.4977	40.5499
25.5	29.88%	5.45%	34.10%	2.13%	1.6429	1.6604	3.0941	-4.2796	2.3435	-3.0982	0.0863	0.0029	29.1359	35.0681	41.0680	40.4963	35.5935	40.4963	1520.46	1558.15	0.3190	0.0391	0.3199	0.0379	35.4727	40.6056
26.0	30.42%	5.44%	34.67%	2.14%	1.6409	1.6625	3.1934	-4.3403	2.3842	-3.0976	0.0875	0.0030	29.0990	35.0316	41.1395	40.3534	35.6154	40.3534	1515.32	1554.23	0.3244	0.0392	0.3255	0.0379	35.4648	40.6571
26.5	31.22%	5.38%	35.46%	2.11%	1.6389	1.6645	3.2596	-4.4231	2.4111	-3.0847	0.0858	0.0031	29.0643	35.0681	41.0680	40.4963	35.5352	40.4963	1508.15	1547.75	0.3324	0.0387	0.3334	0.0374	35.4327	40.6964
27.0	32.44%	5.34%	36.60%	2.10%	1.6412	1.6621	3.2348	-4.4093	2.4346	-3.0983	0.0856	0.0031	29.1059	34.9951	41.2824	40.2104	35.5425	40.2104	1505.27	1547.12	0.3441	0.0385	0.3452	0.0372	35.4112	40.7099
27.5	33.80%	5.40%	37.91%	2.13%	1.6435	1.6598	3.2376	-4.4231	2.4619	-3.1209	0.0859	0.0033	29.1461	35.0097	41.2967	40.3820	35.5644	40.3820	1505.91	1548.80	0.3575	0.0389	0.3586	0.0377	35.4153	40.7579
28.0	35.24%	5.45%	39.34%	2.17%	1.6417	1.6617	3.3176	-4.4369	2.5071	-3.1285	0.0882	0.0034	29.1138	34.9586	41.2824	40.5678	35.5789	40.5678	1506.69	1549.66	0.3717	0.0394	0.3729	0.0381	35.4473	40.8241
28.5	36.71%	5.46%	40.76%	2.20%	1.6400	1.6633	3.3259	-4.5003	2.5794	-3.1048	0.0884	0.0036	29.0840	35.0389	41.4110	40.4963	35.6227	40.4963	1505.69	1548.22	0.3860	0.0397	0.3873	0.0383	35.4552	40.8660
29.0	38.13%	5.49%	42.19%	2.21%	1.6422	1.6612	3.3452	-4.4369	2.6650	-3.0788	0.0901	0.0038	29.1222	35.1046	41.6397	40.5678	35.5789	40.5678	1512.14	1554.84	0.4002	0.0399	0.4016	0.0385	35.4969	40.8885
29.5	39.46%	5.54%	43.56%	2.24%	1.6442	1.6592	3.3700	-4.4341	2.7448	-3.0609	0.0882	0.0038	29.1582	35.0681	41.3538	40.6106	35.6227	40.6106	1515.31	1557.44	0.4139	0.0401	0.4151	0.0389	35.5009	40.8791
30.0	40.18%	5.69%	44.47%	2.30%	1.6424	1.6609	3.5522	-4.4783	2.8850	-3.0073	0.0892	0.0040	29.1272	35.1776	41.4253	40.6392	35.6884	40.6392	1516.80	1560.09	0.4222	0.0411	0.4233	0.0399	35.5445	40.9289
30.5	40.77%	5.64%	45.11%	2.32%	1.6425	1.6608	4.3110	-4.4369	3.1265	-2.8779	0.0909	0.0039	29.1284	35.0681	41.5682	40.6392	35.6884	40.6392	1517.42	1559.56	0.4281	0.0411	0.4294	0.0398	35.5437	40.9546
31.0	41.83%	5.38%	46.36%	2.05%	1.6408	1.6625	4.2200	-4.4672	3.0867	-2.9745	0.0882	0.0037	29.0983	35.0973	41.5825	40.6106	35.6811	40.6106	1508.15	1550.09	0.4393	0.0387	0.4410	0.0372	35.4794	40.9586
31.5	42.88%	5.26%	47.25%	2.04%	1.6428	1.6606	3.8557	-4.5197	3.0206	-3.0622	0.0873	0.0036	29.1331	34.9221	41.6397	40.5678	35.5789	40.5678	1498.28	1543.04	0.4489	0.0380	0.4506	0.0365	35.4180	41.0353
32.0	44.20%	5.09%	48.40%	1.97%	1.6446	1.6587	3.8226	-4.5666	3.0247	-3.0975	0.0825	0.0036	29.1662	34.9221	41.6397	40.6678	35.5644	40.6678	1496.55	1543.62	0.4614	0.0367	0.4630	0.0353	35.4083	41.0350
32.5	45.62%	5.02%	49.66%	1.94%	1.6430	1.6603	3.8005	-4.6576	3.0267	-3.1372	0.0814	0.0035	29.1372	34.8492	41.6397	40.7821	35.4695	40.7821	1489.18	1537.74	0.4750	0.0361	0.4764	0.0348	35.3759	41.0579
33.0	47.16%	5.06%	51.07%	1.96%	1.6415	1.6619	3.8116	-4.7432	3.0390	-3.1913	0.0817	0.0035	29.1099	34.8346	41.6969	40.7821	35.5352	40.7821	1484.68	1533.96	0.4897	0.0364	0.4911	0.0351	35.3693	41.1376
33.5	48.55%	5.21%	52.41%	2.03%	1.6433	1.6600	3.7453	-4.7818	3.0526	-3.2059	0.0838	0.0038	29.1425	34.9221	41.7826	40.7107	35.5425	40.7107	1489.85	1539.26	0.5034	0.0375	0.5048	0.0362	35.3958	41.1169
34.0	50.01%	5.27%	53.85%	2.06%	1.6451	1.6583	3.7343	-4.7763	3.0872	-3.2432	0.0846	0.0040	29.1736	34.9513	41.7540	40.7821	35.5935	40.7821	1493.56	1543.00	0.5178	0.0380	0.5193	0.0366	35.4197	41.1581
34.5	51.48%	5.26%	55.24%	2.07%	1.6435	1.6598	3.8557	-4.8370	3.1147	-3.2847	0.0852	0.0041	29.1463	34.9221	41.8541	40.8536	35.5425	40.8536	1489.70	1539.86	0.5320	0.0380	0.5336	0.0367	35.4180	41.2342
35.0	52.97%	5.22%	56.67%	2.07%	1.6420	1.6613	4.1317	-4.8536	3.1409	-3.3183	0.0857	0.0041	29.1200	34.8930	41.8684	41.0108	35.6227	41.0108	1487.98	1537.00	0.5466	0.0379	0.5482	0.0365	35.4118	41.2712
35.5	54.16%	5.37%	57.95%	2.13%	1.6437	1.6596	4.2558	-4.9336	3.1715	-3.3560	0.0874	0.0042	29.1503	34.9586	42.0685	40.8536	35.5789	40.8536	1490.00	1539.04	0.5589	0.0390	0.5605	0.0375	35.4227	41.3165
36.0	55.41%	5.31%	59.12%	2.09%	1.6438	1.6595	3.9385	-4.9888	3.2032	-3.3860	0.0846	0.0043	29.1517	34.9951	41.9255	40.9965	35.6519	40.9965	1493.44	1543.33	0.5712	0.0383	0.5727	0.0370	35.4537	41.2917
36.5	56.68%	5.30%	60.38%	2.08%	1.6455	1.6579	3.9771	-5.0633	3.2359	-3.4237	0.0855	0.0043	29.1807	34.9513	41.9255	41.0108	35.5935	41.0108	1492.27	1540.97	0.5837	0.0383	0.5853	0.0369	35.4305	41.3482
37.0	57.70%	5.35%	61.46%	2.10%	1.6440	1.6594	4.0765	-5.0164	3.2706	-3.4613	0.0867	0.0044	29.1542	34.8857	42.0685	40.9965	35.6154	40.9965	1491.27	1538.91	0.5942	0.0387	0.5958	0.0372	35.4291	41.3732
37.5	58.60%	5.30%	62.39%	2.06%	1.6425	1.6608	4.0434	-5.1185	3.3008	-3.5076	0.0848	0.0045	29.1283	34.9221	42.0399	41.0680	35.6227	41.0680	1488.14	1537.46	0.6035	0.0381	0.6050	0.0368	35.4330	41.4017
38.0	59.56%	5.17%	63.25%	2.03%	1.6441	1.6593	4.0903	-5.2096	3.3209	-3.5414	0.0836	0.0044	29.1563	34.9221	41.9970	40.8536	35.6519	40.8536	1492.49	1542.17	0.6125	0.0374	0.6141	0.0360	35.4556	41.3763
38.5	60.46%	5.20%	64.13%	2.04%	1.6456	1.6577	4.2862	-5.2289	3.3467	-3.5790	0.0834	0.0045	29.1840	34.9513	42.0399	41.0680	35.5935	41.0680	1491.59	1542.62	0.6214	0.0376	0.6229	0.0362	35.4499	41.3923
39.0	61.25%	5.26%	64.91%	2.06%	1.6442	1.6592	4.3800	-5.3337	3.3810	-3.6264	0.0833	0.0046	29.1579	34.9221	42.2114	41.0680	35.6154	41.0680	1491.22	1541.49	0.6293	0.0379	0.6308	0.0366	35.4660	41.4789
39.5	62.29%	5.10%	65.76%	2.03%	1.6427	1.6606	4.1758	-5.3724	3.4109	-3.6687	0.0817	0.0046	29.1325	34.9513	42.2114	41.1252	35.6811	41.1252	1489.20	1538.94	0.6388	0.0370	0.6403	0.0357	35.4632	41.5241

SR100 Serial No. 51823

Effects of long-term heat exposure on self-conatined self-rescuers

August 31, 2006

Time sec	Exp O2 percent	Exp CO2 percent	Ins O2 percent	Ins CO2 percent	Exp Vol liters	Ins Vol liters	Exp Pk Prs cm H2O	Ins Pk Prs cm H2O	Exp Av Prs cm H2O	Ins Av Prs cm H2O	xp CO2 Pk liters	ns CO2Min liters	VE Stpd liers/min	sWB EndT C	nsDB EndT C	kpDB EndT C	pWB EndT C	kpDB EndT C	ExpH2OVapr	InsH2OVapr	uthO2TAv	th CO2TAv	uthO2VAv	th CO2VAv	sWBAvgTp C	sDBAvgTp C
40.0	63.07%	5.16%	66.51%	2.06%	1.6443	1.6591	4.5594	-5.4027	3.4322	-3.7036	0.0826	0.0046	29.1597	34.9951	42.2114	41.0680	35.6154	41.0680	1495.44	1544.86	0.6464	0.0375	0.6479	0.0361	35.4981	41.5107
40.5	64.01%	5.13%	67.37%	2.05%	1.6458	1.6576	4.5622	-5.4828	3.4594	-3.7502	0.0818	0.0047	29.1865	35.0097	42.2686	41.1823	35.6519	41.1823	1497.38	1547.75	0.6555	0.0372	0.6569	0.0359	35.5165	41.5496
41.0	64.88%	5.15%	68.22%	2.04%	1.6444	1.6590	4.2558	-5.5821	3.4936	-3.8001	0.0815	0.0047	29.1611	35.0316	42.2828	41.2109	35.6519	41.2109	1499.61	1548.96	0.6642	0.0372	0.6655	0.0360	35.5461	41.6024
41.5	65.79%	5.10%	68.99%	2.06%	1.6444	1.6590	4.2696	-5.5959	3.5216	-3.8445	0.0817	0.0048	29.1618	35.1046	42.4258	41.2109	35.6884	41.2109	1501.02	1551.13	0.6725	0.0372	0.6739	0.0358	35.5699	41.6412
42.0	66.64%	5.17%	69.81%	2.09%	1.6430	1.6604	4.2972	-5.6594	3.5547	-3.8924	0.0828	0.0050	29.1368	35.0973	42.4401	41.2967	35.6811	41.2967	1503.41	1551.60	0.6808	0.0376	0.6823	0.0363	35.5958	41.7105
42.5	67.57%	5.19%	70.68%	2.10%	1.6445	1.6589	4.3248	-5.7339	3.5891	-3.9412	0.0828	0.0050	29.1633	35.1411	42.5687	41.3538	35.7614	41.3538	1506.24	1554.97	0.6898	0.0378	0.6913	0.0365	35.6218	41.7725
43.0	68.39%	5.23%	71.51%	2.10%	1.6459	1.6574	4.3524	-5.8139	3.6257	-4.0028	0.0834	0.0051	29.1893	35.1849	42.6116	41.3538	35.8271	41.3538	1510.38	1557.13	0.6982	0.0380	0.6995	0.0367	35.6374	41.8298
43.5	69.19%	5.26%	72.30%	2.10%	1.6445	1.6588	4.4076	-5.8995	3.6564	-4.0385	0.0816	0.0051	29.1643	35.3235	42.5687	41.3538	35.8344	41.3538	1514.88	1562.94	0.7062	0.0380	0.7074	0.0368	35.6960	41.8307
44.0	69.96%	5.28%	73.02%	2.13%	1.6431	1.6602	4.4407	-5.9353	3.6935	-4.0995	0.0839	0.0052	29.1397	35.3308	42.6687	41.4110	35.7687	41.4110	1518.60	1566.53	0.7136	0.0383	0.7149	0.0370	35.7411	41.8609
44.5	70.86%	5.16%	73.83%	2.08%	1.6446	1.6587	4.5042	-5.9822	3.7317	-4.1524	0.0833	0.0050	29.1655	35.3600	42.7116	41.2824	35.8344	41.2824	1523.11	1569.31	0.7221	0.0375	0.7235	0.0362	35.7610	41.9146
45.0	71.48%	5.26%	74.47%	2.12%	1.6460	1.6573	4.5180	-6.0788	3.7676	-4.2063	0.0832	0.0051	29.1909	35.4476	42.7831	41.4110	35.8855	41.4110	1527.74	1575.19	0.7284	0.0382	0.7298	0.0369	35.8074	41.9746
45.5	72.17%	5.28%	75.15%	2.11%	1.6446	1.6587	4.6008	-6.1754	3.8090	-4.2675	0.0815	0.0051	29.1663	35.4330	42.9975	41.3538	35.9438	41.3538	1529.20	1575.92	0.7354	0.0381	0.7366	0.0370	35.8344	42.0389
46.0	72.91%	5.24%	75.83%	2.11%	1.6433	1.6601	4.6394	-6.2444	3.8478	-4.3232	0.0825	0.0050	29.1419	35.4476	43.0118	41.5825	35.9146	41.5825	1530.45	1576.13	0.7425	0.0380	0.7437	0.0367	35.8617	42.1324
46.5	73.69%	5.18%	76.53%	2.06%	1.6447	1.6587	4.6698	-6.3686	3.8807	-4.3724	0.0796	0.0052	29.1671	35.6154	42.9975	41.5682	35.9803	41.5682	1539.49	1585.88	0.7500	0.0373	0.7511	0.0362	35.9264	42.1112
47.0	74.39%	5.13%	77.14%	2.06%	1.6447	1.6586	4.7250	-6.3962	3.9172	-4.4312	0.0800	0.0051	29.1675	35.6519	43.0689	41.6397	36.0168	41.6397	1541.80	1587.83	0.7564	0.0372	0.7576	0.0360	35.9498	42.1601
47.5	75.08%	5.20%	77.80%	2.09%	1.6461	1.6572	4.7829	-6.5093	3.9521	-4.4921	0.0807	0.0051	29.1925	35.6811	43.1833	41.6397	36.0022	41.6397	1547.45	1592.51	0.7632	0.0376	0.7644	0.0364	35.9899	42.2437
48.0	75.88%	5.14%	78.46%	2.11%	1.6448	1.6586	4.8906	-6.5756	4.0003	-4.5495	0.0823	0.0051	29.1682	35.7614	43.2119	41.7112	36.0898	41.7112	1550.97	1594.68	0.7704	0.0376	0.7717	0.0363	36.0264	42.2960
48.5	76.39%	5.30%	79.06%	2.15%	1.6434	1.6599	4.8823	-6.6418	4.0478	-4.6076	0.0827	0.0051	29.1442	35.7979	43.2404	41.7540	36.1190	41.7540	1553.97	1598.41	0.7760	0.0385	0.7772	0.0373	36.0718	42.3251
49.0	77.05%	5.21%	79.68%	2.09%	1.6448	1.6586	4.9595	-6.7135	4.0914	-4.6719	0.0804	0.0052	29.1689	35.8709	43.4262	41.7112	36.1263	41.7112	1561.91	1605.44	0.7825	0.0376	0.7836	0.0365	36.1291	42.3993
49.5	77.66%	5.14%	80.21%	2.08%	1.6462	1.6572	5.0258	-6.8515	4.1385	-4.7389	0.0808	0.0052	29.1935	35.8563	43.3548	41.9255	36.2358	41.9255	1567.45	1610.25	0.7881	0.0374	0.7893	0.0361	36.1730	42.5016
50.0	78.19%	5.14%	80.74%	2.06%	1.6448	1.6585	5.0975	-6.9205	4.1813	-4.8003	0.0796	0.0051	29.1693	35.9438	43.4262	41.7826	36.2358	41.7826	1572.03	1615.36	0.7935	0.0371	0.7946	0.0360	36.2243	42.4995
50.5	78.71%	5.14%	81.21%	2.08%	1.6435	1.6599	5.1582	-7.0061	4.2312	-4.8699	0.0805	0.0051	29.1453	36.0314	43.6978	41.8684	36.2358	41.8684	1575.86	1617.25	0.7985	0.0373	0.7996	0.0361	36.2666	42.6047
51.0	79.19%	5.20%	81.68%	2.09%	1.6448	1.6585	5.2631	-7.1275	4.2842	-4.9523	0.0811	0.0051	29.1698	36.0898	43.7121	42.0685	36.3087	42.0685	1581.89	1623.18	0.8032	0.0377	0.8044	0.0365	36.3234	42.7349
51.5	79.68%	5.16%	82.12%	2.09%	1.6462	1.6571	5.2907	-7.2048	4.3310	-5.0259	0.0804	0.0050	29.1941	36.1482	43.8121	42.1542	36.3233	42.1542	1589.94	1631.17	0.8079	0.0374	0.8090	0.0362	36.3840	42.7843
52.0	80.15%	5.10%	82.51%	2.09%	1.6449	1.6585	5.3873	-7.3207	4.3717	-5.0890	0.0809	0.0050	29.1699	36.2722	43.8550	42.0685	36.3817	42.0685	1600.07	1639.19	0.8121	0.0372	0.8133	0.0360	36.4583	42.7831
52.5	80.53%	5.14%	82.87%	2.10%	1.6449	1.6585	5.4287	-7.3896	4.4252	-5.1587	0.0821	0.0050	29.1700	36.4182	43.8550	42.1399	36.4182	42.1399	1606.65	1646.29	0.8157	0.0376	0.8170	0.0362	36.5253	42.8530
53.0	80.97%	5.12%	83.28%	2.09%	1.6435	1.6598	5.5004	-7.5138	4.4766	-5.2331	0.0809	0.0051	29.1459	36.5277	44.0408	42.1542	36.5569	42.1542	1615.88	1652.82	0.8200	0.0373	0.8212	0.0360	36.6042	42.9589
53.5	81.30%	5.15%	83.63%	2.07%	1.6449	1.6585	5.6080	-7.6518	4.5394	-5.3172	0.0804	0.0050	29.1701	36.5642	44.1409	42.2829	36.6006	42.2829	1626.24	1663.10	0.8235	0.0373	0.8246	0.0361	36.6919	43.0720
54.0	81.55%	5.19%	83.90%	2.07%	1.6462	1.6571	5.6660	-7.7236	4.5982	-5.4060	0.0799	0.0052	29.1942	36.7320	44.2695	42.3829	36.6444	42.3829	1638.05	1673.35	0.8262	0.0374	0.8272	0.0363	36.7771	43.1739
54.5	81.85%	5.12%	84.13%	2.06%	1.6449	1.6585	5.8012	-7.8864	4.6593	-5.4857	0.0798	0.0052	29.1700	36.7831	44.5696	42.4972	36.8196	42.4972	1647.01	1681.48	0.8288	0.0371	0.8299	0.0359	36.8744	43.3229
55.0	82.08%	5.14%	84.34%	2.09%	1.6435	1.6599	5.8647	-7.9774	4.7212	-5.5708	0.0821	0.0051	29.1457	36.8780	44.4982	42.5544	36.8196	42.5544	1658.43	1690.75	0.8309	0.0375	0.8321	0.0361	36.9688	43.3958
55.5	82.17%	5.23%	84.47%	2.10%	1.6448	1.6585	5.9392	-8.0933	4.7789	-5.6556	0.0813	0.0050	29.1696	37.1480	44.4982	42.6402	36.8196	42.6402	1674.21	1705.74	0.8321	0.0379	0.8332	0.0367	37.0778	43.4177
56.0	82.42%	5.12%	84.63%	2.07%	1.6462	1.6571	6.0303	-8.2092	4.8461	-5.7473	0.0803	0.0050	29.1938	37.2283	44.6697	42.6687	36.9947	42.6687	1687.77	1717.58	0.8341	0.0372	0.8352	0.0360	37.1756	43.5319
56.5	82.62%	5.05%	84.78%	2.04%	1.6448	1.6585	6.1738	-8.3555	4.9226	-5.8602	0.0785	0.0050	29.1694	37.3669	44.9269	42.7116	37.0750	42.7116	1698.29	1726.30	0.8359	0.0366	0.8370	0.0355	37.2726	43.6561
57.0	82.70%	5.09%	84.84%	2.08%	1.6434	1.6599	6.2510	-8.4742	4.9948	-5.9676	0.0810	0.0051	29.1449	37.4326	45.0127	42.8974	37.0823	42.8974	1707.32	1732.73	0.8365	0.0372	0.8377	0.0359	37.3562	43.8090
57.5	82.69%	5.18%	84.90%	2.07%	1.6448	1.6586	6.3669	-8.6591	5.0703	-6.0743	0.0788	0.0050	29.1690	37.6223	45.0699	42.7831	37.1845	42.7831	1722.52	1747.66	0.8370	0.0373	0.8380	0.0362	37.4550	43.7789
58.0	82.85%	5.07%	84.95%	2.04%	1.6462	1.6572	6.4828	-8.8053	5.1563	-6.1934	0.0793	0.0050	29.1932	37.7537	45.1842	43.0118	37.2866	43.0118	1737.39	1760.75	0.8379	0.0367	0.8390	0.0356	37.5615	43.8985
58.5	82.94%	5.05%	85.03%	2.02%	1.6448	1.6586	6.6153	-9.0178	5.2455	-6.3263	0.0770	0.0050	29.1685	37.8778	45.4272	43.0689	37.4034	43.0689	1748.85	1770.05	0.8389	0.0364	0.8398	0.0353	37.6636	44.0352
59.0	82.92%	5.09%	84.96%	2.07%	1.6448	1.6586	6.7395	-9.1834	5.3351	-6.4346	0.0794	0.0051	29.1683	37.9872	45.4272	43.0689	37.5129	43.0689	1759.98	1778.88	0.8384	0.0369	0.8394	0.0358	37.7493	44.1618
59.5	83.01%	5.03%	84.98%	2.05%	1.6434	1.6600	6.8913	-9.4014	5.4349	-6.5843	0.0798	0.0050	29.1435	38.1040	45.6416	43.2976	37.5202	43.2976	1769.12	1787.10	0.8388	0.0367	0.8399	0.0354	37.8394	44.2744
60.0	82.92%	5.10%	84.93%	2.05%	1.6447	1.6586	7.0706	-9.4869	5.5415	-6.7326	0.0784	0.0050	29.1677	38.2792	45.6416	43.2833	37.6588	43.2833	1786.15	1802.70	0.8383	0.0368	0.8393	0.0358	37.9464	44.2807
60.5	82.86%	5.17%	84.85%	2.09%	1.6461	1.6572	7.2445	-9.8208	5.6633	-6.9011	0.0788	0.0052	29.1922	38.3667	45.7559	43.2976	37.6661	43.2976	1800.80	1816.64	0.8377	0.0373	0.8385	0.0363	38.0549	44.3863
			85.03%	3.54%		max	7.2445	-3.5124																		
			32.09%	0.58%		min	2.1586	-9.8208																		
			58.37%	1.94%		avg																				

SR100 Serial No. 60339

Effects of long-term heat exposure on self-contained self-rescuers

August 31, 2006

Time sec	Exp O2 percent	Exp CO2 percent	Ins O2 percent	Ins CO2 percent	Exp Vol liters	Ins Vol liters	Exp Pk Prs cm H2O	Ins Pk Prs cm H2O	Exp Av Prs cm H2O	Ins Av Prs cm H2O	xp CO2 Pk liters	ns CO2Min liters	VE Stpd liers/min	sWB EndT C	sDB EndT C	kDB EndT C	pWB EndT C	pDB EndT C	ExpH2OVapr	InsH2OVapr	uthO2TAv	th CO2TAv	uthO2VAv	th CO2VAv	sWBAvgTp C	sDBAvgTp C
0.0	0.00%	0.00%	0.00%	0.00%	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.00	0.00	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.5	25.25%	2.54%	26.95%	3.42%	1.9766	1.6623	1.1071	-1.1668	0.1075	-0.2813	0.0352	0.0094	25.7826	24.5515	26.7944	33.5788	31.2148	33.5788	1080.11	1014.64	0.2286	0.0218	0.2610	0.0298	25.2442	27.5487
1.0	21.61%	0.57%	24.00%	1.06%	1.6501	1.6580	1.2948	-1.3213	0.1614	-0.3074	0.0134	0.0059	29.2622	28.9963	33.0642	33.2929	29.6093	33.2929	1082.63	1050.69	0.2302	0.0083	0.2281	0.0082	29.2245	33.0878
1.5	78.11%	1.53%	81.70%	0.65%	1.6425	1.6655	3.9661	-9.1972	2.1608	-6.6539	0.0321	-0.0002	29.1286	26.2012	32.2781	34.0647	29.0109	34.0647	899.38	977.49	0.7993	0.0118	0.7991	0.0109	28.0182	33.1939
2.0	70.13%	2.45%	74.43%	1.01%	1.6474	1.6606	3.9523	-3.8850	2.5337	-2.6817	0.0488	-0.0002	29.2159	28.6460	33.4930	35.7798	31.9300	35.7798	1066.45	1163.02	0.7231	0.0185	0.7228	0.0173	30.7604	34.5502
2.5	69.75%	3.46%	73.22%	1.45%	1.6461	1.6620	3.2817	-3.9595	2.2558	-2.8423	0.0691	-0.0002	29.1917	28.8795	33.7503	35.6940	31.9446	35.6940	1082.34	1176.29	0.7143	0.0262	0.7148	0.0246	30.9341	34.6929
3.0	68.84%	4.24%	71.99%	1.79%	1.6473	1.6607	3.0002	-3.9815	2.1879	-2.9171	0.0812	-0.0001	29.2140	29.1933	34.0647	35.8513	32.2219	35.8513	1107.00	1196.71	0.7034	0.0320	0.7042	0.0302	31.1765	34.9238
3.5	67.99%	4.63%	70.91%	1.97%	1.6486	1.6594	2.9506	-3.9815	2.1584	-2.9967	0.0892	-0.0001	29.2370	29.4634	34.2648	36.0371	32.4117	36.0371	1127.67	1214.27	0.6934	0.0350	0.6945	0.0330	31.3862	35.1503
4.0	66.93%	4.90%	69.83%	2.08%	1.6472	1.6608	2.9174	-4.0505	2.1490	-3.0605	0.0907	-0.0001	29.2121	29.6312	34.6364	36.2086	32.6233	36.2086	1145.31	1229.81	0.6828	0.0367	0.6838	0.0349	31.5969	35.3953
4.5	65.92%	5.03%	68.78%	2.17%	1.6458	1.6623	2.9947	-4.2906	2.1315	-3.1273	0.0935	0.0000	29.1865	29.8136	34.8365	36.4944	32.7912	36.4944	1157.48	1239.27	0.6723	0.0379	0.6735	0.0360	31.7470	35.6399
5.0	64.93%	5.09%	67.79%	2.20%	1.6471	1.6610	2.9726	-4.1885	2.1817	-3.0682	0.0948	0.0000	29.2096	29.9596	35.1366	36.6373	33.0612	36.6373	1180.32	1256.91	0.6624	0.0384	0.6636	0.0365	31.9412	35.8116
5.5	63.64%	5.32%	66.60%	2.32%	1.6484	1.6596	2.9285	-4.1582	2.1946	-3.1125	0.0982	0.0000	29.2330	30.1348	35.4082	36.7231	33.4626	36.7231	1211.50	1280.50	0.6500	0.0401	0.6512	0.0382	32.1839	35.9507
6.0	61.95%	5.51%	65.06%	2.39%	1.6469	1.6611	3.0002	-4.1333	2.2333	-3.1355	0.1006	0.0000	29.2065	30.3610	35.4225	36.7803	33.6815	36.7803	1236.73	1301.60	0.6339	0.0414	0.6350	0.0395	32.4207	36.0874
6.5	59.91%	5.49%	63.12%	2.43%	1.6453	1.6627	3.0499	-4.2244	2.2796	-3.1067	0.1029	0.0000	29.1782	30.6894	35.6940	36.7231	33.9296	36.7231	1260.66	1321.23	0.6139	0.0416	0.6151	0.0396	32.6449	36.2384
7.0	57.64%	5.47%	60.94%	2.43%	1.6466	1.6614	3.0140	-4.2299	2.2620	-3.1594	0.1020	0.0000	29.2013	31.0908	35.9942	37.0661	33.5355	37.0661	1256.39	1325.27	0.5917	0.0415	0.5929	0.0395	32.6999	36.3864
7.5	55.99%	5.19%	59.17%	2.30%	1.6480	1.6600	3.1492	-4.3017	2.2071	-3.2610	0.0975	0.0000	29.2260	31.2732	36.2086	37.1233	33.4918	37.1233	1257.01	1327.26	0.5746	0.0394	0.5758	0.0375	32.7347	36.5342
8.0	54.79%	5.20%	57.90%	2.30%	1.6464	1.6616	3.2348	-4.3817	2.1741	-3.3159	0.0986	0.0000	29.1978	31.4557	36.3515	37.1376	33.5355	37.1376	1267.74	1336.65	0.5621	0.0395	0.5634	0.0375	32.8522	36.6358
8.5	53.88%	5.22%	56.97%	2.30%	1.6448	1.6633	3.3700	-4.4672	2.1478	-3.3751	0.0980	0.0000	29.1688	31.7111	36.4944	37.2376	33.6085	37.2376	1283.46	1350.00	0.5530	0.0395	0.5543	0.0376	33.0143	36.7827
9.0	53.01%	5.34%	56.13%	2.36%	1.6462	1.6618	3.0416	-4.5611	2.1020	-3.4433	0.0996	0.0000	29.1945	32.0030	36.4944	37.4949	33.7545	37.4949	1304.31	1367.33	0.5443	0.0405	0.5457	0.0385	33.1838	36.9037
9.5	52.42%	5.33%	55.54%	2.34%	1.6462	1.6619	3.1244	-4.6714	2.0621	-3.5474	0.0982	0.0000	29.1934	32.2219	36.7088	37.4234	33.9004	37.4234	1319.95	1381.21	0.5386	0.0402	0.5398	0.0383	33.3286	37.0055
10.0	51.66%	5.40%	54.79%	2.37%	1.6477	1.6604	3.1492	-4.9198	1.9785	-3.6695	0.0993	0.0000	29.2203	32.4409	36.7803	37.5235	34.0172	37.5235	1340.93	1399.31	0.5310	0.0408	0.5322	0.0389	33.5042	37.1413
10.5	50.93%	5.43%	54.08%	2.36%	1.6460	1.6620	2.9588	-4.9888	1.8799	-3.7836	0.1002	0.0001	29.1908	32.7328	37.0661	37.7093	34.1924	37.7093	1362.82	1417.68	0.5239	0.0408	0.5251	0.0389	33.7034	37.2680
11.0	50.30%	5.44%	53.40%	2.39%	1.6443	1.6637	3.0609	-5.2620	1.7656	-3.9920	0.1001	0.0001	29.1606	32.9663	37.2948	37.8093	34.3091	37.8093	1380.31	1432.88	0.5172	0.0410	0.5185	0.0391	33.8738	37.3961
11.5	49.57%	5.48%	52.64%	2.39%	1.6459	1.6622	2.9174	-5.7477	1.5860	-4.3170	0.0981	0.0002	29.1877	33.2436	37.3520	37.8522	34.4843	37.8522	1403.88	1452.24	0.5100	0.0411	0.5111	0.0394	34.0524	37.5096
12.0	48.77%	5.49%	51.77%	2.44%	1.6474	1.6606	2.8843	-6.6639	1.3809	-4.6857	0.1016	0.0002	29.2156	33.4334	37.4663	37.9237	34.5718	37.9237	1426.52	1470.34	0.5014	0.0416	0.5027	0.0396	34.2203	37.6384
12.5	47.85%	5.56%	50.74%	2.47%	1.6457	1.6624	2.8485	-12.0948	0.7356	-5.7276	0.1024	0.0003	29.1846	33.6815	37.7807	37.9951	34.7762	37.9951	1444.42	1486.56	0.4917	0.0421	0.4929	0.0401	34.3911	37.7349
13.0	46.27%	6.11%	49.03%	2.78%	1.6438	1.6642	2.6525	-32.2619	-1.2978	-9.3942	0.1054	0.0007	29.1519	34.0172	37.6378	38.1523	34.8930	38.1523	1466.90	1501.27	0.4744	0.0468	0.4765	0.0444	34.5465	37.8186
13.5	28.69%	6.39%	31.95%	4.13%	1.6432	1.6649	3.4832	-4.1471	2.2565	-2.4453	0.0804	0.0246	29.1402	34.1559	36.7803	37.4234	34.9951	37.4234	1516.62	1529.57	0.3039	0.0524	0.3032	0.0526	34.6644	37.0436
14.0	30.81%	4.64%	33.79%	2.05%	1.6455	1.6626	3.3811	-4.4783	2.3383	-3.1913	0.0867	0.0003	29.1810	33.6961	37.5806	37.9237	34.6594	37.9237	1442.94	1485.17	0.3219	0.0352	0.3230	0.0334	34.3555	37.5862
14.5	29.06%	5.41%	32.26%	2.37%	1.6430	1.6650	3.5659	-4.6990	2.3111	-3.2616	0.0994	0.0006	29.1374	33.9004	37.7093	37.9951	34.8127	37.9951	1464.11	1499.86	0.3055	0.0409	0.3066	0.0389	34.5347	37.7807
15.0	27.83%	5.59%	31.07%	2.44%	1.6427	1.6653	3.8695	-4.7404	2.2462	-3.3344	0.1015	0.0007	29.1320	34.0099	37.9237	37.9951	34.8857	37.9951	1471.99	1506.46	0.2935	0.0421	0.2945	0.0402	34.6120	37.8895
15.5	26.58%	5.85%	29.81%	2.58%	1.6400	1.6681	3.3148	-5.0412	2.1754	-3.4443	0.1072	0.0010	29.0839	34.2799	37.9808	38.0952	34.9513	38.0952	1487.47	1516.82	0.2808	0.0442	0.2820	0.0422	34.7331	37.9541
16.0	25.33%	5.99%	28.57%	2.62%	1.6419	1.6661	3.2486	-5.0026	2.0965	-3.5832	0.1074	0.0012	29.1179	34.4478	38.1380	38.2095	35.0316	38.2095	1508.04	1533.77	0.2684	0.0450	0.2695	0.0430	34.8782	38.0479
16.5	24.31%	5.91%	27.51%	2.58%	1.6441	1.6640	3.1492	-5.1516	1.9408	-3.8701	0.1067	0.0014	29.1564	34.6886	38.2667	38.2095	35.1849	38.2095	1527.68	1550.78	0.2580	0.0444	0.2591	0.0425	35.0186	38.1318
17.0	23.09%	6.04%	26.25%	2.67%	1.6412	1.6668	3.2486	-6.3548	1.5646	-4.5117	0.1084	0.0016	29.1057	34.8857	38.5668	38.4239	35.3600	38.4239	1543.38	1563.55	0.2456	0.0455	0.2467	0.0435	35.1713	38.2693
17.5	20.11%	6.11%	21.89%	4.12%	1.6310	1.6771	3.1824	-7.1054	1.2280	-3.1329	0.0933	0.0173	28.9242	35.0681	37.9237	38.2095	35.3600	38.2095	1557.29	1565.80	0.2099	0.0516	0.2100	0.0511	35.2338	38.0324
18.0	19.43%	4.52%	22.10%	1.98%	1.6394	1.6687	3.3314	-4.8646	2.3879	-3.2661	0.0797	0.0016	29.0730	34.5573	38.2810	38.2095	35.1046	38.2095	1512.89	1533.91	0.2068	0.0339	0.2076	0.0325	34.9178	38.1605
18.5	17.39%	5.70%	20.61%	2.49%	1.6356	1.6725	3.3590	-4.8757	2.2781	-3.3668	0.0985	0.0019	29.0051	34.7762	38.4382	38.4954	35.2432	38.4954	1523.62	1546.98	0.1892	0.0426	0.1900	0.0410	35.0821	38.3002
19.0	15.87%	5.95%	19.29%	2.58%	1.6376	1.6705	3.2486	-4.8370	2.2379	-3.4196	0.0993	0.0023	29.0412	34.9951	38.7812	38.4954	35.3600	38.4954	1548.08	1566.51	0.1752	0.0441	0.1758	0.0426	35.2530	38.4394
19.5	15.06%	5.84%	18.50%	2.50%	1.6404	1.6677	3.4031	-4.8094	2.1313	-3.5689	0.0975	0.0026	29.0910	35.0973	38.9527	38.7812	35.4476	38.7812	1554.58	1571.00	0.1672	0.0432	0.1678	0.0417	35.3055	38.6700
20.0	13.48%	7.00%	17.58%	2.69%	1.6366	1.6715	2.9726	-4.8784	2.0749	-3.6918	0.1015	0.0036	29.0230	35.3235	39.1385	38.8527	35.4330	38.8527	1562.05	1575.79	0.1550	0.0494	0.1553	0.0485	35.3985	38.8091
20.5	14.84%	5.28%	18.09%	2.27%	1.6353	1.6728	3.2900	-4.7404	2.2106	-3.5105	0.0855	0.0030	28.9999	35.1046	39.1385	38.8527	35.4695	38.8527	1553.89	1565.07	0.1641	0.0389	0.1647	0.0378	35.3323	38.8868
21.0	13.53%	5.77%	17.08%	2.51%	1.6321	1.6760	3.0168	-4.7873	2.1041	-3.6324	0.0925	0.0033	28.9436	35.2724	39.3529	38.8955	35.4476	38.8955	1551.70	1565.90	0.1526	0.0426	0.1531	0.0414	35.3886	39.0347
21.5	12.69%	5.93%	16.33%	2.59%	1.6349	1.6731	2.9450	-4.8922	2.0237	-3.7342	0.0940	0.0038	28.9936	35.3235	39.4958	39.0671	35.5789	39.0671	1568.63	1578.69	0.1446	0.0437	0.1451	0.0426	35.4814	39.0896
22.0	12.36%	5.82%	14.63%	3.75%	1.6384	1.6697	2.8402	-4.5445	1.8536	-3.2802	0.0924	0.0179	29.0547	35.3600	39.2957	39.1242	35.5644	39.1242	1569.94	1580.16	0.1345	0.0488	0.1350	0.0478	35.4648	39.0826
22.5	13.01%	5.42%	16.37%	2.39%	1.6231	1.6849	3.1106	-4.6714	2.2814	-3.4977	0.0845	0.0045	28.7847	35.2870	39.4244	38.8527	35.4695	38.8527	1554.00	1560.34	0.1464	0.0400	0.1469	0.0391	35.4152	39.0398
23.0	12.10%	6.01%	15.80%	2.68%	1.6383	1.6698	3.2817	-4.7653	2.2262	-3.5450	0.0941	0.0050	29.0530	35.3892	39.4672	39.1242	35.5644	39.1242	1572.05	1582.00	0.1390	0.0445	0.1395	0.0435	35.4981	39.1894
23.5	11.87%	6.01%	15.61%	2.69%	1.6340	1.6740	3.0278	-4.8232	2.1327	-3.6582	0.0932	0.0051	28.9780	35.5425	39.7102	39.2100	35.6154	39.2100	1576.65	1585.05	0.1370	0.0445	0.1374	0.0435	35.5806	39.3358
24.0	11.74%	6.09%	15.50%	2.75%	1.6298	1.6783	2.9285	-4.9419	2.0103	-3.8349	0.0944	0.0055	28.9024	35.7395	39.8674	39.3529	35.7103	39.3529	1586.60	1592.92	0.1358	0.0453	0.1362	0.0442	35.7034	39.4803
24.5	11.48%	6.41%	14.28%	3.94%	1.6338	1.6743	2.8485	-4.7404	1.8594	-3.1498	0.0911	0.0209	28.9739	35.7249	39.7102	39.2814	35.6884	39.2814	1600.20	1597.90	0.1291	0.0521	0.1288	0.0517	35.6877	39.3366
25.0	14.09%	5.08%	17.33%	2.37%	1.6306	1.6775	3.0941	-4.8205	2.2506	-3.5788	0.0783	0.0057	28.9164	35.3892	39.8674	39.2957	35.4768	39.2957	1551.21	1564.00	0.1567	0.0381	0.1571	0.0372	35.4362	39.3591
25.5	12.42%	6.24%	16.08%	2.96%	1.6348	1.6732	3.1106	-4.8646	2.1991	-3.6277	0.0966	0.0073	28.9921	35.7249	40.0675	39.4958	35.7249	39.4958	1594.10	1600.25	0.1420	0.0471	0.1425	0.0460	35.7372	39.5696
26.0	12.11%	6.39%	15.21%	3.54%	1.6204	1.6877	3.3811	-4.3789	2.4463	-2.8006	0.0841	0.0108	28.7355	35.5935	39.5244	39.0671	35.6227	39.0671	1571.34	1570.12	0.1371	0.0492	0.1366	0.0496	35.5400	39.1807
26.5	13.10%	5.71%	16.49%	2.70%	1.6353	1.6728	3.3452	-4.5611	2.5581	-3.2460	0.0858	0.0072	29.0000	35.4695	39.7817	39.2100	35.5789	39.2100	1569.71	1578.41	0.1476	0.0429	0.1479	0.0421	35.5247	39.3909
27.0	12.13%	6.14%	15.89%	2.93%	1.6384	1.6697	3.3259	-4.5997	2.4998	-3.2928	0.0926	0.0072	29.0546	35.5935	39.9246	39.4101	35.5644	39.4101	1576.55	1583.95	0.1399	0.0462	0.1401	0.0454	35.5672	39.5250
27.5	12.01%	6.26%	15.89%	3.01%	1.6342	1.6738	3.2348	-4.6852	2.4201	-3.3684	0.0952	0.0073	28.9814	35.4695	39.9961	39.3529	35.5789	39.3529	1567.32	1576.14	0.1392	0.0473	0.1395	0.0463	35.5437	39.5758
28.0	12.15%	6.34%	16.08%	3.05%	1.6344	1.6736	3.1244	-4.7128	2.3803	-3.4193	0.0956	0.0076	28.9852	35.5060	39.9961	39.4244	35.5425	39.4244	1566.87	1578.74	0.1410	0.0478	0.1411	0.0470	35.5718	39.6271
28.5	12.23%	6.37%	16.23%	3.11%	1.6307	1.6773	3.1603	-4.6549	2.3822	-3.4219	0.0961	0.0081	28.9195	35.5644	40.2104	39.4672	35.6519	39.4672	1566.52	1577.79	0.1421	0.0482	0.1423	0.0474	35.6006	39.6704
29.0	12.31%	6.38%	16.36%	3.14%	1.6347	1.6734	3.1244	-4.7680	2.4065	-3.4134	0.0955	0.0084	28.9897	35.5789	40.3534	39.4244	35.6154	39.4244	1574.64	1584.93	0.1432	0.0484	0.1433	0.0476	35.6329	39.7009
29.5	12.41%	6.43%	16.61%	3.16%	1.6387	1.6693	3.1934	-4.7101	2.4375	-3.3871	0.0951	0.0087	29.0614	35.6519	40.2676	39.5244	35.6519	39.5244	1581.11	1590.60	0.1450	0.0487	0.1451	0.0479	35.6536	39.7400
30.0	12.60%	6.40%	16.82%	3.16%	1.6350	1.6730	3.2072	-4.6300	2.5030	-3.3473	0.0950	0.0089	28.9959	35.6154	40.2819	39.4958	35.6519	39.4958	1580.37	1591.04	0.1469	0.0486	0.1471	0.0478	35.6908	39.7661
30.5	12.84%	6.37%	17.12%	3.16%	1.6316	1.6765	3.3811	-4.6438	2.5970	-3.2942	0.0952	0.0089	28.9343	35.7979	40.4391	39.5816	35.6227	39.5816	1581.80	1591.16	0.1495	0.0485	0.1498	0.0477	35.7227	39.7841
31.0	13.20%	6.34%	17.57%	3.12%	1.6357	1.6724	3.4970	-4.6163	2.7100	-3.2474	0.0954	0.0090	29.0070	35.7614	40.2819	39.6387	35.6884	39.6387	1587.58	1598.39	0.1534	0.0482	0.1539	0.0473	35.7598	39.8500
31.5	13.92%	6.25%	18.33%	3.06%	1.6398	1.6683	3.5135	-4.6438	2.7263	-3.2968	0.0943	0.0089	29.0797	35.7687	40.4391	39.6387	35.7103	39.6387	1591.70	1602.38	0.1607	0.0475	0.1613	0.0466	35.7681	39.9028
32.0	14.94%	6.29%	19.29%	3.10%	1.6369	1.6711	3.3314	-4.8094	2.6209	-3.3833	0.0965	0.0088	29.0292	35.7979	40.5678	39.6387	35.7614	39.6387	1589.28	1600.24	0.1705	0.0480	0.1712	0.0469	35.7868	39.9875
32.5	15.79%	6.38%	20.16%	3.18%	1.6344	1.6737	3.4362	-4.7873	2.6825	-3.3422	0.0980	0.0090	28.9839	35.8271	40.7250	39.5816	35.7395	39.5816	1593.26	1603.57	0.1790	0.0488	0.1797	0.0478	35.8357	39.9935
33.0	16.17%	6.49%	20.64%	3.26%	1.6380	1.6700	3.7591	-4.7128	2.8349	-3.2645	0.0994	0.0092	29.0489	35.8709	40.4963	39.6387	35.7979	39.6387	1603.73	1613.23	0.1834	0.0497	0.1841	0.0487	35.8844	39.9875
33.5	16.64%	6.38%	21.17%	3.19%	1.6383	1.6697	4.1041	-4.7128	2.9784	-3.2162	0.0975	0.0092	29.0538	35.9803	40.6392	39.7102	35.8709	39.7102	1608.11	1617.21	0.1883	0.0488	0.1890	0.0478	35.9201	40.0217
34.0	17.48%	6.32%	22.02%	3.14%	1.6418	1.6663	4.1869	-4.7322	2.9758	-3.2463	0.0980	0.0089	29.1149	35.9146	40.6678	39.8103	35.8271	39.8103	1610.00	1619.45	0.1966	0.0484	0.1975	0.0473	35.9191	40.0762
34.5	18.84%	6.26%	23.26%	3.12%	1.6393	1.6688	3.8695	-4.8094	2.8657	-3.3569	0.0998	0.0086	29.0710	35.9438	40.7107	39.9961	35.7979	39.9961	1610.00	1619.40	0.2093	0.0482	0.2105	0.0469	35.9475	40.1320
35.0	19.98%	6.39%	24.37%	3.23%	1.6371	1.6710	3.6791	-4.8977	2.7825	-3.4317	0.1040	0.0085	29.0319	36.0606	40.7821	39.8674	35.9438	39.8674	1613.44	1622.79	0.2204	0.0496	0.2218	0.0481	35.9985	40.1675
35.5	21.11%	6.41%	25.50%	3.26%	1.6405	1.6676	3.9523	-4.8094	2.8517	-3.3987	0.1045	0.0086	29.0924	36.0898	40.7821	39.9246	35.9073	39.9246	1620.53	1629.84	0.2316	0.0498	0.2330	0.0484	36.0339	40.2034
36.0	21.82%	6.51%	26.38%	3.29%	1.6434	1.6647	4.2531	-4.8094	3.0361	-3.3118	0.1050	0.0090	29.1442	36.0898	40.7821	39.9246	35.9438	39.9246	1625.24	1634.64	0.2396	0.0504	0.2410	0.0490	36.0508	40.2129
36.5	23.05%	6.20%	27.51%	3.14%	1.6410	1.6670	3.8419	-4.8784	2.9591	-3.4176	0.1029	0.0087	29.1022	35.9803	40.9965	39.9961	35.9073	39.9961	1613.56	1623.47	0.2511	0.0483	0.2528	0.0467	35.9879	40.2679
37.0	24.53%	6.33%	28.78%	3.25%	1.6391	1.6690	4.2641	-4.9088	2.9234	-3.4612	0.1051	0.0089	29.0680	36.0314	41.0108	39.9246	36.0022	39.9246	1612.48	1624.32	0.2649	0.0495	0.2666	0.0479	36.0140	40.2918
37.5	25.97%	6.56%	30.16%	3.41%	1.6421	1.6660	4.3800	-4.9198	2.9184	-3.4871	0.1088	0.0095	29.1203	36.0898	41.0680	40.1390	36.0533	40.1390	1625.47	1637.93	0.2789	0.0515	0.2806	0.0498	36.1140	40.3766
38.0	27.32%	6.63%	31.51%	3.46%	1.6447	1.6633	4.0102	-4.9529	2.9892	-3.4707	0.1104	0.0099	29.1673	36.2358	41.0680	40.0961	36.1190	40.0961	1637.92	1649.37	0.2924	0.0521	0.2942	0.0504	36.1923	40.4248
38.5	28.40%	6.76%	32.66%	3.53%	1.6426	1.6654	4.0627	-4.9336	3.0212	-3.4920	0.1134	0.0105	29.1308	36.2722	41.1395	40.0675	36.1628	40.0675	1642.47	1652.46	0.3034	0.0533	0.3053	0.0514	36.2417	40.4761
39.0	29.33%	6.69%	33.59%	3.52%	1.6428	1.6652	4.9871	-4.9612	3.0296	-3.4983	0.1134	0.0107	29.1344	36.3087	41.1395	40.1390	36.1993	40.1390	1647.87	1657.06	0.3125	0.0529	0.3146	0.0510	36.2854	40.5297
39.5	30.05%	6.76%	34.41%	3.54%	1.6409	1.6672	4.3966	-4.9860	3.0409	-3.5160	0.1125	0.0111	29.0991	36.4109	41.2395	40.2104	36.2649	40.2104	1650.17	1660.73	0.3204	0.0533	0.3223	0.0515	36.3370	40.5690

SR100 Serial No. 60339

Effects of long-term heat exposure on self-contained self-rescuers

August 31, 2006

Time sec	Exp O2 percent	Exp CO2 percent	Ins O2 percent	Ins CO2 percent	Exp Vol liters	Ins Vol liters	Exp Pk Prs cm H2O	Ins Pk Prs cm H2O	Exp Av Prs cm H2O	Ins Av Prs cm H2O	xp CO2 Pk liters	ns CO2Min liters	VE Stpd liers/min	sWB EndT C	nsDB EndT C	xpDB EndT C	pWB EndT C	pDB EndT C	ExpH2OVapr	InsH2OVapr	uthO2TAv	th CO2TAv	uthO2VAv	th CO2VAv	sWBAvgTp C	sDBAvgTp C
40.0	30.90%	6.69%	35.19%	3.53%	1.6432	1.6648	4.8630	-5.0164	3.0542	-3.5471	0.1116	0.0113	29.1410	36.4912	41.4253	40.2819	36.3087	40.2819	1659.31	1670.11	0.3285	0.0529	0.3305	0.0511	36.4044	40.6423
40.5	31.82%	6.73%	36.01%	3.60%	1.6455	1.6626	5.2576	-5.0854	3.0554	-3.5744	0.1128	0.0117	29.1814	36.6152	41.4110	40.3820	36.4401	40.3820	1676.08	1685.86	0.3373	0.0534	0.3392	0.0516	36.5188	40.6926
41.0	32.75%	6.91%	36.90%	3.72%	1.6435	1.6646	4.7664	-5.1682	3.0716	-3.6012	0.1138	0.0122	29.1456	36.7466	41.4253	40.4963	36.5642	40.4963	1686.74	1698.42	0.3464	0.0549	0.3482	0.0531	36.6427	40.7448
41.5	33.69%	7.01%	37.76%	3.83%	1.6416	1.6665	4.8823	-5.1626	3.0781	-3.6161	0.1160	0.0129	29.1123	36.8488	41.4682	40.3248	36.6444	40.3248	1700.53	1708.82	0.3554	0.0560	0.3573	0.0542	36.7413	40.7511
42.0	34.79%	6.95%	38.79%	3.81%	1.6439	1.6642	5.0423	-5.1406	3.0948	-3.6408	0.1147	0.0135	29.1521	36.8926	41.4253	40.2104	36.7831	40.2104	1717.78	1721.12	0.3661	0.0556	0.3679	0.0538	36.8228	40.7720
42.5	35.68%	7.02%	39.61%	3.89%	1.6460	1.6621	5.1030	-5.1847	3.1114	-3.6594	0.1177	0.0140	29.1898	37.0823	41.5825	40.4391	36.9655	40.4391	1736.90	1737.61	0.3745	0.0565	0.3765	0.0545	36.9354	40.7796
43.0	36.27%	7.22%	40.28%	4.01%	1.6440	1.6640	4.6698	-5.1958	3.1306	-3.6814	0.1206	0.0146	29.1555	37.1845	41.5682	40.3534	36.9655	40.3534	1754.10	1751.96	0.3808	0.0581	0.3828	0.0562	37.0647	40.7907
43.5	37.02%	7.23%	41.00%	4.02%	1.6422	1.6659	4.7940	-5.2289	3.1480	-3.6959	0.1177	0.0151	29.1221	37.3158	41.5825	40.3248	37.0823	40.3248	1769.39	1764.69	0.3882	0.0581	0.3901	0.0563	37.1858	40.8331
44.0	37.72%	7.28%	41.67%	4.08%	1.6442	1.6638	3.8833	-5.2786	3.1626	-3.7167	0.1195	0.0157	29.1589	37.4764	41.4968	40.4248	37.2210	40.4248	1785.67	1778.08	0.3950	0.0587	0.3970	0.0568	37.2801	40.8870
44.5	38.10%	7.41%	42.06%	4.17%	1.6443	1.6638	4.0213	-5.2648	3.1740	-3.7345	0.1198	0.0166	29.1596	37.6223	41.6397	40.4248	37.2939	40.4248	1799.36	1791.42	0.3990	0.0597	0.4008	0.0579	37.3888	40.9297
45.0	38.75%	7.31%	42.63%	4.17%	1.6463	1.6618	3.9330	-5.2951	3.1908	-3.7458	0.1202	0.0171	29.1951	37.6369	41.7540	40.6106	37.2866	40.6106	1814.47	1801.48	0.4049	0.0594	0.4069	0.0574	37.4615	41.0133
45.5	38.92%	7.56%	42.86%	4.33%	1.6444	1.6637	3.9523	-5.3199	3.2071	-3.7647	0.1220	0.0177	29.1612	37.8048	41.7112	40.6392	37.4764	40.6392	1821.00	1811.21	0.4070	0.0613	0.4089	0.0594	37.5581	41.0563
46.0	39.18%	7.60%	43.15%	4.37%	1.6425	1.6656	4.1869	-5.3393	3.2221	-3.7802	0.1245	0.0183	29.1274	37.9580	41.9827	40.7250	37.5494	40.7250	1832.02	1821.05	0.4097	0.0618	0.4117	0.0599	37.6617	41.1407
46.5	39.18%	7.75%	43.20%	4.49%	1.6444	1.6637	4.2145	-5.3475	3.2338	-3.7971	0.1261	0.0190	29.1616	38.0967	41.9970	40.7821	37.6953	40.7821	1850.06	1835.96	0.4099	0.0632	0.4119	0.0612	37.7687	41.2086
47.0	39.31%	7.69%	43.30%	4.50%	1.6463	1.6618	4.0323	-5.3503	3.2435	-3.8119	0.1256	0.0195	29.1956	38.2208	41.9827	40.8965	37.8413	40.8965	1872.49	1857.29	0.4110	0.0630	0.4130	0.0610	37.9222	41.2699
47.5	39.30%	7.72%	43.30%	4.53%	1.6444	1.6637	4.0351	-5.3889	3.2564	-3.8212	0.1249	0.0202	29.1611	38.2792	42.1399	40.8536	37.9143	40.8536	1883.66	1867.96	0.4110	0.0632	0.4130	0.0612	38.0238	41.3041
48.0	39.20%	7.82%	43.19%	4.62%	1.6424	1.6657	4.0544	-5.3834	3.2666	-3.8419	0.1266	0.0209	29.1264	38.2500	42.0970	40.8965	37.8413	40.8965	1876.74	1857.10	0.4099	0.0642	0.4119	0.0622	37.9663	41.3631
48.5	39.02%	7.94%	43.04%	4.68%	1.6445	1.6636	4.0627	-5.4303	3.2783	-3.8592	0.1236	0.0217	29.1629	37.5859	42.2114	40.9965	37.1480	40.9965	1779.73	1770.52	0.4086	0.0648	0.4103	0.0631	37.2936	41.3810
49.0	39.04%	7.93%	43.01%	4.71%	1.6464	1.6617	4.0434	-5.4165	3.2918	-3.8719	0.1270	0.0221	29.1972	37.4618	42.2114	41.0108	36.9655	41.0108	1760.25	1756.31	0.4083	0.0651	0.4103	0.0632	37.1715	41.4035
49.5	38.91%	7.98%	42.82%	4.79%	1.6445	1.6636	4.1041	-5.4855	3.2946	-3.8907	0.1276	0.0228	29.1632	37.3304	42.2114	41.0680	37.0385	41.0680	1752.53	1749.55	0.4067	0.0658	0.4087	0.0638	37.1429	41.4556
50.0	38.72%	8.11%	42.66%	4.86%	1.6425	1.6655	4.0654	-5.5048	3.3037	-3.9051	0.1271	0.0231	29.1290	37.4326	42.3829	40.9537	36.9947	40.9537	1753.02	1750.70	0.4051	0.0667	0.4069	0.0648	37.1706	41.4744
50.5	38.81%	8.03%	42.60%	4.89%	1.6445	1.6636	4.0765	-5.5269	3.3104	-3.9275	0.1285	0.0235	29.1629	37.4764	42.3543	41.1395	36.9290	41.1395	1758.72	1754.64	0.4051	0.0666	0.4071	0.0646	37.1925	41.5224
51.0	38.55%	8.25%	42.39%	5.02%	1.6444	1.6636	4.1041	-5.5821	3.3135	-3.9344	0.1313	0.0242	29.1624	37.5129	42.3543	41.0680	37.0385	41.0680	1760.00	1755.65	0.4028	0.0683	0.4047	0.0663	37.2008	41.5239
51.5	38.37%	8.37%	42.21%	5.11%	1.6463	1.6617	4.0765	-5.5600	3.3216	-3.9466	0.1324	0.0249	29.1963	37.6077	42.4401	41.1823	37.0531	41.1823	1765.29	1761.25	0.4010	0.0693	0.4029	0.0674	37.2366	41.5794
52.0	38.27%	8.43%	42.08%	5.15%	1.6444	1.6637	4.1869	-5.5545	3.3319	-3.9626	0.1312	0.0256	29.1617	37.6223	42.5687	41.1395	37.1115	41.1395	1771.87	1764.98	0.4000	0.0697	0.4018	0.0679	37.2928	41.6552
52.5	38.30%	8.37%	42.02%	5.17%	1.6424	1.6656	4.1427	-5.6263	3.3416	-3.9813	0.1312	0.0261	29.1273	37.7537	42.6687	41.2395	37.0531	41.2395	1774.30	1767.44	0.3998	0.0696	0.4016	0.0677	37.3346	41.7006
53.0	38.11%	8.47%	41.86%	5.20%	1.6443	1.6637	4.2420	-5.6373	3.3518	-3.9970	0.1316	0.0263	29.1609	37.8413	42.7116	41.2109	37.1115	41.2109	1785.21	1777.53	0.3981	0.0702	0.3998	0.0684	37.4062	41.7663
53.5	37.90%	8.61%	41.68%	5.29%	1.6463	1.6618	4.1758	-5.6483	3.3560	-4.0052	0.1336	0.0266	29.1950	37.9289	42.8403	41.2967	37.1991	41.2967	1799.21	1791.12	0.3962	0.0713	0.3979	0.0695	37.5069	41.8509
54.0	37.83%	8.56%	41.55%	5.29%	1.6443	1.6638	4.7388	-5.6787	3.3684	-4.0156	0.1353	0.0269	29.1597	38.0237	42.9260	41.4968	37.3304	41.4968	1810.77	1801.63	0.3950	0.0712	0.3969	0.0692	37.6228	41.9814
54.5	37.61%	8.68%	41.35%	5.36%	1.6423	1.6658	4.4187	-5.6925	3.3732	-4.0281	0.1353	0.0269	29.1245	38.1040	43.0118	41.6397	37.4034	41.6397	1818.77	1808.41	0.3930	0.0721	0.3948	0.0702	37.7081	42.0976
55.0	37.49%	8.71%	41.23%	5.35%	1.6442	1.6638	4.7526	-5.7339	3.3819	-4.0505	0.1344	0.0270	29.1586	38.2062	43.1404	41.7112	37.4764	41.7112	1831.75	1819.68	0.3919	0.0721	0.3936	0.0703	37.7906	42.1865
55.5	37.43%	8.66%	41.12%	5.34%	1.6462	1.6619	4.3966	-5.7146	3.3899	-4.0582	0.1340	0.0270	29.1930	38.3375	43.1833	41.6397	37.5786	41.6397	1841.91	1829.80	0.3910	0.0718	0.3927	0.0700	37.8502	42.1834
56.0	37.28%	8.71%	40.95%	5.39%	1.6442	1.6639	4.2007	-5.7615	3.3963	-4.0763	0.1337	0.0275	29.1577	38.3521	43.3548	41.5682	37.5494	41.5682	1843.41	1829.12	0.3895	0.0723	0.3911	0.0705	37.8651	42.2067
56.5	37.13%	8.77%	40.79%	5.44%	1.6442	1.6639	4.7112	-5.7753	3.3999	-4.0868	0.1351	0.0278	29.1576	38.4251	43.1404	41.7112	37.5494	41.7112	1846.69	1832.34	0.3880	0.0728	0.3896	0.0710	37.8901	42.2114
57.0	37.03%	8.77%	40.64%	5.46%	1.6421	1.6659	4.4076	-5.8029	3.3900	-4.1304	0.1371	0.0281	29.1216	38.5127	43.2976	41.6397	37.6369	41.6397	1851.05	1835.81	0.3865	0.0731	0.3883	0.0712	37.9378	42.2412
57.5	36.89%	8.80%	40.48%	5.50%	1.6441	1.6640	4.5456	-5.8305	3.3492	-4.1788	0.1362	0.0281	29.1565	38.4251	43.2833	41.5682	37.5859	41.5682	1851.45	1836.00	0.3852	0.0733	0.3869	0.0715	37.9274	42.2735
58.0	36.67%	8.90%	40.29%	5.53%	1.6461	1.6620	4.4628	-5.9353	3.3171	-4.2293	0.1368	0.0287	29.1913	38.5419	43.3548	41.6397	37.6077	41.6397	1855.20	1840.01	0.3831	0.0740	0.3848	0.0722	37.9441	42.2946
58.5	36.53%	8.87%	40.07%	5.57%	1.6440	1.6640	4.6146	-5.9271	3.2842	-4.2788	0.1371	0.0291	29.1556	38.5711	43.2833	41.6397	37.5859	41.6397	1863.12	1846.21	0.3812	0.0741	0.3830	0.0722	38.0075	42.2945
59.0	36.22%	8.98%	39.81%	5.62%	1.6420	1.6661	4.4739	-5.9795	3.2471	-4.3320	0.1386	0.0293	29.1190	38.6878	43.2976	41.6397	37.6953	41.6397	1870.56	1851.83	0.3784	0.0750	0.3802	0.0730	38.0672	42.2952
59.5	35.99%	9.00%	39.57%	5.63%	1.6439	1.6641	4.2558	-6.0236	3.2082	-4.3835	0.1374	0.0296	29.1538	38.7535	43.4262	41.6397	37.6953	41.6397	1880.76	1859.87	0.3762	0.0749	0.3778	0.0731	38.1174	42.3403
60.0	35.79%	9.00%	39.34%	5.63%	1.6459	1.6621	4.2531	-6.0568	3.1795	-4.4376	0.1390	0.0296	29.1890	38.8046	43.4691	41.6969	37.7245	41.6969	1887.92	1865.52	0.3740	0.0751	0.3757	0.0732	38.1501	42.3909
60.5	35.52%	9.04%	39.03%	5.70%	1.6439	1.6642	4.1731	-6.0926	3.1607	-4.4852	0.1389	0.0298	29.1525	38.8630	43.4977	41.7826	37.6953	41.7826	1890.69	1870.38	0.3711	0.0756	0.3727	0.0737	38.2106	42.4390
61.0	35.16%	9.14%	38.70%	5.75%	1.6418	1.6663	4.3083	-6.1340	3.2174	-4.4907	0.1394	0.0296	29.1154	38.8630	43.4691	41.8112	37.6953	41.8112	1882.04	1860.51	0.3678	0.0762	0.3693	0.0745	38.1583	42.4637
61.5	34.99%	9.08%	38.51%	5.70%	1.6438	1.6643	4.2972	-6.1340	3.2088	-4.5108	0.1388	0.0293	29.1508	38.7900	43.5692	41.7112	37.7318	41.7112	1888.40	1865.45	0.3660	0.0757	0.3675	0.0739	38.1765	42.4514
62.0	34.66%	9.15%	38.13%	5.78%	1.6437	1.6643	4.3110	-6.1340	3.1975	-4.5422	0.1410	0.0294	29.1499	38.8265	43.6406	41.7826	37.6953	41.7826	1887.23	1865.75	0.3624	0.0765	0.3639	0.0747	38.1824	42.4739
62.5	34.38%	9.13%	37.80%	5.79%	1.6458	1.6623	4.2310	-6.1671	3.1857	-4.5539	0.1402	0.0297	29.1859	38.8922	43.6406	41.6969	37.7829	41.6969	1894.76	1872.22	0.3594	0.0764	0.3609	0.0746	38.2180	42.5053
63.0	34.00%	9.18%	37.43%	5.80%	1.6436	1.6644	4.2007	-6.2306	3.1661	-4.5997	0.1401	0.0300	29.1479	39.0819	43.6406	41.7826	37.8413	41.7826	1908.21	1882.01	0.3557	0.0767	0.3572	0.0749	38.3149	42.5477
63.5	33.57%	9.23%	37.00%	5.83%	1.6414	1.6666	4.2531	-6.2886	3.1536	-4.6378	0.1413	0.0299	29.1090	39.2425	43.6406	41.9255	37.9580	41.9255	1921.48	1894.09	0.3514	0.0771	0.3528	0.0753	38.4290	42.5879
64.0	33.04%	9.33%	36.48%	5.89%	1.6434	1.6646	4.2696	-6.3410	3.1530	-4.6848	0.1419	0.0305	29.1443	39.3008	43.7836	42.0685	38.0237	42.0685	1933.41	1904.38	0.3462	0.0779	0.3476	0.0761	38.4961	42.6448
64.5	32.58%	9.31%	35.96%	5.91%	1.6455	1.6626	4.2531	-6.3879	3.1221	-4.7277	0.1421	0.0311	29.1806	39.3300	43.8693	41.9827	38.0456	41.9827	1942.60	1914.22	0.3411	0.0779	0.3427	0.0761	38.5600	42.7072
65.0	31.94%	9.42%	35.36%	5.94%	1.6432	1.6648	4.2558	-6.4514	3.1101	-4.7719	0.1422	0.0309	29.1410	39.4833	43.9265	42.0685	38.1332	42.0685	1953.57	1921.11	0.3351	0.0785	0.3365	0.0768	38.6362	42.7535
65.5	31.26%	9.49%	34.68%	6.02%	1.6409	1.6672	4.2641	-6.4762	3.1086	-4.8100	0.1434	0.0313	29.0992	39.5928	43.9837	42.0970	38.1916	42.0970	1962.98	1929.27	0.3283	0.0793	0.3297	0.0776	38.7196	42.7775
66.0	30.52%	9.50%	33.94%	6.02%	1.6429	1.6652	4.3110	-6.5480	3.1244	-4.8192	0.1425	0.0320	29.1350	39.6293	43.9265	42.1399	38.2427	42.1399	1971.33	1936.51	0.3210	0.0793	0.3223	0.0776	38.7627	42.8297
66.5	29.52%	9.52%	32.91%	6.10%	1.6450	1.6631	4.2972	-6.5204	3.1398	-4.8296	0.1458	0.0324	29.1719	39.7387	44.0980	42.0970	38.1916	42.0970	1983.17	1946.39	0.3106	0.0800	0.3122	0.0781	38.8230	42.8744
67.0	27.80%	9.82%	31.35%	6.27%	1.6424	1.6656	4.3248	-6.4652	3.1608	-4.8282	0.1466	0.0336	29.1267	39.8847	43.9979	42.1399	38.2792	42.1399	1992.46	1953.99	0.2945	0.0821	0.2958	0.0804	38.9035	42.8972
67.5	26.65%	9.45%	30.16%	6.03%	1.6420	1.6660	4.3248	-6.5618	3.1396	-4.8814	0.1427	0.0329	29.1199	39.9941	44.1409	42.1399	38.3521	42.1399	2001.69	1961.05	0.2826	0.0792	0.2841	0.0774	38.9642	42.9400
68.0	25.92%	9.30%	29.27%	5.91%	1.6393	1.6688	4.3524	-6.7080	3.1176	-4.9418	0.1401	0.0328	29.0711	39.9431	44.2123	42.2114	38.3375	42.2114	1999.80	1959.46	0.2745	0.0779	0.2760	0.0760	38.9874	43.0173
68.5	24.96%	9.56%	28.31%	6.07%	1.6414	1.6666	4.4766	-6.9205	3.0863	-4.9870	0.1433	0.0327	29.1095	40.0671	44.2838	42.2828	38.4251	42.2828	2009.60	1967.03	0.2649	0.0799	0.2663	0.0781	39.0340	43.0922
69.0	24.17%	9.54%	27.44%	6.05%	1.6438	1.6643	4.4959	-6.9288	3.0586	-5.0347	0.1429	0.0339	29.1506	40.1182	44.3267	42.2686	38.4835	42.2686	2017.45	1976.60	0.2566	0.0798	0.2581	0.0780	39.0915	43.1534
69.5	23.29%	9.62%	26.54%	6.10%	1.6409	1.6671	4.6422	-7.0447	3.0304	-5.1061	0.1429	0.0351	29.1006	40.2496	44.4982	42.3543	38.4981	42.3543	2027.60	1983.14	0.2477	0.0804	0.2491	0.0786	39.1649	43.1660
70.0	22.40%	9.63%	25.57%	6.13%	1.6379	1.6702	4.3414	-7.1606	2.9776	-5.1751	0.1433	0.0358	29.0458	40.3809	44.4410	42.3829	38.6003	42.3829	2040.50	1992.91	0.2382	0.0808	0.2398	0.0788	39.2727	43.2404
70.5	20.61%	10.06%	23.91%	6.37%	1.6399	1.6682	4.4076	-7.0033	2.9557	-5.2180	0.1443	0.0383	29.0817	40.5415	44.4982	42.3543	38.6805	42.3543	2058.95	2010.21	0.2213	0.0838	0.2226	0.0822	39.3806	43.2507
71.0	19.15%	9.68%	22.34%	6.12%	1.6421	1.6659	4.4739	-7.1716	2.8336	-5.4093	0.1398	0.0371	29.1220	40.7312	44.6125	42.4401	38.7170	42.4401	2075.67	2024.29	0.2060	0.0807	0.2074	0.0790	39.4691	43.3088
71.5	17.85%	9.67%	20.93%	6.11%	1.6386	1.6695	4.2834	-7.4310	2.5970	-5.8263	0.1392	0.0375	29.0583	40.8699	44.6411	42.3543	38.8265	42.3543	2089.63	2036.28	0.1926	0.0806	0.1939	0.0789	39.5952	43.3750
72.0	16.15%	10.10%	19.17%	6.39%	1.6342	1.6739	4.2531	-11.0682	1.9065	-6.8777	0.1406	0.0385	28.9806	41.1399	44.7269	42.4972	38.9797	42.4972	2104.68	2050.05	0.1756	0.0838	0.1766	0.0825	39.7362	43.4070
			74.43%	6.39%			5.2576	-3.8850																		
			14.28%	1.01%			2.6525	-32.2619																		
			35.52%	3.89%																						

Bag went flat at 12.5 min and had to take external breaths to reinflate - ignored the inspired value at 12.5 min use end of life max at 72 min

SR100 Serial No. 60078

Effects of long-term heat exposure on self-conatined self-rescuers

August 31, 2006

Time sec	Exp O2 percent	Exp CO2 percent	Ins O2 percent	Ins CO2 percent	Exp Vol liters	Ins Vol liters	Exp Pk Prs cm H2O	Ins Pk Prs cm H2O	Exp Av Prs cm H2O	Ins Av Prs cm H2O	xp CO2 Pk liters	ns CO2Min liters	VE Stpd liers/min	sWB EndT C	sDB EndT C	xpDB EndT C	pWB EndT C	xpDB EndT C	ExpH2OVapr	InsH2OVapr	uthO2TAv	th CO2TAv	uthO2VAv	th CO2VAv	sWBAvgTp C	sDBAvgTp C
0.0	0.00%	0.00%	0.00%	0.00%	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.00	0.00	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.5	22.49%	1.08%	24.03%	1.81%	1.9748	1.6589	0.5552	-0.9681	0.1114	-0.2791	0.0184	0.0050	25.7647	22.9752	25.7082	32.3210	29.5509	32.3210	947.15	895.88	0.2081	0.0108	0.2326	0.0144	23.6776	26.4426
1.0	21.17%	0.28%	22.51%	0.65%	1.6477	1.6557	0.9195	-1.1447	0.1695	-0.3233	0.0057	0.0035	29.2200	27.9746	31.9780	32.0923	28.0914	32.0923	956.13	953.78	0.2179	0.0047	0.2184	0.0047	27.8636	31.9189
1.5	20.05%	3.01%	22.39%	1.51%	1.6317	1.6717	1.7860	-33.9369	-4.5043	-24.6098	0.0392	0.0034	28.9362	28.2081	30.9918	32.6355	29.8866	32.6355	1046.41	1068.54	0.2136	0.0223	0.2122	0.0226	29.1795	31.7802
2.0	18.05%	3.65%	19.08%	1.88%	1.6363	1.6671	4.0489	-1.7187	2.6451	-0.4085	0.0467	0.0014	29.0182	31.3462	31.7064	33.2786	32.8058	33.2786	1306.83	1332.32	0.1863	0.0269	0.1856	0.0276	32.1109	32.4661
2.5	16.58%	3.48%	18.76%	1.11%	1.6391	1.6643	4.5401	-3.5290	2.4492	-2.0345	0.0534	-0.0002	29.0678	29.2006	30.4344	32.9499	31.9738	32.9499	1175.11	1232.69	0.1769	0.0236	0.1767	0.0230	30.9801	31.8388
3.0	13.87%	4.44%	16.80%	1.42%	1.6344	1.6689	2.4483	-3.5814	1.7876	-2.4792	0.0668	-0.0002	28.9850	28.7190	30.4916	32.8498	31.8206	32.8498	1131.66	1199.37	0.1538	0.0300	0.1534	0.0293	30.6740	31.8330
3.5	12.23%	4.77%	15.46%	1.53%	1.6289	1.6745	2.2662	-3.5842	1.6384	-2.6033	0.0710	-0.0002	28.8869	28.8503	31.0061	33.4072	31.7987	33.4072	1122.35	1194.75	0.1389	0.0322	0.1385	0.0315	30.7583	32.2874
4.0	11.09%	4.69%	14.38%	1.50%	1.6311	1.6722	2.2275	-3.6504	1.5923	-2.7292	0.0694	-0.0002	28.9269	28.9379	31.7064	33.8503	31.8570	33.8503	1116.85	1190.09	0.1277	0.0316	0.1273	0.0309	30.8040	32.8467
4.5	10.16%	4.79%	13.52%	1.54%	1.6344	1.6689	2.1889	-3.7718	1.5882	-2.7784	0.0697	-0.0002	28.9849	29.1422	32.7212	34.6078	31.9446	34.6078	1115.44	1189.11	0.1188	0.0322	0.1184	0.0316	30.9363	33.6931
5.0	9.40%	4.68%	12.86%	1.47%	1.6289	1.6745	2.1448	-3.8436	1.5818	-2.8606	0.0668	-0.0002	28.8863	29.3028	33.9218	35.3510	32.0030	35.3510	1107.63	1180.96	0.1117	0.0312	0.1113	0.0307	31.0702	34.5874
5.5	9.01%	4.65%	12.50%	1.46%	1.6233	1.6801	2.1999	-4.0257	1.4972	-3.0364	0.0666	-0.0002	28.7876	29.5509	34.6078	35.8655	32.0906	35.8655	1106.20	1180.83	0.1079	0.0311	0.1075	0.0306	31.2187	35.1441
6.0	8.77%	4.65%	12.33%	1.45%	1.6275	1.6758	2.1448	-4.2299	1.4304	-3.2114	0.0659	-0.0002	28.8627	29.7772	34.9937	35.9942	32.2949	35.9942	1122.18	1194.04	0.1058	0.0310	0.1055	0.0305	31.3724	35.4093
6.5	8.66%	4.61%	12.29%	1.45%	1.6321	1.6712	2.0344	-4.4672	1.2175	-3.5334	0.0657	-0.0002	28.9446	30.0472	35.2367	36.0942	32.3533	36.0942	1140.98	1212.11	0.1051	0.0308	0.1047	0.0303	31.5591	35.6194
7.0	9.21%	4.52%	12.67%	2.00%	1.6273	1.6761	1.7860	-12.1913	0.7686	-4.5237	0.0593	0.0043	28.8579	30.9083	35.3510	36.1371	32.5868	36.1371	1198.36	1248.93	0.1091	0.0331	0.1094	0.0326	31.9431	35.6563
7.5	14.06%	3.74%	16.99%	1.56%	1.6216	1.6818	5.7322	-2.3258	3.4820	-0.7635	0.0438	0.0018	28.7567	31.8206	35.1366	36.0656	33.1707	36.0656	1298.41	1320.57	0.1561	0.0258	0.1552	0.0265	32.6662	35.5258
8.0	14.11%	3.71%	17.25%	1.24%	1.6378	1.6656	3.6460	-3.7939	2.3370	-2.4636	0.0563	-0.0002	29.0448	30.5142	35.9799	36.6087	32.5576	36.6087	1166.99	1239.09	0.1566	0.0253	0.1568	0.0248	31.8790	36.1278
8.5	12.71%	4.61%	16.54%	1.56%	1.6334	1.6700	3.2762	-3.7884	2.2423	-2.5278	0.0683	-0.0003	28.9662	30.9083	36.1371	36.7088	32.8058	36.7088	1195.32	1260.94	0.1463	0.0314	0.1462	0.0308	32.1530	36.2862
9.0	12.13%	4.67%	16.18%	1.56%	1.6288	1.6745	3.5577	-3.8491	2.3566	-2.4746	0.0678	-0.0002	28.8861	31.0981	36.5516	36.7803	32.8787	36.7803	1208.75	1272.17	0.1418	0.0317	0.1416	0.0312	32.3454	36.5590
9.5	12.05%	4.60%	16.14%	1.53%	1.6325	1.6709	3.5659	-3.8436	2.3745	-2.5133	0.0677	-0.0002	28.9506	31.3097	36.7803	37.1376	33.0612	37.1376	1224.26	1285.31	0.1411	0.0312	0.1409	0.0307	32.4833	36.7748
10.0	12.03%	4.64%	16.17%	1.53%	1.6363	1.6670	3.5025	-3.9043	2.3679	-2.5546	0.0677	-0.0002	29.0183	31.5359	37.0089	37.2948	33.1707	37.2948	1239.34	1297.65	0.1412	0.0314	0.1410	0.0308	32.6078	36.9741
10.5	12.05%	4.64%	16.18%	1.55%	1.6325	1.6709	3.4142	-3.9539	2.3806	-2.5815	0.0679	-0.0002	28.9502	31.7476	37.2805	37.2805	33.2436	37.2805	1251.91	1310.16	0.1413	0.0315	0.1412	0.0310	32.7776	37.1065
11.0	12.00%	4.66%	16.12%	1.55%	1.6285	1.6748	3.4473	-3.9484	2.4024	-2.5987	0.0681	-0.0002	28.8800	31.8862	37.4091	37.5806	33.2874	37.5806	1255.52	1311.78	0.1407	0.0316	0.1406	0.0310	32.8689	37.3613
11.5	11.97%	4.66%	16.03%	1.55%	1.6323	1.6711	3.3176	-3.9815	2.3643	-2.6703	0.0682	-0.0002	28.9472	32.0760	37.6378	37.5663	33.4261	37.5663	1272.86	1327.92	0.1401	0.0316	0.1400	0.0311	33.0120	37.4801
12.0	11.92%	4.65%	15.92%	1.53%	1.6361	1.6673	2.9837	-4.0698	2.2705	-2.7832	0.0671	-0.0002	29.0143	32.2657	37.9808	37.8093	33.5210	37.8093	1287.92	1343.15	0.1393	0.0314	0.1392	0.0309	33.1624	37.6974
12.5	11.80%	4.67%	15.75%	1.53%	1.6321	1.6713	2.7243	-4.0919	2.1455	-2.9308	0.0674	-0.0002	28.9430	32.4774	38.0666	37.9951	33.6450	37.9951	1295.74	1350.81	0.1379	0.0315	0.1378	0.0310	33.2944	37.8747
13.0	11.69%	4.65%	15.56%	1.53%	1.6319	1.6715	2.7657	-4.1885	2.0717	-3.0329	0.0675	-0.0002	28.9400	32.6233	38.2810	38.0666	33.7910	38.0666	1307.29	1360.79	0.1363	0.0315	0.1362	0.0309	33.4055	37.9803
13.5	11.44%	4.68%	15.29%	1.52%	1.6275	1.6758	2.7850	-4.2465	2.0292	-3.0951	0.0671	-0.0002	28.8624	32.8204	38.4954	38.2095	33.8129	38.2095	1312.81	1365.25	0.1337	0.0315	0.1336	0.0310	33.5169	38.1946
14.0	11.21%	4.64%	14.96%	1.53%	1.6311	1.6722	2.7519	-4.2851	1.9973	-3.1741	0.0681	-0.0002	28.9269	32.9152	38.6383	38.3524	34.0099	38.3524	1329.69	1379.01	0.1308	0.0315	0.1309	0.0308	33.6260	38.2654
14.5	10.85%	4.69%	14.60%	1.52%	1.6349	1.6685	2.7188	-4.4010	1.9652	-3.2620	0.0672	-0.0002	28.9934	33.1123	38.7812	38.2667	34.0172	38.2667	1343.94	1391.30	0.1273	0.0315	0.1273	0.0311	33.7364	38.4307
15.0	10.37%	4.75%	14.12%	1.55%	1.6302	1.6732	2.6691	-4.5473	1.9664	-3.3149	0.0673	-0.0001	28.9096	33.2436	38.9956	38.4954	34.1194	38.4954	1353.20	1401.14	0.1226	0.0319	0.1225	0.0315	33.8783	38.5342
15.5	9.71%	4.67%	13.44%	1.53%	1.6245	1.6788	2.7077	-4.5335	1.9811	-3.3428	0.0669	0.0000	28.8098	33.4042	39.0671	38.5525	34.1924	38.5525	1362.60	1406.10	0.1158	0.0315	0.1158	0.0310	33.9820	38.6283
16.0	9.35%	4.66%	13.02%	1.53%	1.6282	1.6751	2.6829	-4.6990	1.9402	-3.4689	0.0672	0.0000	28.8747	33.3896	39.2814	38.7097	34.2288	38.7097	1365.20	1408.08	0.1118	0.0314	0.1119	0.0309	33.9992	38.7913
16.5	9.09%	4.67%	12.71%	1.52%	1.6326	1.6708	2.6525	-4.7542	1.8775	-3.5677	0.0665	0.0001	28.9520	33.6085	39.4672	38.7240	34.3091	38.7240	1378.18	1420.30	0.1090	0.0314	0.1090	0.0310	34.1026	38.9539
17.0	8.86%	4.71%	12.50%	1.54%	1.6273	1.6760	2.6139	-4.7956	1.8523	-3.6430	0.0675	0.0001	28.8593	33.6815	39.5673	38.7097	34.3383	38.7097	1378.57	1420.42	0.1068	0.0317	0.1068	0.0313	34.1627	39.0647
17.5	8.75%	4.70%	12.49%	1.53%	1.6222	1.6811	2.6415	-4.8757	1.8123	-3.7332	0.0659	0.0002	28.7688	33.7837	39.8103	38.8955	34.3383	38.8955	1381.93	1419.80	0.1062	0.0315	0.1062	0.0311	34.2111	39.1522
18.0	8.75%	4.67%	12.55%	1.54%	1.6271	1.6763	2.6553	-4.9198	1.7881	-3.8010	0.0661	0.0003	28.8549	33.8640	39.8531	38.9241	34.4113	38.9241	1388.31	1427.83	0.1065	0.0315	0.1065	0.0311	34.2678	39.2900
18.5	8.83%	4.63%	12.72%	1.53%	1.6273	1.6760	2.6139	-5.0164	1.7424	-3.9190	0.0656	0.0003	28.8593	33.9734	40.0675	38.9956	34.4113	38.9956	1394.73	1434.09	0.1077	0.0312	0.1078	0.0308	34.3368	39.3816
19.0	9.14%	4.65%	13.11%	1.54%	1.6326	1.6708	2.5532	-5.2178	1.6465	-4.1295	0.0651	0.0004	28.9521	33.9880	40.0961	39.1814	34.4843	39.1814	1404.90	1443.44	0.1113	0.0313	0.1113	0.0309	34.3945	39.4815
19.5	9.58%	4.66%	13.67%	1.57%	1.6286	1.6748	2.4897	-5.5959	1.4539	-4.4954	0.0664	0.0005	28.8811	34.1559	40.2819	39.2100	34.5573	39.2100	1409.65	1446.31	0.1162	0.0316	0.1162	0.0312	34.4704	39.5991
20.0	9.97%	4.71%	14.13%	1.63%	1.6250	1.6784	2.5201	-5.8801	1.3368	-4.6590	0.0670	0.0007	28.8172	34.1924	40.3820	39.2957	34.6010	39.2957	1412.23	1449.34	0.1206	0.0321	0.1205	0.0317	34.5395	39.6891
20.5	10.16%	4.75%	14.48%	1.64%	1.6299	1.6735	2.6001	-5.2924	1.5543	-4.3182	0.0663	0.0008	28.9044	34.3383	40.3534	39.3529	34.6302	39.3529	1423.78	1461.25	0.1234	0.0323	0.1232	0.0319	34.6124	39.7389
21.0	10.55%	4.67%	14.98%	1.63%	1.6346	1.6688	2.7519	-4.9529	1.8938	-3.8420	0.0661	0.0009	28.9880	34.3675	40.5535	39.4101	34.6886	39.4101	1431.78	1467.88	0.1277	0.0319	0.1277	0.0315	34.6474	39.8202
21.5	11.42%	4.61%	15.87%	1.63%	1.6312	1.6722	2.7657	-4.9474	1.9496	-3.7978	0.0660	0.0010	28.9276	34.3018	40.7107	39.4244	34.7397	39.4244	1422.45	1459.82	0.1363	0.0317	0.1364	0.0312	34.6283	39.9657
22.0	12.43%	4.73%	16.97%	1.69%	1.6287	1.6746	2.8291	-4.8977	1.9989	-3.7399	0.0674	0.0012	28.8837	34.3383	40.9537	39.6387	34.6886	39.6387	1419.70	1459.14	0.1469	0.0325	0.1470	0.0321	34.6528	40.0321
22.5	13.18%	4.68%	17.87%	1.71%	1.6335	1.6699	2.9312	-4.8232	2.1378	-3.6028	0.0686	0.0012	28.9686	34.3018	40.9251	39.5673	34.7032	39.5673	1424.40	1460.07	0.1550	0.0325	0.1553	0.0320	34.6334	40.0931
23.0	14.43%	4.59%	19.19%	1.66%	1.6378	1.6655	2.9726	-4.8977	2.1306	-3.6473	0.0670	0.0011	29.0450	34.2215	41.0680	39.6959	34.6886	39.6959	1420.51	1458.87	0.1680	0.0318	0.1681	0.0313	34.6074	40.1955
23.5	16.19%	4.66%	21.02%	1.71%	1.6355	1.6678	3.0278	-4.8370	2.1732	-3.6136	0.0691	0.0012	29.0048	34.2653	41.0680	39.9246	34.7397	39.9246	1417.24	1461.45	0.1858	0.0325	0.1861	0.0318	34.6648	40.3013
24.0	17.47%	4.72%	22.45%	1.74%	1.6364	1.6669	3.0554	-4.8508	2.2365	-3.5664	0.0705	0.0012	29.0206	34.2653	41.2109	39.8531	34.7397	39.8531	1421.46	1461.94	0.1992	0.0330	0.1996	0.0323	34.6719	40.3596
24.5	19.63%	4.58%	24.50%	1.72%	1.6347	1.6686	3.0720	-4.8977	2.2390	-3.5958	0.0702	0.0012	28.9900	34.2799	41.4110	39.9246	34.7178	39.9246	1413.25	1456.25	0.2201	0.0323	0.2206	0.0315	34.6620	40.5143
25.0	21.67%	4.69%	26.58%	1.78%	1.6386	1.6648	3.0830	-4.8232	2.2919	-3.5562	0.0719	0.0013	29.0584	34.3383	41.4253	39.9961	34.7762	39.9961	1416.65	1463.47	0.2407	0.0331	0.2413	0.0323	34.7092	40.6027
25.5	23.59%	4.58%	28.48%	1.76%	1.6416	1.6617	3.1824	-4.8425	2.3466	-3.5579	0.0715	0.0012	29.1127	34.2799	41.6397	40.0389	34.8054	40.0389	1422.76	1463.60	0.2597	0.0325	0.2604	0.0317	34.7010	40.6883
26.0	26.07%	4.49%	30.82%	1.71%	1.6398	1.6635	3.2210	-4.8922	2.3607	-3.5713	0.0702	0.0011	29.0805	34.3383	41.6397	40.0675	34.8127	40.0675	1413.85	1462.96	0.2837	0.0318	0.2844	0.0310	34.7199	40.7503
26.5	28.34%	4.59%	33.07%	1.75%	1.6382	1.6651	3.2486	-4.8205	2.4298	-3.5464	0.0707	0.0011	29.0524	34.3383	41.7540	40.1533	34.8638	40.1533	1419.17	1468.39	0.3064	0.0325	0.3071	0.0317	34.7930	40.8393
27.0	30.29%	4.70%	35.11%	1.78%	1.6410	1.6624	3.3038	-4.8370	2.4827	-3.5324	0.0721	0.0012	29.1010	34.4843	41.8541	40.3534	34.9586	40.3534	1430.51	1479.77	0.3263	0.0332	0.3270	0.0324	34.8746	40.8730
27.5	32.17%	4.65%	36.98%	1.76%	1.6434	1.6600	3.3700	-4.8425	2.5475	-3.5228	0.0723	0.0011	29.1435	34.4551	41.8684	40.3248	35.0389	40.3248	1442.24	1488.38	0.3450	0.0328	0.3458	0.0320	34.9412	40.9455
28.0	34.43%	4.52%	39.08%	1.69%	1.6416	1.6617	3.3728	-4.8232	2.6041	-3.5192	0.0699	0.0010	29.1123	34.5573	41.9970	40.4963	35.2141	40.4963	1448.11	1496.45	0.3668	0.0318	0.3676	0.0311	35.0372	41.0353
28.5	36.60%	4.52%	41.13%	1.72%	1.6400	1.6633	3.4914	-4.8646	2.6486	-3.5375	0.0705	0.0010	29.0842	34.7178	42.1542	40.4391	35.3892	40.4391	1469.26	1517.78	0.3878	0.0320	0.3887	0.0312	35.2398	41.1015
29.0	38.77%	4.42%	43.13%	1.69%	1.6423	1.6611	3.6349	-4.9198	2.7433	-3.4920	0.0692	0.0010	29.1239	34.8857	42.1399	40.4963	35.6519	40.4963	1497.13	1538.01	0.4086	0.0313	0.4095	0.0305	35.3918	41.1060
29.5	40.16%	4.65%	44.63%	1.76%	1.6424	1.6609	3.6901	-4.8508	2.8516	-3.4637	0.0719	0.0011	29.1271	35.0681	42.2114	40.4963	35.7249	40.4963	1513.36	1553.54	0.4232	0.0328	0.4240	0.0321	35.5302	41.1759
30.0	41.75%	4.67%	46.22%	1.78%	1.6444	1.6590	3.8888	-4.8867	3.1282	-3.3497	0.0713	0.0010	29.1617	35.1557	42.2686	40.5535	35.8855	40.5535	1534.32	1569.49	0.4391	0.0330	0.4398	0.0323	35.6647	41.2929
30.5	43.49%	4.53%	48.01%	1.64%	1.6428	1.6606	4.3662	-4.8646	3.2675	-3.3309	0.0696	0.0010	29.1331	34.8857	42.2114	40.7821	35.5425	40.7821	1489.14	1528.70	0.4565	0.0317	0.4575	0.0309	35.3486	41.3414
31.0	45.18%	4.39%	49.58%	1.55%	1.6413	1.6621	4.0765	-4.9640	3.1750	-3.4474	0.0674	0.0009	29.1065	34.7470	42.3829	40.8393	35.2432	40.8393	1458.45	1505.28	0.4728	0.0305	0.4738	0.0297	35.1735	41.3967
31.5	47.00%	4.30%	51.19%	1.53%	1.6432	1.6601	4.0213	-5.0164	3.1744	-3.4967	0.0667	0.0008	29.1408	34.7397	42.7116	40.7821	35.1411	40.7821	1447.62	1496.94	0.4900	0.0300	0.4909	0.0292	35.1094	41.5232
32.0	48.78%	4.34%	52.85%	1.55%	1.6450	1.6583	3.9882	-5.0633	3.1928	-3.5376	0.0669	0.0008	29.1728	34.7178	42.6116	40.7821	35.2141	40.7821	1451.06	1501.65	0.5072	0.0302	0.5082	0.0294	35.1383	41.5427
32.5	50.42%	4.37%	54.43%	1.57%	1.6435	1.6599	3.9937	-5.1682	3.2106	-3.5748	0.0676	0.0009	29.1454	34.8492	42.7116	40.9251	35.2141	40.9251	1451.13	1505.24	0.5233	0.0305	0.5243	0.0297	35.1931	41.6226
33.0	52.03%	4.40%	56.01%	1.56%	1.6420	1.6614	4.0434	-5.1627	3.2331	-3.6166	0.0675	0.0008	29.1192	34.8638	42.8403	40.8965	35.2432	40.8965	1458.25	1507.24	0.5393	0.0306	0.5402	0.0298	35.2366	41.7173
33.5	53.55%	4.43%	57.49%	1.58%	1.6437	1.6596	4.0627	-5.2510	3.2603	-3.6478	0.0684	0.0009	29.1500	34.9221	42.9975	41.0680	35.2505	41.0680	1459.51	1510.98	0.5542	0.0308	0.5552	0.0300	35.2708	41.8168
34.0	55.10%	4.38%	58.95%	1.56%	1.6454	1.6580	4.0765	-5.2951	3.2906	-3.6815	0.0670	0.0009	29.1794	35.0097	43.0118	41.1823	35.3600	41.1823	1467.77	1518.29	0.5693	0.0304	0.5703	0.0297	35.3312	41.8920
34.5	56.52%	4.40%	60.35%	1.57%	1.6439	1.6595	4.1317	-5.3337	3.3259	-3.7236	0.0683	0.0008	29.1530	35.0681	43.1404	41.0680	35.3600	41.0680	1468.86	1519.01	0.5833	0.0307	0.5844	0.0298	35.3601	41.9620
35.0	57.89%	4.40%	61.68%	1.57%	1.6425	1.6609	4.1648	-5.4386	3.3655	-3.7574	0.0674	0.0009	29.1276	34.9805	43.2976	41.2395	35.3600	41.2395	1463.11	1514.15	0.5968	0.0306	0.5978	0.0298	35.3528	42.0989
35.5	59.14%	4.37%	62.86%	1.58%	1.6441	1.6593	4.2420	-5.4579	3.3986	-3.7954	0.0679	0.0009	29.1562	35.0316	43.2833	41.2824	35.3965	41.2824	1469.09	1517.80	0.6089	0.0306	0.6100	0.0297	35.3704	42.0972
36.0	60.00%	4.42%	63.79%	1.56%	1.6441	1.6592	4.2696	-5.5269	3.4264	-3.8332	0.0666	0.0010	29.1572	35.0316	43.4262	41.4253	35.3965	41.4253	1465.39	1518.00	0.6181	0.0306	0.6189	0.0299	35.3894	42.2067
36.5	60.97%	4.43%	64.72%	1.59%	1.6457	1.6577	4.2862	-5.5600	3.4559	-3.8847	0.0679	0.0010	29.1846	35.0389	43.6406	41.4682	35.3600	41.4682	1467.78	1517.16	0.6275	0.0309	0.6285	0.0301	35.3854	42.2977
37.0	62.01%	4.37%	65.71%	1.56%	1.6442	1.6591	4.3524	-5.6235	3.4823	-3.9322	0.0674	0.0010	29.1589	35.1046	43.7121	41.6397	35.4695	41.6397	1467.98	1522.63	0.6377	0.0305	0.6386	0.0297	35.4644	42.4382
37.5	63.02%	4.32%	66.60%	1.56%	1.6428	1.6605	4.2972	-5.6925	3.5130	-3.9818	0.0676	0.0010	29.1336	35.2141	43.6978	41.7540	35.5060	41.7540	1473.06	1526.56	0.6471	0.0302	0.6481	0.0294	35.5190	42.5072
38.0	63.85%	4.37%	67.45%	1.56%	1.6443	1.6590	4.3662	-5.7339	3.5406	-4.0354	0.0660	0.0010	29.1606	35.3235	43.9979	41.9255	35.5789	41.9255	1479.10	1531.28	0.6556	0.0304	0.6565	0.0297	35.5853	42.7497
38.5	64.91%	4.29%	68.36%	1.53%	1.6458	1.6575	4.3745	-5.8029	3.5633	-4.0881	0.0659	0.0010	29.1870	35.4184	43.9265	41.8684	35.5935	41.8684	1490.92	1542.83	0.6655	0.0299	0.6664	0.0291	35.6596	42.6936
39.0	65.83%	4.34%	69.24%	1.56%	1.6444	1.6590	4.3938	-5.8857	3.5935	-4.1401	0.0667	0.0010	29.1618	35.3600	44.0694	41.9255	35.6154	41.9255	1488.34	1540.09	0.6745	0.0303	0.6754	0.0295	35.6619	42.7807
39.5	66.95%	4.28%	70.21%	1.54%	1.6430	1.6604	4.3966	-5.9685	3.6247	-4.1927	0.0655	0.0011	29.1369	35.5060	44.0980	41.9827	35.7395	41.9827	1498.14	1548.40	0.6849	0.0299	0.6858	0.0291	35.7491	42.8321

SR100 Serial No. 60078

Effects of long-term heat exposure on self-conatined self-rescuers

August 31, 2006

Time sec	Exp O2 percent	Exp CO2 percent	Ins O2 percent	Ins CO2 percent	Exp Vol liters	Ins Vol liters	Exp Pk Prs cm H2O	Ins Pk Prs cm H2O	Exp Av Prs cm H2O	Ins Av Prs cm H2O	xp CO2 Pk liters	ns CO2Min liters	VE Stpd liers/min	sWB EndT C	sDB EndT C	kpDB EndT C	pWB EndT C	kpDB EndT C	ExpH2OVapr	InsH2OVapr	uthO2TAv	th CO2TAv	uthO2VAv	th CO2VAv	sWBAvgTp C	sDBAvgTp C
40.0	67.85%	4.31%	71.08%	1.56%	1.6445	1.6589	4.4766	-6.0512	3.6629	-4.2416	0.0673	0.0011	29.1633	35.5789	44.2838	42.0685	35.7249	42.0685	1501.86	1554.02	0.6937	0.0302	0.6947	0.0294	35.7971	42.9174
40.5	68.72%	4.36%	71.93%	1.59%	1.6460	1.6574	4.5290	-6.1340	3.6925	-4.3031	0.0676	0.0012	29.1894	35.6811	44.4982	42.0970	35.7687	42.0970	1504.78	1557.49	0.7024	0.0306	0.7032	0.0298	35.8392	43.0745
41.0	69.63%	4.31%	72.76%	1.57%	1.6445	1.6588	4.5456	-6.1892	3.7300	-4.3482	0.0667	0.0010	29.1645	35.6154	44.4267	42.2114	35.7614	42.2114	1508.53	1558.75	0.7111	0.0302	0.7120	0.0294	35.8590	43.0674
41.5	70.31%	4.33%	73.45%	1.54%	1.6446	1.6588	4.5870	-6.2030	3.7629	-4.3934	0.0651	0.0012	29.1649	35.7249	44.5696	42.0685	35.7979	42.0685	1515.83	1564.22	0.7180	0.0300	0.7188	0.0293	35.9114	43.1186
42.0	71.07%	4.37%	74.17%	1.58%	1.6432	1.6602	4.6174	-6.2665	3.7865	-4.4306	0.0667	0.0011	29.1404	35.8271	44.5553	42.0970	35.8271	42.0970	1519.46	1569.47	0.7254	0.0305	0.7262	0.0298	35.9686	43.1435
42.5	71.77%	4.39%	74.84%	1.62%	1.6446	1.6587	4.6008	-6.2030	3.7729	-4.3851	0.0685	0.0012	29.1654	36.2358	45.0699	42.4258	35.9803	42.4258	1545.11	1594.74	0.7321	0.0309	0.7330	0.0300	36.2156	43.4876
43.0	72.52%	4.35%	75.50%	1.61%	1.6460	1.6573	4.6615	-6.2665	3.8137	-4.4388	0.0684	0.0012	29.1907	36.2649	45.1842	42.5544	36.0898	42.5544	1559.32	1604.52	0.7392	0.0307	0.7401	0.0298	36.3129	43.6816
43.5	73.21%	4.37%	76.15%	1.62%	1.6446	1.6587	4.6974	-6.3134	3.8520	-4.4972	0.0679	0.0011	29.1660	36.3817	45.2843	42.6402	36.1263	42.6402	1565.00	1608.58	0.7459	0.0308	0.7468	0.0299	36.3683	43.7587
44.0	73.90%	4.38%	76.83%	1.61%	1.6432	1.6601	4.7498	-6.4321	3.8859	-4.5606	0.0687	0.0012	29.1414	36.4985	45.3557	42.6116	36.1190	42.6116	1572.59	1614.66	0.7527	0.0308	0.7536	0.0300	36.4376	43.8233
44.5	74.63%	4.32%	77.46%	1.59%	1.6447	1.6587	4.7940	-6.5204	3.9330	-4.6186	0.0668	0.0011	29.1668	36.5642	45.4986	42.7831	36.1993	42.7831	1577.19	1619.63	0.7596	0.0303	0.7605	0.0296	36.4821	43.9272
45.0	75.36%	4.34%	78.13%	1.60%	1.6461	1.6573	4.8823	-6.5756	3.9652	-4.6723	0.0671	0.0011	29.1919	36.6152	45.5844	42.8403	36.2649	42.8403	1585.02	1627.00	0.7665	0.0305	0.7674	0.0297	36.5388	43.9886
45.5	76.13%	4.28%	78.79%	1.61%	1.6447	1.6586	4.9181	-6.6583	4.0095	-4.7305	0.0679	0.0012	29.1673	36.7101	45.6416	42.8545	36.3452	42.8545	1590.44	1629.97	0.7736	0.0303	0.7746	0.0295	36.5809	44.0399
46.0	76.66%	4.38%	79.36%	1.63%	1.6433	1.6600	5.0037	-6.7522	4.0513	-4.7913	0.0685	0.0012	29.1430	36.7904	45.7559	42.8974	36.3233	42.8974	1595.64	1637.97	0.7792	0.0309	0.7801	0.0300	36.6737	44.1613
46.5	77.32%	4.32%	79.95%	1.62%	1.6447	1.6586	5.0699	-6.8239	4.1010	-4.8463	0.0681	0.0012	29.1679	36.8561	46.0703	43.0689	36.4182	43.0689	1606.84	1647.51	0.7854	0.0306	0.7863	0.0297	36.7550	44.2737
47.0	77.66%	4.40%	80.34%	1.64%	1.6447	1.6586	5.0975	-6.8791	4.1368	-4.9063	0.0684	0.0012	29.1680	37.0020	46.0703	43.0689	36.4182	43.0689	1612.62	1656.37	0.7891	0.0310	0.7900	0.0302	36.8319	44.3226
47.5	78.06%	4.38%	80.75%	1.63%	1.6461	1.6572	5.2024	-6.9840	4.1761	-4.9800	0.0684	0.0011	29.1926	37.0823	46.2133	43.0689	36.5569	43.0689	1623.55	1661.73	0.7932	0.0309	0.7941	0.0300	36.8793	44.4304
48.0	78.57%	4.33%	81.19%	1.59%	1.6448	1.6585	5.2355	-7.0585	4.2202	-5.0344	0.0666	0.0012	29.1690	36.8196	46.2847	43.2833	36.1628	43.2833	1580.08	1620.83	0.7980	0.0303	0.7988	0.0296	36.5868	44.5494
48.5	79.13%	4.29%	81.65%	1.59%	1.6434	1.6599	5.2907	-7.1275	4.2612	-5.1041	0.0667	0.0012	29.1450	36.9655	46.5563	43.2976	36.3233	43.2976	1591.92	1631.76	0.8031	0.0302	0.8039	0.0294	36.7032	44.6759
49.0	79.66%	4.31%	82.13%	1.62%	1.6448	1.6585	5.3597	-7.2517	4.3120	-5.1700	0.0688	0.0011	29.1692	37.1115	46.4991	43.4262	36.4182	43.4262	1612.16	1652.60	0.8080	0.0306	0.8090	0.0296	36.8692	44.7623
49.5	80.06%	4.35%	82.52%	1.64%	1.6462	1.6572	5.4121	-7.2931	4.3526	-5.2304	0.0691	0.0012	29.1935	37.1991	46.6706	43.5835	36.5569	43.5835	1622.26	1663.08	0.8119	0.0309	0.8129	0.0300	36.9599	44.8921
50.0	80.53%	4.33%	82.94%	1.65%	1.6448	1.6585	5.4701	-7.3896	4.3935	-5.2919	0.0695	0.0012	29.1692	37.3669	46.6420	43.4977	36.5642	43.4977	1634.63	1674.25	0.8164	0.0309	0.8174	0.0299	37.0608	44.9137
50.5	80.95%	4.38%	83.36%	1.65%	1.6434	1.6599	5.5667	-7.4807	4.4385	-5.3520	0.0683	0.0013	29.1450	37.5202	47.0708	43.5835	36.6736	43.5835	1645.37	1682.93	0.8207	0.0310	0.8216	0.0301	37.1591	45.0481
51.0	81.34%	4.40%	83.73%	1.67%	1.6448	1.6585	5.5667	-7.6104	4.4867	-5.4140	0.0693	0.0013	29.1693	37.6588	47.2137	43.7836	36.7831	43.7836	1657.40	1695.91	0.8244	0.0313	0.8253	0.0304	37.2686	45.1817
51.5	81.75%	4.37%	84.09%	1.64%	1.6462	1.6572	5.6660	-7.7236	4.5420	-5.4906	0.0677	0.0014	29.1936	37.7537	47.2423	43.8693	36.8196	43.8693	1669.20	1707.10	0.8284	0.0309	0.8292	0.0301	37.3651	45.3246
52.0	82.06%	4.36%	84.39%	1.66%	1.6448	1.6585	5.7460	-7.8036	4.5948	-5.5596	0.0681	0.0014	29.1692	37.8778	47.3567	43.9979	36.8926	43.9979	1678.11	1715.11	0.8314	0.0310	0.8322	0.0301	37.4435	45.3666
52.5	82.28%	4.38%	84.59%	1.68%	1.6448	1.6585	5.7874	-7.9278	4.6326	-5.6328	0.0691	0.0014	29.1692	37.9872	47.5710	43.9265	37.0020	43.9265	1686.39	1720.55	0.8335	0.0312	0.8344	0.0303	37.5010	45.4722
53.0	82.47%	4.42%	84.78%	1.69%	1.6434	1.6599	5.8868	-8.0437	4.6808	-5.7135	0.0696	0.0015	29.1449	38.0748	47.7568	44.0980	36.9947	44.0980	1693.39	1726.59	0.8354	0.0314	0.8362	0.0305	37.5846	45.6521
53.5	82.72%	4.37%	84.99%	1.67%	1.6448	1.6585	5.9254	-8.0933	4.7393	-5.7873	0.0679	0.0015	29.1692	38.1697	47.8569	44.2838	37.0750	44.2838	1701.51	1733.93	0.8377	0.0310	0.8385	0.0302	37.6521	45.8047
54.0	82.85%	4.41%	85.12%	1.70%	1.6462	1.6572	6.0192	-8.1651	4.7922	-5.8597	0.0689	0.0016	29.1933	38.3375	47.8712	44.2695	37.2283	44.2695	1722.34	1754.68	0.8391	0.0314	0.8399	0.0305	37.8048	45.8510
54.5	83.00%	4.40%	85.21%	1.73%	1.6448	1.6586	6.0910	-8.2865	4.8497	-5.9454	0.0698	0.0016	29.1686	38.4981	48.0713	44.4267	37.2939	44.4267	1736.45	1767.03	0.8401	0.0316	0.8410	0.0306	37.9318	46.0074
55.0	83.09%	4.43%	85.31%	1.73%	1.6434	1.6600	6.1738	-8.4190	4.9147	-6.0284	0.0703	0.0017	29.1439	38.6294	48.2714	44.5553	37.4034	44.5553	1749.30	1775.43	0.8411	0.0317	0.8420	0.0308	38.0288	46.1623
55.5	83.13%	4.50%	85.36%	1.75%	1.6448	1.6586	6.2704	-8.5487	4.9791	-6.1175	0.0704	0.0018	29.1682	38.7170	48.5715	44.6411	37.5129	44.6411	1759.85	1786.48	0.8417	0.0321	0.8425	0.0313	38.1233	46.3197
56.0	83.26%	4.47%	85.43%	1.76%	1.6461	1.6572	6.3835	-8.6397	5.0450	-6.2105	0.0696	0.0019	29.1926	38.8338	48.6716	44.7269	37.5494	44.7269	1776.43	1802.74	0.8426	0.0320	0.8434	0.0311	38.2418	46.3798
56.5	83.28%	4.48%	85.40%	1.79%	1.6447	1.6586	6.4497	-8.7694	5.1128	-6.2988	0.0703	0.0020	29.1678	38.9724	48.7859	44.8555	37.6223	44.8555	1783.46	1807.47	0.8425	0.0322	0.8434	0.0313	38.3089	46.5232
57.0	83.32%	4.49%	85.42%	1.81%	1.6433	1.6600	6.5380	-8.8936	5.1755	-6.3884	0.0705	0.0021	29.1430	39.1549	48.9002	44.7840	37.6661	44.7840	1794.60	1816.34	0.8429	0.0324	0.8437	0.0315	38.3947	46.5848
57.5	83.27%	4.54%	85.39%	1.83%	1.6447	1.6586	6.6429	-8.9902	5.2505	-6.4646	0.0706	0.0023	29.1672	39.3008	49.1432	44.8555	37.8413	44.8555	1812.93	1835.99	0.8426	0.0327	0.8433	0.0319	38.5461	46.7096
58.0	83.28%	4.56%	85.37%	1.85%	1.6447	1.6587	6.7395	-9.1696	5.3180	-6.5654	0.0704	0.0024	29.1670	39.3738	49.1432	45.0699	37.8413	45.0699	1824.26	1841.58	0.8425	0.0328	0.8432	0.0320	38.6056	46.8385
58.5	83.29%	4.57%	85.33%	1.87%	1.6461	1.6573	6.9133	-9.2800	5.3925	-6.6564	0.0706	0.0025	29.1916	39.5052	49.3576	45.2414	37.9289	45.2414	1837.40	1851.26	0.8424	0.0330	0.8431	0.0322	38.6869	46.9919
59.0	83.20%	4.65%	85.24%	1.92%	1.6447	1.6587	6.9602	-9.4179	5.4634	-6.7617	0.0720	0.0026	29.1666	39.6292	49.5005	45.2128	38.0237	45.2128	1847.46	1862.02	0.8415	0.0336	0.8422	0.0329	38.7916	47.0949
59.5	83.15%	4.65%	85.14%	1.95%	1.6432	1.6601	7.0789	-9.5670	5.5317	-6.8785	0.0721	0.0029	29.1414	39.7679	49.5863	45.4129	38.1040	45.4129	1857.25	1871.14	0.8407	0.0338	0.8415	0.0330	38.8798	47.1671
60.0	83.18%	4.62%	85.12%	1.93%	1.6446	1.6587	7.1672	-9.7491	5.5791	-7.0141	0.0714	0.0030	29.1660	39.9577	49.5720	45.3557	38.2062	45.3557	1873.66	1886.47	0.8408	0.0335	0.8415	0.0328	38.9788	47.1632
60.5	83.01%	4.71%	84.99%	1.97%	1.6460	1.6573	7.2666	-9.8760	5.6187	-7.1768	0.0719	0.0032	29.1907	40.0306	49.7006	45.4701	38.2792	45.4701	1890.76	1899.81	0.8393	0.0342	0.8400	0.0334	39.0867	47.3287
61.0	82.88%	4.75%	84.86%	2.01%	1.6446	1.6588	7.4432	-10.1768	5.6613	-7.3557	0.0728	0.0033	29.1653	40.2496	50.0008	45.6416	38.4251	45.6416	1901.78	1913.00	0.8379	0.0346	0.8387	0.0338	39.2125	47.4646
			12.29%	1.11%		min	1.7860	-12.1913																		
			85.43%	2.00%		max	7.1672	-1.7187																		
			47.84%	1.62%		avg																				

Bag went flat at 7 sec and had to take external breath to reinflate - ignored the inspired value at 7 min use end of life max at 60 min

SR100 Serial No. 60291

Effects of long-term heat exposure on self-conatined self-rescuers

August 31, 2006

Time sec	Exp O2 percent	Exp CO2 percent	Ins O2 percent	Ins CO2 percent	Exp Vol liters	Ins Vol liters	Exp Pk Prs cm H2O	Ins Pk Prs cm H2O	Exp Av Prs cm H2O	Ins Av Prs cm H2O	xp CO2 Pk liters	ns CO2Min liters	VE Stpd liers/min	sWB EndT C	sDB EndT C	pDB EndT C	pWB EndT C	pDB EndT C	ExpH2OVapr	InsH2OVapr	uthO2TAv	th CO2TAv	uthO2VAv	th CO2VAv	sWBAvgTp C	sDBAvgTp C
0.0	0.00%	0.00%	0.00%	0.00%	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.00	0.00	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.5	23.44%	1.13%	23.38%	1.05%	1.9566	1.6460	0.5552	-0.8798	0.1163	-0.2796	0.0132	0.0031	25.5211	23.2379	24.1074	30.3201	29.2006	30.3201	976.50	935.36	0.2094	0.0083	0.2341	0.0109	23.7677	24.8150
1.0	32.30%	0.30%	36.54%	0.51%	1.6348	1.6403	0.7098	-0.8908	0.2722	-0.2772	0.0060	0.0026	28.9923	27.2156	29.6912	29.8056	27.0113	29.8056	974.59	945.32	0.3448	0.0041	0.3442	0.0040	27.0268	29.7322
1.5	71.60%	1.21%	66.41%	0.66%	1.6283	1.6468	2.0344	-18.3314	1.0341	-13.6709	0.0156	0.0011	28.8764	25.8363	29.1338	30.2772	27.4418	30.2772	913.40	944.31	0.6850	0.0091	0.6900	0.0093	26.4816	29.6767
2.0	23.64%	3.26%	27.31%	1.12%	1.6238	1.6513	4.2641	-1.4317	3.0644	-0.4537	0.0449	0.0005	28.7965	31.4192	32.4354	34.3791	34.2507	34.3791	1405.72	1374.91	0.2584	0.0220	0.2548	0.0219	32.6560	33.2655
2.5	25.33%	3.18%	29.77%	0.89%	1.6196	1.6555	3.9109	-2.9191	2.7306	-1.6134	0.0492	-0.0003	28.7221	31.1637	32.3496	34.4220	34.6302	34.4220	1418.78	1395.02	0.2779	0.0210	0.2755	0.0203	32.8847	33.3042
3.0	27.73%	3.76%	31.24%	1.23%	1.6286	1.6466	2.4538	-3.9264	1.8885	-2.7518	0.0693	-0.0004	28.8808	31.3608	32.1495	34.3791	35.3016	34.3791	1472.12	1445.51	0.2946	0.0266	0.2948	0.0249	33.2627	33.2084
3.5	26.35%	4.53%	29.71%	1.54%	1.6259	1.6492	2.3517	-4.0091	1.7469	-2.8518	0.0857	-0.0004	28.8342	31.8935	32.6355	34.6364	35.6884	34.6364	1517.20	1490.51	0.2795	0.0325	0.2803	0.0304	33.7470	33.5303
4.0	24.94%	4.93%	28.40%	1.64%	1.6255	1.6496	2.2965	-4.0229	1.6769	-2.9449	0.0892	-0.0004	28.8264	32.2219	32.9213	34.8508	35.8709	34.8508	1544.97	1517.12	0.2660	0.0349	0.2667	0.0328	34.0389	33.8332
4.5	23.76%	5.07%	27.22%	1.72%	1.6225	1.6526	2.3655	-4.0367	1.7175	-2.9349	0.0932	-0.0004	28.7735	32.6160	33.4072	35.1795	36.1482	35.1795	1573.08	1545.31	0.2539	0.0362	0.2549	0.0339	34.3710	34.1896
5.0	22.65%	5.18%	26.13%	1.79%	1.6245	1.6506	2.3931	-4.0229	1.7607	-2.9402	0.0963	-0.0004	28.8097	33.0977	33.8503	35.4225	36.3087	35.4225	1606.74	1578.89	0.2427	0.0372	0.2439	0.0349	34.7048	34.5509
5.5	21.16%	5.31%	24.84%	1.79%	1.6267	1.6484	2.3876	-4.0919	1.7718	-2.9781	0.0949	-0.0003	28.8483	33.4918	34.4935	35.6369	36.5861	35.6369	1636.84	1608.95	0.2290	0.0376	0.2300	0.0355	34.9967	34.8812
6.0	20.29%	5.13%	23.98%	1.72%	1.6236	1.6515	2.4207	-4.1609	1.7623	-3.0556	0.0912	-0.0004	28.7927	33.9004	34.6364	35.7798	36.6736	35.7798	1661.11	1631.64	0.2203	0.0362	0.2214	0.0342	35.2661	35.2011
6.5	19.68%	5.10%	23.33%	1.71%	1.6203	1.6548	2.5090	-4.2133	1.7795	-3.1275	0.0919	-0.0004	28.7350	34.2215	35.1223	36.2086	36.9072	36.2086	1684.36	1654.42	0.2139	0.0361	0.2150	0.0341	35.5285	35.4796
7.0	19.15%	5.09%	22.83%	1.71%	1.6232	1.6519	2.5173	-4.4093	1.7641	-3.2618	0.0910	-0.0004	28.7859	31.5286	35.2796	36.2086	35.2505	36.2086	1469.30	1421.10	0.2088	0.0360	0.2099	0.0340	33.4582	35.7091
7.5	18.84%	5.03%	22.53%	1.67%	1.6263	1.6489	2.4538	-4.5335	1.6878	-3.3978	0.0891	-0.0004	28.8401	30.0472	35.4654	36.3801	32.8787	36.3801	1181.75	1232.79	0.2058	0.0355	0.2069	0.0335	31.7365	35.7941
8.0	18.60%	5.07%	22.30%	1.70%	1.6234	1.6518	2.3379	-4.6163	1.6294	-3.4752	0.0894	-0.0004	28.7887	30.2150	35.6369	36.4230	32.6233	36.4230	1158.84	1224.06	0.2034	0.0358	0.2045	0.0339	31.6980	35.9305
8.5	18.54%	5.04%	22.24%	1.69%	1.6204	1.6547	2.3214	-4.7763	1.5100	-3.6445	0.0893	-0.0004	28.7362	30.3683	35.7512	36.4944	32.6160	36.4944	1161.39	1228.20	0.2027	0.0356	0.2039	0.0336	31.7924	36.0979
9.0	18.41%	5.07%	22.16%	1.68%	1.6232	1.6519	2.2413	-4.8784	1.3797	-3.9194	0.0882	-0.0003	28.7861	30.5069	36.0656	36.6373	32.6233	36.6373	1168.15	1236.82	0.2018	0.0356	0.2029	0.0338	31.8904	36.2823
9.5	18.36%	5.08%	22.13%	1.69%	1.6232	1.6519	2.2689	-5.8029	1.1314	-4.4028	0.0887	-0.0003	28.7853	30.7624	36.2800	36.8517	32.7693	36.8517	1182.90	1251.28	0.2013	0.0357	0.2025	0.0339	32.0669	36.4726
10.0	18.43%	5.07%	22.12%	1.70%	1.6261	1.6491	2.1889	-13.5297	0.3147	-5.9740	0.0904	-0.0003	28.8366	30.9521	36.4944	37.0089	32.7912	37.0089	1197.18	1264.61	0.2015	0.0358	0.2028	0.0338	32.1975	36.6019
10.5	15.21%	6.94%	19.06%	3.82%	1.6133	1.6618	2.4345	-15.1993	0.6567	-4.5224	0.0857	0.0103	28.6111	32.1125	35.9227	36.5659	33.3531	36.5659	1308.72	1334.37	0.1727	0.0530	0.1714	0.0538	32.8879	36.2505
11.0	17.81%	3.74%	21.63%	0.96%	1.6253	1.6498	4.6174	-3.2420	3.0037	-1.4199	0.0510	0.0004	28.8236	31.6527	35.9227	36.6088	33.1999	36.6088	1288.55	1317.86	0.1981	0.0234	0.1972	0.0235	32.6161	36.1309
11.5	17.84%	4.00%	21.12%	1.35%	1.6231	1.6520	3.2072	-4.2713	2.4373	-2.8974	0.0697	-0.0004	28.7838	31.0178	36.4230	36.9232	32.9152	36.9232	1198.70	1266.43	0.1939	0.0282	0.1948	0.0267	32.2347	36.5899
12.0	16.48%	4.95%	20.22%	1.67%	1.6190	1.6561	3.0389	-4.3017	2.3891	-2.9400	0.0847	-0.0004	28.7123	31.4484	36.7231	37.0661	33.1707	37.0661	1227.43	1290.67	0.1826	0.0347	0.1835	0.0331	32.5364	36.8082
12.5	15.56%	5.08%	19.46%	1.72%	1.6214	1.6537	3.1244	-4.3127	2.4300	-2.9396	0.0861	-0.0002	28.7546	31.7111	36.9946	37.2090	33.2801	37.2090	1251.57	1309.28	0.1743	0.0356	0.1751	0.0340	32.7233	36.9690
13.0	15.25%	5.05%	19.14%	1.65%	1.6244	1.6507	2.9395	-4.4783	2.2771	-3.0886	0.0840	-0.0002	28.8076	31.8279	37.1805	37.3520	33.4918	37.3520	1270.56	1325.18	0.1712	0.0350	0.1720	0.0335	32.8772	37.1257
13.5	15.02%	5.06%	18.85%	1.65%	1.6210	1.6541	2.8071	-4.5197	2.1692	-3.1969	0.0840	-0.0002	28.7474	32.0030	37.2090	37.4234	33.7545	37.4234	1294.04	1343.57	0.1686	0.0351	0.1693	0.0336	33.1132	37.3496
14.0	14.80%	5.02%	18.61%	1.64%	1.6174	1.6577	2.7739	-4.5887	2.0840	-3.2926	0.0835	-0.0001	28.6829	32.3241	37.5806	37.6378	34.1924	37.6378	1328.23	1367.56	0.1662	0.0348	0.1671	0.0333	33.3896	37.5110
14.5	14.45%	5.08%	18.22%	1.67%	1.6204	1.6547	2.7657	-4.6438	2.0393	-3.3618	0.0856	-0.0001	28.7368	32.6233	37.8522	37.7093	34.4478	37.7093	1365.06	1397.67	0.1624	0.0354	0.1633	0.0338	33.6669	37.6681
15.0	14.31%	4.96%	18.02%	1.64%	1.6202	1.6549	2.7105	-4.6852	1.9834	-3.4211	0.0836	-0.0001	28.7323	32.8423	37.9237	37.8522	34.5573	37.8522	1387.11	1414.85	0.1607	0.0346	0.1617	0.0330	33.8485	37.8172
15.5	13.94%	5.05%	17.69%	1.65%	1.6235	1.6516	2.7077	-4.7432	1.9487	-3.4726	0.0833	0.0000	28.7910	32.7912	38.2095	37.9237	34.2215	37.9237	1357.55	1394.78	0.1573	0.0350	0.1581	0.0335	33.6600	37.9199
16.0	13.56%	5.06%	17.31%	1.65%	1.6198	1.6554	2.6967	-4.7818	1.9492	-3.4908	0.0836	0.0000	28.7248	32.7328	38.2095	38.0666	33.9734	38.0666	1333.73	1377.69	0.1536	0.0351	0.1544	0.0336	33.5491	38.0013
16.5	13.06%	5.05%	16.86%	1.66%	1.6156	1.6595	2.6967	-4.6990	1.9585	-3.4685	0.0839	0.0001	28.6509	32.9663	38.2667	38.1523	34.0172	38.1523	1339.31	1382.41	0.1489	0.0350	0.1496	0.0336	33.6447	38.1219
17.0	12.57%	4.97%	16.40%	1.63%	1.6187	1.6564	2.7657	-4.7680	1.9654	-3.4859	0.0807	0.0002	28.7056	33.0247	38.4239	38.2810	34.1194	38.2810	1350.54	1391.84	0.1442	0.0343	0.1449	0.0330	33.7291	38.2569
17.5	12.41%	4.99%	16.28%	1.61%	1.6223	1.6528	2.7298	-4.8094	1.9492	-3.5419	0.0798	0.0003	28.7704	33.0831	38.4954	38.2095	34.1048	38.2095	1356.69	1399.71	0.1428	0.0343	0.1434	0.0330	33.7891	38.3586
18.0	12.48%	4.99%	16.32%	1.64%	1.6185	1.6567	2.7243	-4.9198	1.9227	-3.5886	0.0813	0.0004	28.7019	33.1707	38.7812	38.3524	34.1559	38.3524	1359.88	1401.71	0.1432	0.0346	0.1440	0.0332	33.8580	38.4829
18.5	12.48%	5.05%	16.40%	1.66%	1.6148	1.6603	2.7188	-4.8977	1.9393	-3.5946	0.0812	0.0005	28.6368	33.3458	38.8955	38.4954	34.1924	38.4954	1363.24	1404.47	0.1437	0.0349	0.1444	0.0336	33.9300	38.5929
19.0	12.59%	5.00%	16.52%	1.67%	1.6187	1.6564	2.7243	-4.8784	1.9512	-3.5866	0.0809	0.0005	28.7060	33.3896	39.0671	38.4954	34.2653	38.4954	1371.59	1411.85	0.1448	0.0347	0.1455	0.0334	33.9754	38.6507
19.5	12.59%	5.01%	16.59%	1.67%	1.6225	1.6526	2.7629	-4.8977	1.9670	-3.5782	0.0809	0.0006	28.7731	33.4918	39.1814	38.4382	34.3091	38.4382	1384.43	1423.58	0.1452	0.0347	0.1459	0.0334	34.0661	38.7464
20.0	12.64%	5.02%	16.74%	1.67%	1.6188	1.6563	2.7795	-4.8922	1.9931	-3.5902	0.0799	0.0007	28.7080	33.5720	39.0671	38.7097	34.4113	38.7097	1392.40	1430.91	0.1462	0.0347	0.1469	0.0335	34.1702	38.8107
20.5	12.73%	4.96%	16.84%	1.67%	1.6188	1.6563	2.8209	-4.8922	2.0185	-3.5749	0.0796	0.0008	28.7086	33.6815	39.3529	38.6383	34.5208	38.6383	1405.52	1442.25	0.1472	0.0344	0.1479	0.0331	34.2804	38.8744
21.0	12.80%	4.95%	16.89%	1.71%	1.6151	1.6600	2.8181	-4.8757	2.0426	-3.5593	0.0813	0.0009	28.6431	33.8129	39.4101	38.7240	34.6886	38.7240	1417.88	1450.45	0.1477	0.0347	0.1485	0.0333	34.3967	38.9670
21.5	12.83%	5.01%	17.08%	1.70%	1.6190	1.6561	2.8760	-4.9336	2.0758	-3.5471	0.0797	0.0010	28.7112	33.9369	39.4958	38.8527	34.8492	38.8527	1442.37	1471.65	0.1489	0.0348	0.1496	0.0336	34.5624	39.0336
22.0	13.02%	4.98%	17.29%	1.71%	1.6228	1.6523	2.9174	-4.8646	2.1070	-3.5354	0.0796	0.0011	28.7789	34.1632	39.5244	38.8955	35.1265	38.8955	1470.56	1494.27	0.1509	0.0347	0.1515	0.0335	34.7372	39.0944
22.5	13.24%	4.94%	17.58%	1.70%	1.6192	1.6559	2.9312	-4.8094	2.1415	-3.5150	0.0794	0.0012	28.7156	34.3383	39.7817	38.9241	35.3600	38.9241	1490.94	1508.89	0.1533	0.0345	0.1541	0.0332	34.9059	39.1882
23.0	13.53%	4.97%	17.89%	1.73%	1.6159	1.6592	3.0168	-4.8094	2.1600	-3.5147	0.0800	0.0012	28.6570	34.4843	39.8103	38.9527	35.5060	38.9527	1510.56	1524.62	0.1563	0.0348	0.1571	0.0335	35.0767	39.2503
23.5	14.19%	4.94%	18.52%	1.74%	1.6200	1.6551	2.9726	-4.9198	2.1603	-3.5438	0.0807	0.0013	28.7292	34.6667	39.8531	38.9956	35.6884	38.9956	1536.51	1546.15	0.1625	0.0348	0.1635	0.0334	35.2415	39.3451
24.0	14.97%	5.02%	19.39%	1.75%	1.6240	1.6511	3.0058	-4.8757	2.1589	-3.5620	0.0812	0.0014	28.7997	34.9513	40.1533	39.1242	35.8855	39.1242	1564.16	1570.49	0.1709	0.0352	0.1718	0.0339	35.4289	39.4430
24.5	15.86%	5.05%	20.25%	1.81%	1.6211	1.6540	3.0278	-4.9060	2.1876	-3.5522	0.0831	0.0014	28.7489	35.1411	40.0675	39.0671	36.0533	39.0671	1584.85	1588.02	0.1795	0.0358	0.1805	0.0343	35.6087	39.5129
25.0	16.36%	5.15%	20.88%	1.86%	1.6184	1.6567	3.0720	-4.8867	2.2489	-3.5076	0.0849	0.0016	28.7007	35.3600	40.0961	39.1242	36.2066	39.1242	1608.36	1608.76	0.1851	0.0365	0.1862	0.0351	35.8090	39.5548
25.5	16.80%	5.06%	21.36%	1.86%	1.6219	1.6533	3.0968	-4.8094	2.3060	-3.4781	0.0836	0.0017	28.7621	35.6519	40.2819	39.2814	36.5277	39.2814	1641.30	1638.27	0.1896	0.0361	0.1908	0.0346	36.0351	39.6356
26.0	17.30%	5.10%	21.93%	1.86%	1.6252	1.6500	3.1051	-4.8646	2.3609	-3.4662	0.0845	0.0017	28.8205	35.9730	40.3248	39.4101	36.8196	39.4101	1685.10	1678.64	0.1949	0.0363	0.1962	0.0348	36.3532	39.7605
26.5	18.48%	4.97%	22.95%	1.84%	1.6224	1.6527	3.1382	-4.9198	2.3740	-3.4935	0.0848	0.0017	28.7719	37.1115	40.6392	39.5673	37.5494	39.5673	1791.86	1786.39	0.2056	0.0357	0.2071	0.0340	37.2408	39.8896
27.0	19.63%	5.11%	24.12%	1.88%	1.6198	1.6553	3.1382	-4.9308	2.3875	-3.5010	0.0867	0.0017	28.7252	38.8630	40.6678	39.5816	39.0381	39.5816	2005.20	1991.88	0.2172	0.0366	0.2187	0.0350	38.8316	39.9948
27.5	20.77%	5.11%	25.21%	1.92%	1.6231	1.6520	3.1658	-4.8922	2.4226	-3.4952	0.0895	0.0019	28.7837	39.7387	40.7821	39.7102	39.7387	39.7102	2129.54	2105.60	0.2281	0.0370	0.2299	0.0352	39.6408	40.1009
28.0	21.35%	5.29%	25.94%	2.00%	1.6233	1.6518	3.2348	-4.9336	2.4922	-3.4611	0.0920	0.0020	28.7882	40.1401	40.7821	39.6387	40.0306	39.6387	2174.21	2148.02	0.2347	0.0383	0.2365	0.0364	39.9438	40.1397
28.5	21.91%	5.27%	26.60%	1.98%	1.6263	1.6488	3.3590	-4.9198	2.6017	-3.4183	0.0893	0.0021	28.8412	40.3225	40.8393	39.6959	40.1474	39.6959	2196.58	2169.56	0.2410	0.0380	0.2426	0.0363	40.0757	40.2055
29.0	22.53%	5.20%	27.21%	1.98%	1.6237	1.6514	3.4694	-4.8370	2.7596	-3.3342	0.0886	0.0021	28.7953	40.3225	40.9251	39.7817	40.2131	39.7817	2204.80	2176.64	0.2471	0.0376	0.2487	0.0359	40.1576	40.2679
29.5	23.43%	5.08%	28.17%	1.86%	1.6213	1.6538	3.5908	-4.8867	2.8892	-3.2974	0.0877	0.0020	28.7518	40.4977	41.0680	39.9246	40.2642	39.9246	2211.34	2183.12	0.2561	0.0365	0.2580	0.0347	40.2382	40.3602
30.0	24.75%	5.02%	29.27%	1.88%	1.6244	1.6507	3.5246	-4.9888	2.8416	-3.3359	0.0877	0.0018	28.8072	40.5780	41.0680	39.9246	40.3955	39.9246	2225.80	2198.18	0.2682	0.0363	0.2701	0.0345	40.3281	40.4699
30.5	26.10%	5.09%	30.51%	1.92%	1.6273	1.6478	3.5135	-4.9308	2.8475	-3.3557	0.0892	0.0020	28.8586	40.7020	41.2967	40.0961	40.3809	40.0961	2240.01	2212.32	0.2810	0.0369	0.2830	0.0350	40.4083	40.5416
31.0	27.25%	5.15%	31.74%	1.92%	1.6250	1.6501	3.5384	-5.0026	2.8586	-3.3879	0.0912	0.0019	28.8183	40.6874	41.3538	40.0675	40.4320	40.0675	2246.93	2217.67	0.2928	0.0374	0.2950	0.0354	40.4757	40.6112
31.5	28.40%	5.16%	32.90%	1.92%	1.6229	1.6522	3.5797	-4.9750	2.8770	-3.4005	0.0919	0.0019	28.7804	40.8480	41.4110	40.2104	40.4685	40.2104	2250.51	2221.08	0.3043	0.0374	0.3065	0.0354	40.5288	40.6827
32.0	29.19%	5.26%	33.87%	1.92%	1.6256	1.6495	3.6487	-4.9888	2.9068	-3.4044	0.0911	0.0019	28.8281	40.9064	41.4968	40.2104	40.5050	40.2104	2261.02	2231.78	0.3133	0.0378	0.3153	0.0359	40.5852	40.7441
32.5	30.09%	5.12%	34.72%	1.89%	1.6281	1.6470	3.6239	-5.0302	2.9104	-3.4528	0.0909	0.0019	28.8728	40.0014	41.5254	40.2676	39.9722	40.2676	2187.04	2138.28	0.3218	0.0371	0.3240	0.0350	39.8812	40.7784
33.0	30.96%	5.00%	35.57%	1.84%	1.6267	1.6484	3.6211	-5.0578	2.9212	-3.4818	0.0895	0.0018	28.8481	35.2141	41.4968	40.2104	35.8344	40.2104	1550.35	1568.27	0.3303	0.0362	0.3326	0.0342	35.5992	40.7611
33.5	32.00%	4.90%	36.43%	1.83%	1.6271	1.6480	3.6211	-5.0992	2.9182	-3.5220	0.0879	0.0017	28.8545	34.8857	41.4968	40.2819	35.3235	40.2819	1490.19	1525.85	0.3398	0.0357	0.3421	0.0337	35.2486	40.7930
34.0	33.24%	4.99%	37.58%	1.87%	1.6253	1.6498	3.6349	-5.1627	2.9195	-3.5510	0.0892	0.0018	28.8235	34.8346	41.5254	40.2676	35.1849	40.2676	1471.73	1510.87	0.3519	0.0363	0.3541	0.0343	35.1437	40.8387
34.5	34.54%	5.04%	38.80%	1.92%	1.6276	1.6475	3.6211	-5.2234	2.9373	-3.5729	0.0937	0.0018	28.8637	34.9221	41.7826	40.4248	35.1776	40.4248	1480.25	1518.32	0.3642	0.0370	0.3667	0.0348	35.2018	40.9204
35.0	35.62%	5.20%	39.96%	1.94%	1.6297	1.6454	3.6570	-5.2178	2.9534	-3.5932	0.0927	0.0020	28.9015	35.0097	41.8112	40.3820	35.2724	40.3820	1487.60	1526.88	0.3757	0.0377	0.3779	0.0357	35.2661	40.9779
35.5	37.04%	5.01%	41.18%	1.91%	1.6279	1.6472	3.6625	-5.2372	2.9762	-3.6120	0.0918	0.0020	28.8694	35.0681	41.7826	40.4248	35.3235	40.4248	1493.85	1531.25	0.3887	0.0368	0.3911	0.0346	35.3275	41.0447
36.0	38.06%	5.11%	42.24%	1.95%	1.6262	1.6489	3.7122	-5.2841	2.9939	-3.6313	0.0929	0.0020	28.8389	35.1557	41.9255	40.6106	35.4476	40.6106	1499.43	1538.32	0.3991	0.0375	0.4015	0.0353	35.4092	41.1021
36.5	39.29%	5.01%	43.38%	1.93%	1.6282	1.6469	3.7177	-5.3061	3.0127	-3.6630	0.0939	0.0021	28.8752	35.3235	41.9255	40.6392	35.5789	40.6392	1518.97	1557.84	0.4107	0.0371	0.4133	0.0347	35.5651	41.1651
37.0	40.14%	5.14%	44.34%	1.96%	1.6302	1.6449	3.7453	-5.3613	3.0337	-3.6746	0.0941	0.0022	28.9095	35.4768	42.0399	40.5535	35.7687	40.5535	1545.16	1581.85	0.4199	0.0377	0.4224	0.0355	35.7529	41.2016
37.5	40.64%	5.30%	44.94%	2.05%	1.6284	1.6467	3.7591	-5.3337	3.0480	-3.6844	0.0955	0.0023	28.8775	35.8344	42.0685	40.6392	35.9438	40.6392	1571.32	1605.63	0.4255	0.0389	0.4279	0.0368	35.9613	41.2023
38.0	41.31%	5.15%	45.67%	1.95%	1.6266	1.6485	3.7784	-5.4165	3.0692	-3.7161	0.0940	0.0023	28.8457	35.9438	42.1542	40.5535	36.2358	40.5535	1601.08	1629.59	0.4324	0.0377	0.4349	0.0355	36.1717	41.2140
38.5	41.85%	5.14%	46.11%	2.04%	1.6284	1.6467	3.8971	-5.3889	3.1063	-3.7504	0.1011	0.0022	28.8789	36.1263	42.2114	40.5678	36.3817	40.5678	1623.91	1645.94	0.4366	0.0387	0.4398	0.0359	36.2842	41.1876
39.0	42.38%	5.13%	46.61%	2.04%	1.6285	1.6466	3.8557	-5.4303	3.0966	-3.7773	0.1003	0.0023	28.8793	36.2722	42.2828	40.6392	36.4547	40.6392	1644.03	1663.23	0.4419	0.0386	0.4450	0.0359	36.4258	41.2101
39.5	42.87%	5.21%	47.12%	2.06%	1.6303	1.6448	3.8557	-5.4607	3.1052	-3.7894	0.0988	0.0024	28.9120	36.4985	42.2114	40.6678	36.7320	40.6678	1674.86	1689.77	0.4471	0.0389	0.4499	0.0363	36.6346	41.2960

SR100 Serial No. 60291

Effects of long-term heat exposure on self-conatined self-rescuers

August 31, 2006

Time sec	Exp O2 percent	Exp CO2 percent	Ins O2 percent	Ins CO2 percent	Exp Vol liters	Ins Vol liters	Exp Pk Prs cm H2O	Ins Pk Prs cm H2O	Exp Av Prs cm H2O	Ins Av Prs cm H2O	xp CO2 Pk liters	ns CO2Min liters	VE Stpd liers/min	sWB EndT C	sDB EndT C	xpDB EndT C	pWB EndT C	xpDB EndT C	ExpH2OVapr	InsH2OVapr	uthO2TAv	th CO2TAv	uthO2VAv	th CO2VAv	sWBAvgTp C	sDBAvgTp C
40.0	43.34%	5.25%	47.58%	2.09%	1.6285	1.6466	3.8695	-5.4579	3.1124	-3.8152	0.0999	0.0025	28.8802	36.7466	42.3543	40.5678	36.8926	40.5678	1698.15	1709.66	0.4517	0.0392	0.4546	0.0367	36.8180	41.3748
40.5	43.90%	5.26%	48.04%	2.14%	1.6267	1.6484	3.8888	-5.5380	3.1272	-3.8383	0.1017	0.0026	28.8486	36.9072	42.3829	40.6678	36.9947	40.6678	1717.75	1726.62	0.4567	0.0397	0.4597	0.0370	36.9722	41.4172
41.0	44.57%	5.26%	48.63%	2.14%	1.6286	1.6465	3.9109	-5.6097	3.1336	-3.8748	0.1022	0.0027	28.8815	37.1115	42.4972	40.7107	37.1845	40.7107	1741.28	1748.50	0.4630	0.0397	0.4660	0.0370	37.1322	41.4486
41.5	45.19%	5.32%	49.20%	2.20%	1.6304	1.6447	3.8447	-5.6152	3.1422	-3.9019	0.1028	0.0028	28.9135	37.3742	42.4972	40.7821	37.3742	40.7821	1773.50	1779.69	0.4689	0.0403	0.4719	0.0376	37.3647	41.4949
42.0	45.92%	5.38%	49.86%	2.22%	1.6286	1.6465	3.8971	-5.6235	3.1519	-3.9308	0.1039	0.0030	28.8824	37.6953	42.5687	40.6392	37.5859	40.6392	1807.89	1809.92	0.4760	0.0407	0.4789	0.0380	37.6168	41.5356
42.5	46.76%	5.33%	50.59%	2.20%	1.6269	1.6483	3.9330	-5.6704	3.1662	-3.9523	0.1008	0.0032	28.8508	38.3083	42.6116	40.7821	38.1040	40.7821	1869.48	1870.47	0.4841	0.0401	0.4867	0.0376	38.0983	41.6011
43.0	47.43%	5.44%	51.22%	2.30%	1.6285	1.6466	3.9247	-5.6787	3.1823	-3.9728	0.1054	0.0033	28.8793	40.0306	42.7116	40.9251	39.4468	40.9251	2073.23	2073.10	0.4903	0.0414	0.4932	0.0387	39.5722	41.6816
43.5	47.97%	5.53%	51.76%	2.35%	1.6301	1.6450	3.9440	-5.7035	3.1975	-3.9932	0.1064	0.0035	28.9084	41.4318	42.8974	41.0680	40.6145	41.0680	2279.94	2263.46	0.4958	0.0421	0.4986	0.0394	40.8960	41.8025
44.0	48.51%	5.62%	52.36%	2.34%	1.6282	1.6469	3.9523	-5.7477	3.2122	-4.0079	0.1039	0.0037	28.8743	42.1105	42.9260	41.1395	41.0888	41.1395	2360.45	2338.98	0.5018	0.0423	0.5043	0.0398	41.4343	41.8937
44.5	49.14%	5.60%	52.90%	2.39%	1.6263	1.6488	3.9771	-5.7808	3.2259	-4.0321	0.1052	0.0039	28.8408	42.3951	43.1261	41.2395	41.3442	41.2395	2397.52	2372.10	0.5075	0.0425	0.5102	0.0399	41.6816	41.9603
45.0	49.67%	5.62%	53.44%	2.37%	1.6282	1.6469	4.0075	-5.7891	3.2456	-4.0640	0.1032	0.0041	28.8744	42.5119	43.0689	41.2824	41.4172	41.2824	2421.11	2394.39	0.5131	0.0424	0.5156	0.0400	41.8206	42.0397
45.5	50.36%	5.50%	54.02%	2.35%	1.6282	1.6469	4.0213	-5.8719	3.2573	-4.0865	0.1044	0.0041	28.8751	42.5849	43.1404	41.2109	41.5267	41.2109	2429.48	2402.36	0.5192	0.0418	0.5219	0.0392	41.8746	42.0552
46.0	50.86%	5.54%	54.45%	2.43%	1.6301	1.6450	4.0434	-5.8360	3.2723	-4.0986	0.1080	0.0042	28.9085	42.6871	43.1833	41.2395	41.5194	41.2395	2439.71	2411.65	0.5236	0.0426	0.5265	0.0398	41.9221	42.0939
46.5	51.09%	5.75%	54.87%	2.45%	1.6285	1.6466	4.1179	-5.8995	3.2937	-4.1317	0.1075	0.0045	28.8800	39.0089	43.1404	41.3538	38.6805	41.3538	2030.66	1969.29	0.5272	0.0436	0.5298	0.0410	38.8182	42.0607
47.0	51.82%	5.52%	55.38%	2.41%	1.6276	1.6475	4.0765	-5.9133	3.3128	-4.1553	0.1052	0.0045	28.8648	36.7904	43.2404	41.2395	36.4109	41.2395	1651.74	1671.11	0.5333	0.0423	0.5360	0.0397	36.6299	42.0902
47.5	52.10%	5.70%	55.75%	2.47%	1.6294	1.6457	4.1179	-5.9409	3.3250	-4.1747	0.1074	0.0045	28.8957	36.6006	43.2833	41.2109	36.1628	41.2109	1624.85	1646.71	0.5366	0.0435	0.5393	0.0408	36.4246	42.1081
48.0	52.54%	5.66%	56.11%	2.48%	1.6311	1.6441	4.1317	-6.0126	3.3396	-4.1818	0.1080	0.0047	28.9252	36.5569	43.3548	41.2967	36.1774	41.2967	1621.39	1641.64	0.5406	0.0434	0.5433	0.0407	36.3783	42.1561
48.5	52.78%	5.79%	56.46%	2.47%	1.6294	1.6457	4.1869	-6.0236	3.3515	-4.2082	0.1043	0.0050	28.8965	36.6736	43.3548	41.3538	36.1263	41.3538	1628.35	1649.02	0.5439	0.0436	0.5462	0.0413	36.4635	42.2424
49.0	53.28%	5.68%	56.85%	2.46%	1.6278	1.6473	4.1758	-6.0568	3.3773	-4.2478	0.1054	0.0050	28.8682	36.7612	43.3548	41.3538	36.2358	41.3538	1637.66	1659.49	0.5482	0.0432	0.5507	0.0407	36.5664	42.2872
49.5	53.74%	5.59%	57.24%	2.44%	1.6295	1.6456	4.2145	-6.1202	3.3952	-4.2566	0.1054	0.0049	28.8971	36.9290	43.4977	41.4968	36.3817	41.4968	1656.21	1678.62	0.5523	0.0428	0.5549	0.0402	36.7165	42.3652
50.0	54.06%	5.60%	57.50%	2.48%	1.6311	1.6440	4.2420	-6.0788	3.4109	-4.2859	0.1067	0.0050	28.9256	37.1699	43.6406	41.4682	36.6444	41.4682	1687.34	1709.98	0.5550	0.0431	0.5578	0.0404	36.9551	42.4040
50.5	54.19%	5.69%	57.67%	2.51%	1.6294	1.6457	4.2145	-6.1340	3.4259	-4.2930	0.1050	0.0052	28.8964	37.5129	43.7836	41.6397	36.8196	41.6397	1723.02	1743.80	0.5569	0.0435	0.5593	0.0410	37.2432	42.4848
51.0	54.41%	5.71%	57.88%	2.52%	1.6278	1.6473	4.2862	-6.1671	3.4460	-4.3273	0.1065	0.0053	28.8670	37.8413	43.8121	41.7540	37.1115	41.7540	1754.56	1769.77	0.5588	0.0437	0.5614	0.0411	37.4682	42.5600
51.5	54.46%	5.85%	57.97%	2.59%	1.6294	1.6457	4.3248	-6.2030	3.4646	-4.3478	0.1072	0.0055	28.8954	37.9872	43.8550	41.6397	37.3304	41.6397	1783.85	1797.18	0.5597	0.0447	0.5622	0.0422	37.6743	42.6293
52.0	54.73%	5.77%	58.13%	2.61%	1.6294	1.6458	4.2834	-6.2306	3.4646	-4.3463	0.1085	0.0056	28.8951	38.2062	44.0694	41.7112	37.4399	41.7112	1805.55	1814.63	0.5617	0.0445	0.5643	0.0419	37.8128	42.6704
52.5	54.82%	5.79%	58.25%	2.60%	1.6310	1.6441	4.3524	-6.2554	3.4903	-4.3788	0.1078	0.0056	28.9239	38.5127	44.0980	41.6969	37.6369	41.6969	1834.42	1843.20	0.5628	0.0446	0.5654	0.0420	38.0247	42.7439
53.0	54.92%	5.78%	58.33%	2.59%	1.6293	1.6458	4.3110	-6.3134	3.5078	-4.4013	0.1088	0.0058	28.8944	38.6805	44.0694	41.8541	37.8048	41.8541	1862.09	1867.70	0.5636	0.0445	0.5663	0.0419	38.2352	42.8367
53.5	54.82%	5.88%	58.28%	2.62%	1.6276	1.6475	4.3635	-6.3217	3.5177	-4.4239	0.1079	0.0059	28.8643	38.9506	44.2695	41.9255	38.0164	41.9255	1887.14	1892.71	0.5630	0.0450	0.5655	0.0425	38.4455	42.9073
54.0	55.04%	5.69%	58.32%	2.60%	1.6292	1.6459	4.3800	-6.2858	3.5328	-4.4418	0.1084	0.0059	28.8929	39.2279	44.2838	41.9970	38.2427	41.9970	1922.06	1925.05	0.5642	0.0442	0.5668	0.0415	38.6826	42.9982
54.5	54.88%	5.82%	58.20%	2.64%	1.6309	1.6443	4.4407	-6.3548	3.5432	-4.4497	0.1064	0.0062	28.9218	39.5636	44.3267	41.9827	38.5127	41.9827	1963.21	1966.90	0.5630	0.0448	0.5654	0.0423	38.9814	43.0590
55.0	54.63%	5.95%	58.05%	2.68%	1.6291	1.6460	4.3938	-6.3824	3.5533	-4.4670	0.1073	0.0062	28.8908	40.1401	44.4267	42.1399	39.0454	42.1399	2033.18	2038.02	0.5612	0.0455	0.5634	0.0432	39.5175	43.1419
55.5	54.73%	5.84%	58.01%	2.70%	1.6271	1.6480	4.4407	-6.3769	3.5724	-4.4820	0.1096	0.0062	28.8556	41.8113	44.4982	42.0399	40.3517	42.0399	2243.64	2244.17	0.5611	0.0453	0.5637	0.0427	40.9731	43.2212
56.0	54.36%	6.09%	57.78%	2.78%	1.6285	1.6466	4.4352	-6.4652	3.5770	-4.5156	0.1105	0.0064	28.8807	43.2052	44.7126	42.2828	41.5267	42.2828	2447.82	2434.29	0.5584	0.0468	0.5607	0.0443	42.2351	43.2981
56.5	54.30%	6.03%	57.71%	2.73%	1.6302	1.6449	4.4849	-6.4873	3.5687	-4.5669	0.1083	0.0066	28.9109	43.8255	44.6697	42.3829	42.0740	42.3829	2542.27	2523.69	0.5578	0.0462	0.5600	0.0438	42.8045	43.3846
57.0	54.17%	6.03%	57.56%	2.74%	1.6284	1.6468	4.4904	-6.5204	3.5421	-4.6098	0.1094	0.0067	28.8773	44.1174	44.7840	42.3543	42.2200	42.3543	2578.43	2554.24	0.5563	0.0463	0.5586	0.0438	43.0283	43.4744
57.5	54.02%	6.05%	57.39%	2.76%	1.6283	1.6468	4.4490	-6.6032	3.5249	-4.6735	0.1094	0.0068	28.8767	44.2269	44.9984	42.4258	42.4024	42.4258	2592.07	2567.87	0.5547	0.0466	0.5570	0.0441	43.1239	43.5490
58.0	53.86%	6.01%	57.19%	2.75%	1.6264	1.6487	4.4628	-6.6197	3.5054	-4.7317	0.1095	0.0068	28.8432	44.3218	45.0699	42.6116	42.4827	42.6116	2601.92	2577.42	0.5529	0.0463	0.5552	0.0438	43.2154	43.6506
58.5	53.67%	6.02%	56.99%	2.75%	1.6283	1.6469	4.5318	-6.6859	3.4799	-4.7944	0.1084	0.0067	28.8756	44.4093	45.0699	42.4972	42.3295	42.4972	2611.82	2586.50	0.5510	0.0463	0.5533	0.0439	43.2616	43.7105
59.0	53.53%	5.96%	56.81%	2.73%	1.6308	1.6443	4.4628	-6.7963	3.4462	-4.8795	0.1089	0.0067	28.9205	38.9797	44.9555	42.5544	37.7245	42.5544	1893.97	1872.40	0.5494	0.0460	0.5517	0.0435	38.3573	43.5754
59.5	53.32%	5.97%	56.62%	2.70%	1.6293	1.6458	4.4628	-6.8239	3.4224	-4.9198	0.1081	0.0069	28.8937	38.5711	44.7840	42.3543	37.2575	42.3543	1802.15	1810.48	0.5474	0.0458	0.5497	0.0434	37.8976	43.4635
60.0	53.03%	6.05%	56.31%	2.80%	1.6276	1.6475	4.4739	-6.8736	3.4146	-4.9654	0.1112	0.0067	28.8638	38.5127	44.9555	42.4401	37.2866	42.4401	1800.55	1805.77	0.5443	0.0468	0.5467	0.0442	37.8937	43.5834
60.5	52.79%	6.09%	56.08%	2.80%	1.6292	1.6459	4.4904	-6.9205	3.4077	-5.0296	0.1125	0.0069	28.8928	38.5711	44.9269	42.4972	37.4034	42.4972	1806.41	1812.78	0.5419	0.0471	0.5443	0.0444	37.9357	43.6033
61.0	52.46%	6.12%	55.77%	2.80%	1.6309	1.6442	4.5290	-6.9729	3.3948	-5.0728	0.1102	0.0071	28.9220	38.6003	45.0127	42.4972	37.4326	42.4972	1818.33	1820.68	0.5390	0.0471	0.5412	0.0446	37.9895	43.6599
61.5	52.27%	6.07%	55.51%	2.80%	1.6292	1.6459	4.5180	-6.9895	3.3870	-5.1212	0.1109	0.0071	28.8919	38.6805	45.0699	42.4972	37.3669	42.4972	1821.96	1825.44	0.5366	0.0469	0.5389	0.0444	38.0416	43.6748
62.0	52.01%	6.04%	55.14%	2.84%	1.6275	1.6476	4.5842	-7.0833	3.3845	-5.1820	0.1113	0.0072	28.8616	38.7170	45.1270	42.4972	37.4326	42.4972	1826.37	1824.35	0.5334	0.0470	0.5358	0.0444	38.0520	43.7040
62.5	51.75%	5.96%	54.85%	2.82%	1.6291	1.6460	4.6008	-7.1689	3.3913	-5.2186	0.1111	0.0073	28.8910	38.7535	45.2843	42.7116	37.4764	42.7116	1825.98	1824.98	0.5306	0.0466	0.5330	0.0439	38.0507	43.7587
63.0	51.18%	6.23%	54.41%	2.89%	1.6291	1.6460	4.5732	-7.2241	3.3827	-5.2559	0.1132	0.0075	28.8902	38.8995	45.2843	42.7116	37.4764	42.7116	1831.01	1830.12	0.5257	0.0482	0.5279	0.0456	38.0924	43.7781
63.5	50.85%	6.14%	53.96%	2.92%	1.6307	1.6444	4.6284	-7.2710	3.3896	-5.3010	0.1151	0.0075	28.9197	38.9506	45.3557	42.7831	37.6077	42.7831	1848.80	1845.40	0.5216	0.0481	0.5240	0.0453	38.2005	43.8339
64.0	50.12%	6.42%	53.43%	2.97%	1.6290	1.6461	4.7112	-7.2241	3.5036	-5.2671	0.1125	0.0080	28.8886	39.0819	45.2843	42.7831	37.5859	42.7831	1859.55	1854.54	0.5157	0.0493	0.5177	0.0469	38.2895	43.8775
64.5	49.96%	6.13%	53.04%	2.89%	1.6272	1.6479	4.7167	-7.3482	3.4815	-5.3226	0.1125	0.0080	28.8570	39.2133	45.4701	42.7259	37.6661	42.7259	1865.44	1862.43	0.5128	0.0477	0.5150	0.0451	38.3680	43.9115
65.0	49.43%	6.19%	52.54%	2.91%	1.6289	1.6462	4.7250	-7.3758	3.4695	-5.3753	0.1108	0.0078	28.8868	39.1914	45.4986	42.7831	37.6953	42.7831	1872.91	1869.61	0.5078	0.0479	0.5098	0.0455	38.4133	43.9552
65.5	48.85%	6.25%	51.96%	2.96%	1.6306	1.6445	4.7277	-7.4917	3.4669	-5.4261	0.1140	0.0077	28.9168	39.3300	45.5272	42.7831	37.7537	42.7831	1884.04	1880.51	0.5019	0.0487	0.5041	0.0461	38.4870	44.0091
66.0	48.36%	6.23%	51.46%	2.94%	1.6288	1.6463	4.7940	-7.4862	3.4722	-5.4765	0.1132	0.0082	28.8849	39.5198	45.6416	42.7116	37.7683	42.7116	1895.04	1893.66	0.4969	0.0484	0.4991	0.0459	38.6040	44.0445
66.5	47.67%	6.34%	50.76%	3.04%	1.6269	1.6482	4.8160	-7.5249	3.4823	-5.5135	0.1176	0.0084	28.8518	39.7095	45.6987	42.7831	37.9289	42.7831	1912.35	1916.16	0.4898	0.0497	0.4921	0.0469	38.7910	44.0880
67.0	46.92%	6.41%	50.09%	3.00%	1.6286	1.6465	4.8354	-7.5828	3.4930	-5.5673	0.1142	0.0088	28.8813	40.0306	45.5701	42.8545	38.0602	42.8545	1942.78	1949.89	0.4830	0.0495	0.4850	0.0471	39.0264	44.1199
67.5	46.14%	6.46%	49.25%	3.09%	1.6303	1.6448	4.8712	-7.6352	3.5014	-5.6129	0.1191	0.0090	28.9117	40.3517	45.8702	42.8974	38.1916	42.8974	1970.69	1983.36	0.4745	0.0506	0.4769	0.0478	39.2552	44.1402
68.0	45.36%	6.38%	48.39%	3.08%	1.6284	1.6468	4.9319	-7.6518	3.5207	-5.6556	0.1185	0.0094	28.8774	40.6510	45.9274	42.7831	38.4251	42.7831	2008.94	2021.63	0.4663	0.0501	0.4687	0.0473	39.5527	44.1952
68.5	44.10%	6.58%	47.28%	3.12%	1.6263	1.6488	4.9485	-7.7346	3.5349	-5.6990	0.1172	0.0097	28.8412	41.0523	45.9274	42.9546	38.6878	42.9546	2046.25	2054.97	0.4548	0.0510	0.4569	0.0485	39.8184	44.2794
69.0	42.64%	6.74%	45.88%	3.22%	1.6280	1.6471	5.0009	-7.7760	3.5719	-5.7193	0.1182	0.0103	28.8707	41.3807	45.9274	43.0689	38.8265	43.0689	2083.42	2088.73	0.4405	0.0523	0.4426	0.0498	40.0493	44.3444
69.5	40.62%	6.76%	43.90%	3.29%	1.6297	1.6454	4.9927	-7.8008	3.5880	-5.7466	0.1214	0.0103	28.9014	41.5486	45.9846	43.0689	38.9797	43.0689	2114.44	2117.25	0.4202	0.0531	0.4226	0.0503	40.2426	44.4230
70.0	39.01%	6.36%	42.16%	3.08%	1.6275	1.6476	4.9871	-7.8588	3.5819	-5.8048	0.1141	0.0098	28.8622	41.7456	46.1418	43.1404	39.0454	43.1404	2131.26	2132.20	0.4035	0.0498	0.4059	0.0472	40.3789	44.5199
70.5	37.67%	6.49%	40.81%	3.10%	1.6273	1.6478	5.0423	-7.9140	3.5791	-5.8614	0.1155	0.0100	28.8586	41.9281	46.2133	43.3548	39.2644	43.3548	2143.53	2147.38	0.3903	0.0505	0.3924	0.0479	40.4955	44.5968
71.0	36.34%	6.53%	39.36%	3.16%	1.6249	1.6502	5.0037	-8.0547	3.5732	-5.9446	0.1171	0.0099	28.8166	42.1324	46.3848	43.3548	39.3592	43.3548	2164.83	2172.63	0.3763	0.0511	0.3785	0.0485	40.7087	44.7355
71.5	34.65%	6.77%	37.68%	3.30%	1.6267	1.6484	5.0147	-8.1485	3.5610	-6.0224	0.1241	0.0106	28.8482	42.4389	46.5706	43.4262	39.5563	43.4262	2195.31	2204.37	0.3593	0.0532	0.3617	0.0503	40.9195	44.8174
72.0	33.05%	6.84%	36.04%	3.32%	1.6286	1.6465	5.0368	-8.2092	3.5521	-6.0980	0.1222	0.0113	28.8825	42.7454	46.6706	43.4691	39.6511	43.4691	2223.83	2235.61	0.3432	0.0536	0.3454	0.0508	41.1206	44.8778
72.5	31.31%	6.92%	34.25%	3.40%	1.6261	1.6490	4.9871	-8.2589	3.5448	-6.1715	0.1219	0.0120	28.8375	42.9498	46.7135	43.4977	39.7752	43.4977	2245.92	2259.80	0.3256	0.0544	0.3278	0.0516	41.3165	44.9557
73.0	28.84%	7.19%	31.83%	3.55%	1.6231	1.6520	5.1141	-8.3086	3.5573	-6.2427	0.1261	0.0131	28.7847	43.1833	46.7850	43.5835	39.9139	43.5835	2268.21	2287.08	0.3011	0.0566	0.3033	0.0537	41.5331	45.0052
73.5	26.28%	7.00%	29.26%	3.38%	1.6247	1.6504	5.0699	-8.5073	3.4600	-6.4317	0.1198	0.0130	28.8129	43.3876	46.8564	43.7836	40.0671	43.7836	2294.67	2319.68	0.2756	0.0545	0.2777	0.0519	41.7429	45.0691
74.0	24.12%	6.95%	26.97%	3.33%	1.6268	1.6483	5.0479	-8.6508	3.1685	-6.9225	0.1166	0.0126	28.8496	43.6212	46.8993	43.6406	40.2058	43.6406	2317.51	2344.28	0.2536	0.0538	0.2554	0.0514	41.8951	45.1463
			58.33%	3.82%			5.1141	-1.4317																		
			16.28%	0.89%			2.1889	-15.1993																		
			38.25%	2.23%																						

Bag went flat at 10 min and had to take external breaths to reinflate - ignored the inspired value at 10 min use end of life max at 74 min

Time sec	Exp O2 percent	Exp CO2 percent	Ins O2 percent	Ins CO2 percent	Exp Vol liters	Ins Vol liters	Exp Pk Prs cm H2O	Ins Pk Prs cm H2O	Exp Av Prs cm H2O	Ins Av Prs cm H2O	xp CO2 Pk liters	ns CO2Min liters	VE Stpd liers/min	sWB EndT C	sDB EndT C	xpDB EndT C	pWB EndT C	xpDB EndT C	ExpH2OVapr	InsH2OVapr	uthO2TAv	th CO2TAv	uthO2VAv	th CO2VAv	sWBAvgTp C	sDBAvgTp C
0.0	0.00%	0.00%	0.00%	0.00%	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.00	0.00	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.5	21.72%	0.23%	22.08%	0.18%	1.9579	1.6447	0.5773	-0.8577	0.0995	-0.2360	0.0042	0.0007	25.5435	21.3405	21.8778	28.2620	27.7411	28.2620	858.65	863.63	0.1986	0.0017	0.2190	0.0020	22.3639	22.7528
1.0	21.07%	0.35%	21.54%	0.13%	1.6335	1.6416	0.7208	-0.9901	0.1485	-0.2777	0.0054	0.0005	28.9680	26.6902	27.6903	28.6050	27.8578	28.6050	978.74	982.09	0.2131	0.0025	0.2130	0.0024	27.3007	28.0668
1.5	19.88%	2.10%	23.44%	1.07%	1.6251	1.6500	2.7381	-1.1944	1.8110	-0.2604	0.0258	0.0008	28.8199	28.3176	29.2767	30.7774	29.9596	30.7774	1081.57	1114.38	0.2183	0.0152	0.2166	0.0158	29.2120	29.9906
2.0	19.79%	2.59%	22.24%	0.66%	1.6206	1.6546	4.1537	-2.5576	2.5361	-1.4010	0.0356	-0.0004	28.7390	28.3833	30.1486	32.4925	31.3024	32.4925	1124.32	1156.37	0.2114	0.0165	0.2101	0.0163	30.1075	31.2721
2.5	18.49%	3.69%	21.17%	1.10%	1.6233	1.6518	2.4345	-3.0709	1.5309	-2.1611	0.0551	-0.0005	28.7875	27.6973	30.5631	32.7784	30.9813	32.7784	1059.30	1113.87	0.1991	0.0245	0.1983	0.0239	29.7197	31.6979
3.0	16.33%	4.50%	19.27%	1.39%	1.6253	1.6498	1.9461	-3.1316	1.3947	-2.2783	0.0669	-0.0004	28.8235	27.7703	31.6350	33.3501	31.1273	33.3501	1052.69	1110.94	0.1787	0.0301	0.1780	0.0294	29.8181	32.3981
3.5	14.48%	4.74%	17.63%	1.45%	1.6211	1.6540	1.9240	-3.1537	1.3746	-2.3432	0.0697	-0.0004	28.7486	27.9527	32.2781	33.8503	31.2367	33.8503	1053.97	1111.00	0.1612	0.0316	0.1605	0.0310	29.9668	32.9624
4.0	13.39%	4.76%	16.57%	1.43%	1.6201	1.6550	1.9240	-3.2089	1.3659	-2.4074	0.0675	-0.0004	28.7306	28.0987	32.6355	33.9932	31.3827	33.9932	1058.64	1116.98	0.1504	0.0314	0.1498	0.0309	30.1104	33.3151
4.5	12.01%	4.82%	15.31%	1.46%	1.6148	1.6603	1.9681	-3.2309	1.3976	-2.4049	0.0685	-0.0004	28.6369	28.3833	33.2357	34.6078	31.7987	34.6078	1079.15	1133.51	0.1372	0.0319	0.1366	0.0314	30.4131	33.7471
5.0	11.12%	4.71%	14.44%	1.40%	1.6173	1.6579	1.9102	-3.4020	1.3534	-2.5004	0.0654	-0.0004	28.6805	28.7190	33.7789	34.6364	32.0760	34.6364	1105.80	1154.02	0.1284	0.0309	0.1278	0.0305	30.6878	34.1369
5.5	10.44%	4.75%	13.79%	1.42%	1.6207	1.6544	1.8688	-3.4738	1.3441	-2.5526	0.0668	-0.0004	28.7411	29.1131	34.2648	35.0652	32.3825	35.0652	1140.58	1181.97	0.1217	0.0313	0.1211	0.0309	31.0280	34.5345
6.0	9.60%	4.64%	13.06%	1.39%	1.6153	1.6598	1.9930	-3.4434	1.3820	-2.5569	0.0653	-0.0004	28.6454	29.4852	34.7793	35.4939	32.8058	35.4939	1174.65	1205.85	0.1138	0.0306	0.1133	0.0302	31.3768	34.8795
6.5	9.26%	4.58%	12.74%	1.36%	1.6098	1.6653	2.0123	-3.5952	1.4227	-2.6029	0.0637	-0.0005	28.5477	29.9596	35.1795	35.5797	33.1123	35.5797	1204.01	1228.12	0.1105	0.0301	0.1100	0.0297	31.7073	35.2273
7.0	9.02%	4.61%	12.52%	1.36%	1.6139	1.6612	1.9516	-3.7194	1.3103	-2.7910	0.0637	-0.0004	28.6203	30.3245	35.4939	35.8513	33.4261	35.8513	1239.38	1257.29	0.1082	0.0302	0.1077	0.0298	32.0252	35.5568
7.5	8.85%	4.61%	12.40%	1.35%	1.6183	1.6568	1.9130	-3.8822	1.1489	-3.0754	0.0634	-0.0005	28.6997	30.7186	35.8655	36.0371	33.6085	36.0371	1272.81	1285.54	0.1067	0.0301	0.1063	0.0298	32.3149	35.8326
8.0	8.72%	4.62%	12.26%	1.37%	1.6133	1.6618	1.7860	-9.3903	0.5045	-4.3695	0.0634	-0.0005	28.6107	31.1273	36.2086	36.3515	33.9369	36.3515	1297.68	1307.88	0.1053	0.0302	0.1049	0.0299	32.6178	36.1169
8.5	8.48%	4.98%	11.72%	1.97%	1.6079	1.6672	1.7474	-33.6748	-2.5256	-11.9393	0.0643	0.0028	28.5153	31.7111	35.8655	36.2086	34.1048	36.2086	1339.85	1343.98	0.1018	0.0347	0.1010	0.0347	32.9863	36.0414
9.0	13.01%	3.94%	16.23%	1.49%	1.6185	1.6566	3.5797	-1.6221	2.5164	-0.4910	0.0451	0.0013	28.7022	32.4044	35.4225	35.9227	34.1559	35.9227	1415.01	1402.53	0.1478	0.0263	0.1462	0.0272	33.3642	35.5887
9.5	14.47%	3.25%	17.56%	0.87%	1.6201	1.6551	4.2007	-3.2227	2.5740	-2.0570	0.0462	-0.0005	28.7301	31.4922	36.3515	36.5659	34.3383	36.5659	1353.03	1343.87	0.1600	0.0210	0.1602	0.0206	32.9248	36.2303
10.0	12.86%	4.26%	16.36%	1.33%	1.6227	1.6524	3.3921	-3.2530	2.0173	-2.1824	0.0618	-0.0004	28.7777	32.2073	37.0089	36.8374	34.6594	36.8374	1401.05	1396.83	0.1464	0.0285	0.1461	0.0279	33.4725	36.6945
10.5	11.91%	4.62%	15.75%	1.41%	1.6181	1.6570	3.4418	-3.2640	2.0637	-2.1703	0.0650	-0.0004	28.6957	32.6233	37.2090	36.9946	34.9951	36.9946	1436.53	1427.96	0.1388	0.0306	0.1383	0.0301	33.8335	36.9519
11.0	11.81%	4.57%	15.62%	1.40%	1.6138	1.6613	3.0720	-3.3634	1.9240	-2.2978	0.0656	-0.0004	28.6187	33.1123	37.5235	37.2376	35.3016	37.2376	1473.05	1459.00	0.1374	0.0303	0.1371	0.0298	34.1937	37.2432
11.5	11.67%	4.61%	15.48%	1.41%	1.6174	1.6577	2.6691	-3.4434	1.8020	-2.4045	0.0662	-0.0004	28.6838	33.8640	37.8522	37.4234	35.7614	37.4234	1543.85	1524.56	0.1360	0.0306	0.1358	0.0301	34.7842	37.5329
12.0	11.50%	4.69%	15.35%	1.42%	1.6212	1.6539	2.4538	-3.5400	1.7116	-2.4965	0.0664	-0.0004	28.7499	35.2724	38.2095	37.6378	36.7028	37.6378	1677.78	1652.87	0.1345	0.0310	0.1342	0.0305	35.8693	37.7913
12.5	11.46%	4.61%	15.24%	1.40%	1.6168	1.6583	2.2137	-3.5676	1.6475	-2.5797	0.0659	-0.0004	28.6731	36.3452	38.4954	37.8522	37.5129	37.8522	1791.43	1761.14	0.1337	0.0305	0.1335	0.0301	36.8188	38.0448
13.0	11.26%	4.62%	15.01%	1.41%	1.6122	1.6629	2.2441	-3.5842	1.6321	-2.6197	0.0657	-0.0004	28.5905	37.2283	38.7812	38.0380	38.0748	38.0380	1875.05	1842.72	0.1316	0.0306	0.1313	0.0302	37.5326	38.2710
13.5	11.00%	4.67%	14.75%	1.42%	1.6159	1.6592	2.2689	-3.5676	1.6704	-2.6148	0.0662	-0.0004	28.6563	37.9507	39.0670	38.2810	38.6076	38.2810	1955.83	1920.72	0.1290	0.0310	0.1288	0.0305	38.1269	38.4798
14.0	10.54%	4.70%	14.33%	1.42%	1.6198	1.6553	2.3324	-3.6504	1.7106	-2.6225	0.0656	-0.0003	28.7255	38.2208	39.2386	38.3810	38.8630	38.3810	1999.99	1963.59	0.1247	0.0310	0.1243	0.0306	38.4369	38.6507
14.5	9.88%	4.63%	13.65%	1.40%	1.6144	1.6607	2.3517	-3.6366	1.7275	-2.6350	0.0644	-0.0003	28.6305	38.4981	39.2814	38.4954	38.9724	38.4954	2014.45	1976.49	0.1180	0.0305	0.1177	0.0301	38.5973	38.7656
15.0	9.53%	4.59%	13.25%	1.37%	1.6137	1.6614	2.2965	-3.7470	1.6795	-2.7081	0.0632	-0.0003	28.6181	38.7535	39.5673	38.7097	39.0454	38.7097	2031.58	1994.35	0.1142	0.0301	0.1139	0.0298	38.7567	38.9140
15.5	9.23%	4.61%	12.90%	1.37%	1.6080	1.6671	2.2772	-3.7608	1.6444	-2.7754	0.0636	-0.0002	28.5170	38.9797	39.8674	38.7240	39.2425	38.7240	2044.90	2006.10	0.1109	0.0303	0.1106	0.0299	38.9230	39.1087
16.0	8.99%	4.61%	12.61%	1.39%	1.6123	1.6628	2.2413	-3.8574	1.5906	-2.8611	0.0642	-0.0002	28.5934	39.0819	39.9246	38.9241	39.3373	38.9241	2069.70	2028.08	0.1081	0.0304	0.1080	0.0300	39.0697	39.2884
16.5	8.52%	4.67%	12.23%	1.39%	1.6168	1.6583	2.1779	-3.9815	1.5600	-2.9253	0.0638	-0.0001	28.6728	39.3592	40.3248	39.0670	39.3884	39.0670	2094.46	2053.66	0.1040	0.0306	0.1037	0.0303	39.2381	39.4604
17.0	8.16%	4.54%	11.82%	1.35%	1.6108	1.6644	2.1586	-4.0229	1.5025	-3.0127	0.0627	-0.0001	28.5652	39.5198	40.4963	39.1385	39.6657	39.1385	2105.45	2063.74	0.1001	0.0298	0.0999	0.0294	39.3917	39.6426
17.5	7.98%	4.58%	11.70%	1.35%	1.6047	1.6704	2.1227	-4.0367	1.4916	-3.0414	0.0623	0.0000	28.4581	39.8555	40.6106	39.4101	39.7387	39.4101	2120.42	2079.25	0.0986	0.0299	0.0984	0.0297	39.5846	39.8220
18.0	7.97%	4.56%	11.70%	1.35%	1.6100	1.6651	2.0758	-4.1333	1.3948	-3.2077	0.0620	0.0001	28.5524	40.0306	40.7107	39.4958	39.8482	39.4958	2148.05	2105.64	0.0985	0.0299	0.0984	0.0295	39.7499	40.0092
18.5	8.00%	4.58%	11.80%	1.37%	1.6157	1.6594	2.0344	-6.7743	0.9381	-4.1339	0.0623	0.0001	28.6523	40.2058	41.0680	39.5816	39.9723	39.5816	2172.55	2130.96	0.0992	0.0300	0.0990	0.0297	39.8961	40.1508
19.0	7.98%	5.01%	11.29%	2.15%	1.6102	1.6649	2.0344	-21.5740	-0.9235	-6.1592	0.0632	0.0054	28.5553	39.7752	40.3534	39.4244	39.7387	39.4244	2132.13	2096.80	0.0964	0.0360	0.0964	0.0358	39.6606	39.8314
19.5	13.27%	4.05%	16.48%	1.57%	1.6103	1.6648	5.3128	-2.5907	3.3928	-1.1350	0.0469	0.0018	28.5568	38.5127	39.0671	38.5525	38.8630	38.5525	1993.22	1968.88	0.1495	0.0276	0.1487	0.0281	38.5622	38.6780
20.0	12.21%	4.40%	15.80%	1.46%	1.6177	1.6574	3.6073	-3.7332	2.2159	-2.5287	0.0630	0.0002	28.6881	39.8482	40.5678	39.4244	39.8482	39.4244	2146.57	2107.72	0.1401	0.0297	0.1400	0.0293	39.6610	39.7754
20.5	11.76%	4.69%	15.64%	1.58%	1.6123	1.6628	3.4583	-3.7829	2.1909	-2.5512	0.0676	0.0003	28.5922	40.2058	40.9537	39.5816	40.0598	39.5816	2174.31	2133.66	0.1370	0.0318	0.1370	0.0313	39.9418	40.1135
21.0	11.81%	4.81%	15.85%	1.62%	1.6166	1.6585	3.1520	-3.8436	2.1066	-2.6389	0.0684	0.0004	28.6690	40.4685	41.2109	39.9246	40.2496	39.9246	2207.76	2166.81	0.1384	0.0326	0.1383	0.0321	40.1643	40.3324
21.5	12.06%	4.84%	16.24%	1.63%	1.6210	1.6541	2.9837	-3.8049	2.0882	-2.6544	0.0680	0.0005	28.7477	40.6728	41.4110	39.9246	40.3517	39.9246	2231.78	2189.47	0.1416	0.0327	0.1415	0.0323	40.3010	40.4851
22.0	12.47%	4.81%	16.69%	1.64%	1.6172	1.6579	3.2072	-3.7884	2.1634	-2.6095	0.0684	0.0006	28.6801	40.8334	41.4968	40.1390	40.3590	40.1390	2241.18	2198.87	0.1459	0.0327	0.1458	0.0322	40.4182	40.6042
22.5	12.65%	4.83%	17.08%	1.63%	1.6175	1.6576	3.6211	-3.7608	2.3285	-2.5199	0.0691	0.0006	28.6852	40.8699	41.5682	40.0675	40.5415	40.0675	2250.14	2205.83	0.1486	0.0328	0.1486	0.0323	40.4725	40.6710
23.0	13.04%	4.74%	17.58%	1.58%	1.6140	1.6611	3.5356	-3.7387	2.3640	-2.5196	0.0675	0.0007	28.6235	40.9648	41.8112	40.1533	40.6145	40.1533	2258.36	2215.56	0.1531	0.0320	0.1531	0.0316	40.5863	40.7728
23.5	13.41%	4.70%	18.02%	1.56%	1.6184	1.6567	3.6349	-3.8022	2.3785	-2.5329	0.0667	0.0008	28.7002	41.1618	41.9970	40.2819	40.6874	40.2819	2278.48	2235.62	0.1571	0.0318	0.1572	0.0313	40.7002	40.8986
24.0	14.04%	4.63%	18.64%	1.56%	1.6225	1.6526	3.5687	-3.8270	2.3488	-2.5749	0.0662	0.0008	28.7738	41.2859	42.0399	40.3820	40.8188	40.3820	2300.54	2256.43	0.1633	0.0314	0.1634	0.0309	40.8214	41.0375
24.5	14.93%	4.73%	19.46%	1.64%	1.6193	1.6558	3.7177	-3.8712	2.3195	-2.5992	0.0675	0.0007	28.7171	41.4902	42.2114	40.5678	40.9064	40.5678	2314.44	2270.48	0.1719	0.0323	0.1719	0.0319	40.9651	41.1721
25.0	15.98%	4.79%	20.56%	1.66%	1.6167	1.6585	3.5466	-3.8049	2.3604	-2.6020	0.0699	0.0009	28.6699	41.6070	42.4972	40.5535	40.9648	40.5535	2322.26	2278.79	0.1824	0.0328	0.1827	0.0322	41.0587	41.2606
25.5	16.89%	4.79%	21.64%	1.63%	1.6209	1.6542	3.5384	-3.9126	2.4099	-2.5983	0.0700	0.0009	28.7448	41.7456	42.4972	40.5678	41.0158	40.5678	2340.62	2294.88	0.1922	0.0327	0.1926	0.0321	41.1408	41.3647
26.0	17.92%	4.69%	22.63%	1.62%	1.6246	1.6505	3.5797	-3.9043	2.3914	-2.6382	0.0687	0.0009	28.8106	41.8405	42.6116	40.7821	41.1399	40.7821	2358.00	2313.37	0.2024	0.0322	0.2027	0.0315	41.2428	41.4638
26.5	19.34%	4.68%	23.99%	1.63%	1.6220	1.6531	3.6211	-3.8988	2.3919	-2.6554	0.0687	0.0008	28.7642	41.9646	42.8545	40.8536	41.1983	40.8536	2367.27	2322.71	0.2163	0.0322	0.2167	0.0316	41.3483	41.6024
27.0	20.79%	4.74%	25.49%	1.64%	1.6197	1.6554	3.5135	-3.9705	2.4059	-2.6760	0.0702	0.0008	28.7247	42.1032	42.7831	41.0108	41.3734	41.0108	2378.12	2334.42	0.2309	0.0326	0.2314	0.0319	41.4592	41.6869
27.5	22.17%	4.72%	26.95%	1.63%	1.6234	1.6518	3.5108	-3.9401	2.4474	-2.6748	0.0715	0.0008	28.7886	42.1105	42.9260	40.9965	41.3442	40.9965	2392.99	2347.72	0.2449	0.0325	0.2456	0.0317	41.5228	41.7616
28.0	23.21%	4.66%	28.04%	1.62%	1.6237	1.6514	3.4694	-3.9539	2.4497	-2.7058	0.0714	0.0008	28.7946	42.1835	42.9975	40.9251	41.3807	40.9251	2401.93	2357.08	0.2554	0.0323	0.2562	0.0314	41.5898	41.8230
28.5	24.90%	4.57%	29.59%	1.60%	1.6268	1.6483	3.4804	-4.0147	2.4347	-2.7440	0.0697	0.0007	28.8499	42.3368	43.1833	41.0680	41.5486	41.0680	2425.09	2378.99	0.2717	0.0316	0.2725	0.0308	41.7190	41.9348
29.0	26.66%	4.68%	31.29%	1.63%	1.6246	1.6505	3.4832	-4.0229	2.4566	-2.7522	0.0714	0.0008	28.8104	42.5484	43.3548	41.3538	41.5997	41.3538	2436.42	2390.21	0.2890	0.0324	0.2898	0.0316	41.8290	42.0482
29.5	28.34%	4.73%	33.03%	1.64%	1.6226	1.6525	3.1934	-4.0257	2.4939	-2.7647	0.0722	0.0007	28.7747	42.5703	43.3548	41.2967	41.7237	41.2967	2442.14	2396.04	0.3060	0.0327	0.3069	0.0319	41.8954	42.1144
30.0	29.80%	4.73%	34.60%	1.61%	1.6255	1.6497	3.4970	-4.0367	2.5198	-2.7826	0.0718	0.0008	28.8260	42.6214	43.2833	41.2824	41.6726	41.2824	2453.09	2405.18	0.3211	0.0325	0.3220	0.0317	41.9333	42.1609
30.5	31.20%	4.61%	36.00%	1.57%	1.6281	1.6470	3.3921	-4.0809	2.5420	-2.8085	0.0711	0.0006	28.8725	42.6871	43.4119	41.4682	41.8113	41.4682	2463.61	2415.79	0.3351	0.0318	0.3360	0.0309	41.9868	42.2362
31.0	32.87%	4.42%	37.50%	1.51%	1.6259	1.6492	3.3728	-4.1333	2.5311	-2.8506	0.0673	0.0007	28.8345	42.8403	43.6406	41.6397	41.9281	41.6397	2475.60	2428.24	0.3511	0.0304	0.3519	0.0297	42.1050	42.3644
31.5	34.69%	4.51%	39.14%	1.57%	1.6240	1.6511	3.2265	-4.1913	2.5450	-2.8832	0.0691	0.0006	28.8005	43.0082	43.8121	41.6397	41.9573	41.6397	2487.43	2438.96	0.3683	0.0312	0.3692	0.0304	42.2096	42.4904
32.0	36.52%	4.53%	40.93%	1.55%	1.6266	1.6485	3.2486	-4.2161	2.5664	-2.9015	0.0692	0.0006	28.8457	43.0957	43.9979	41.7826	42.0375	41.7826	2503.43	2455.66	0.3864	0.0312	0.3873	0.0304	42.3077	42.6060
32.5	38.25%	4.56%	42.62%	1.56%	1.6289	1.6462	3.2596	-4.2244	2.5912	-2.9265	0.0694	0.0007	28.8877	43.2125	43.9837	41.7540	42.1032	41.7540	2517.53	2469.52	0.4034	0.0314	0.4043	0.0306	42.3844	42.6892
33.0	39.77%	4.63%	44.21%	1.57%	1.6270	1.6481	3.2900	-4.2713	2.6136	-2.9540	0.0697	0.0007	28.8529	43.3512	44.1409	41.7112	42.1835	41.7112	2525.70	2475.83	0.4191	0.0317	0.4199	0.0310	42.4497	42.7318
33.5	41.03%	4.66%	45.48%	1.56%	1.6271	1.6480	3.3728	-4.3127	2.6425	-2.9708	0.0697	0.0007	28.8558	43.4606	44.1409	41.9255	42.1105	41.9255	2535.16	2487.13	0.4318	0.0318	0.4325	0.0311	42.5302	42.8071
34.0	42.27%	4.56%	46.73%	1.56%	1.6252	1.6499	3.3259	-4.3348	2.6686	-2.9947	0.0700	0.0007	28.8218	43.5336	44.2695	41.8684	42.2492	41.8684	2545.84	2494.66	0.4441	0.0315	0.4450	0.0306	42.6090	42.8993
34.5	43.45%	4.53%	47.89%	1.54%	1.6274	1.6477	3.3866	-4.3403	2.6927	-3.0212	0.0684	0.0007	28.8608	43.6066	44.4267	41.9970	42.3659	41.9970	2558.29	2509.41	0.4560	0.0311	0.4567	0.0303	42.6936	42.9936
35.0	44.54%	4.56%	49.00%	1.54%	1.6295	1.6456	3.3921	-4.4231	2.7061	-3.0567	0.0691	0.0007	28.8979	43.7671	44.4410	42.0399	42.3951	42.0399	2572.55	2522.47	0.4669	0.0313	0.4677	0.0305	42.7639	43.0552
35.5	46.00%	4.42%	50.27%	1.51%	1.6276	1.6475	3.3866	-4.4645	2.7125	-3.1045	0.0665	0.0006	28.8643	43.8255	44.7126	42.2114	42.4754	42.2114	2581.24	2530.26	0.4806	0.0304	0.4814	0.0296	42.8439	43.1505
36.0	47.64%	4.35%	51.70%	1.49%	1.6258	1.6493	3.3479	-4.5003	2.7242	-3.1384	0.0662	0.0006	28.8319	43.9423	44.7840	42.3257	42.5119	42.3257	2588.86	2538.41	0.4959	0.0300	0.4967	0.0292	42.9206	43.2044
36.5	49.00%	4.53%	53.07%	1.54%	1.6279	1.6472	3.4004	-4.5335	2.7529	-3.1684	0.0682	0.0006	28.8690	44.0080	44.8555	42.2114	42.5484	42.2114	2604.35	2552.59	0.5096	0.0311	0.5104	0.0304	43.0018	43.3012
37.0	50.48%	4.55%	54.46%	1.56%	1.6299	1.6452	3.4473	-4.5887	2.7719	-3.2084	0.0685	0.0006	28.9046	44.1174	44.7840	42.3829	42.6579	42.3829	2621.76	2570.00	0.5239	0.0313	0.5247	0.0305	43.1024	43.3889
37.5	51.93%	4.53%	55.84%	1.55%	1.6281	1.6470	3.4832	-4.5887	2.8007	-3.2460	0.0676	0.0005	28.8724	44.2634	44.9269	42.3543	42.6943	42.3543	2626.24	2578.07	0.5382	0.0311	0.5389	0.0304	43.1818	43.4744
38.0	53.28%	4.57%	57.18%	1.54%	1.6263	1.6488	3.5135	-4.6880	2.8226	-3.2860	0.0675	0.0006	28.8405	44.4093	45.1842	42.4972	42.8330	42.4972	2645.21	2594.13	0.5516	0.0312	0.5523	0.0305	43.3119	43.5648
38.5	54.63%	4.54%	58.44%	1.57%	1.6282	1.6469	3.5246	-4.7404	2.8543	-3.3146	0.0686	0.0005	28.8754	44.5553	45.1413	42.4972	42.8038	42.4972	2663.01	2610.02	0.5645	0.0313	0.5653	0.0305	43.4024	43.6523
39.0	55.69%	4.58%	59.52%	1.55%	1.6283	1.6468	3.5659	-4.8094	2.8869	-3.3426	0.0678	0.0006	28.8765	44.6283	45.2128	42.5687	42.9498	42.5687	2672.83	2621.92	0.5754	0.0313	0.5760	0.0307	43.4833	43.7113
39.5	57.00%	4.47%	60.70%	1.52%	1.6302	1.6449	3.6018	-4.7873	2.9174	-3.3875	0.0672	0.0006	28.9101	44.7596	45.4129	42.4972	42.9206	42.4972	2688.29	2634.73	0.5877	0.0307	0.5885	0.0299	43.5530	43.7866

SR100 Serial No. 60334 | Effects of long-term high-heat exposure on self-conatined self-rescuers | August 31, 2006

Time sec	Exp O2 percent	Exp CO2 percent	Ins O2 percent	Ins CO2 percent	Exp Vol liters	Ins Vol liters	Exp Pk Prs cm H2O	Ins Pk Prs cm H2O	Exp Av Prs cm H2O	Ins Av Prs cm H2O	xp CO2 Pk liters	ns CO2Min liters	VE Stpd liers/min	sWB EndT C	sDB EndT C	kpDB EndT C	pWB EndT C	kpDB EndT C	ExpH2OVapr	InsH2OVapr	uthO2TAv	th CO2TAv	uthO2VAv	th CO2VAv	sWBAvgTp C	sDBAvgTp C
40.0	58.14%	4.53%	61.86%	1.56%	1.6266	1.6485	3.6460	-4.8867	2.9490	-3.4185	0.0689	0.0005	28.8463	44.8472	45.5844	42.7259	43.0373	42.7259	2693.94	2639.64	0.5992	0.0312	0.6000	0.0304	43.6326	43.8941
40.5	59.02%	4.61%	62.79%	1.57%	1.6285	1.6466	3.7315	-4.8922	3.0015	-3.4530	0.0688	0.0006	28.8796	44.9932	45.6416	42.9260	43.0957	42.9260	2708.88	2654.20	0.6084	0.0316	0.6091	0.0309	43.7149	43.9847
41.0	59.72%	4.55%	63.49%	1.55%	1.6285	1.6466	3.7867	-4.9750	3.0258	-3.4806	0.0692	0.0006	28.8801	45.0661	45.6416	42.8545	43.1322	42.8545	2719.23	2665.02	0.6153	0.0313	0.6160	0.0305	43.7899	44.0531
41.5	60.34%	4.55%	64.11%	1.55%	1.6303	1.6448	3.8116	-5.0412	3.0623	-3.5240	0.0687	0.0005	28.9125	45.2267	45.8131	42.8974	43.2417	42.8974	2735.66	2680.96	0.6215	0.0313	0.6223	0.0305	43.8792	44.1334
42.0	60.94%	4.53%	64.70%	1.55%	1.6285	1.6466	3.8143	-5.1268	3.0918	-3.5595	0.0679	0.0004	28.8807	45.3216	45.9274	42.9975	43.2417	42.9975	2744.51	2691.45	0.6276	0.0311	0.6282	0.0304	43.9723	44.2208
42.5	61.67%	4.45%	65.37%	1.48%	1.6268	1.6483	3.9219	-5.1958	3.1347	-3.6296	0.0667	0.0006	28.8492	45.3727	45.9274	43.1261	43.3001	43.1261	2751.75	2695.16	0.6345	0.0304	0.6352	0.0296	44.0172	44.2546
43.0	62.25%	4.47%	65.89%	1.51%	1.6286	1.6465	3.9109	-5.2096	3.1523	-3.6552	0.0668	0.0005	28.8815	45.5040	45.9989	42.9975	43.3512	42.9975	2767.57	2714.56	0.6401	0.0306	0.6407	0.0299	44.1194	44.2690
43.5	62.87%	4.44%	66.46%	1.49%	1.6304	1.6447	3.8888	-5.2178	3.1883	-3.6865	0.0668	0.0005	28.9134	45.6062	46.0989	43.1261	43.3876	43.1261	2780.96	2728.33	0.6460	0.0304	0.6466	0.0296	44.1962	44.3627
44.0	63.42%	4.46%	66.99%	1.48%	1.6286	1.6465	3.9937	-5.2924	3.2178	-3.7350	0.0657	0.0005	28.8819	45.7594	46.2847	43.2833	43.4606	43.2833	2792.99	2739.98	0.6515	0.0303	0.6521	0.0297	44.2967	44.4609
44.5	64.12%	4.41%	67.58%	1.47%	1.6268	1.6483	3.9661	-5.3393	3.2396	-3.7754	0.0649	0.0005	28.8505	45.8397	46.3848	43.0689	43.5336	43.0689	2804.68	2750.02	0.6579	0.0300	0.6585	0.0294	44.3869	44.5528
45.0	64.75%	4.43%	68.14%	1.50%	1.6286	1.6465	4.0213	-5.4165	3.2727	-3.8155	0.0666	0.0006	28.8825	45.9784	46.4991	43.3548	43.6796	43.3548	2823.04	2767.23	0.6638	0.0304	0.6645	0.0297	44.4863	44.6690
45.5	65.40%	4.43%	68.74%	1.50%	1.6304	1.6447	4.0434	-5.4717	3.2972	-3.8682	0.0659	0.0006	28.9143	46.1608	46.6706	43.3548	43.7087	43.3548	2837.39	2781.20	0.6701	0.0303	0.6707	0.0296	44.5617	44.7504
46.0	66.23%	4.40%	69.45%	1.51%	1.6287	1.6464	4.0903	-5.5407	3.3208	-3.9209	0.0664	0.0006	28.8830	46.1973	46.7850	43.6406	43.7890	43.6406	2847.95	2793.55	0.6777	0.0303	0.6784	0.0295	44.6672	44.8625
46.5	66.91%	4.44%	70.12%	1.49%	1.6287	1.6464	4.0765	-5.5821	3.3406	-3.9733	0.0658	0.0005	28.8833	46.3433	46.8564	43.6406	43.8985	43.6406	2860.48	2807.47	0.6845	0.0303	0.6851	0.0297	44.7608	44.9487
47.0	67.60%	4.47%	70.76%	1.54%	1.6269	1.6482	4.1096	-5.6483	3.3719	-4.0150	0.0684	0.0006	28.8522	46.5695	47.0136	43.7550	43.8839	43.7550	2871.16	2816.67	0.6910	0.0308	0.6918	0.0301	44.8463	45.0543
47.5	68.35%	4.47%	71.45%	1.52%	1.6287	1.6464	4.1731	-5.7063	3.4036	-4.0559	0.0669	0.0006	28.8839	46.6717	47.0708	43.7121	43.9715	43.7121	2890.30	2834.37	0.6983	0.0307	0.6990	0.0300	44.9440	45.1436
48.0	69.09%	4.44%	72.12%	1.53%	1.6305	1.6446	4.2200	-5.7698	3.4375	-4.0982	0.0673	0.0006	28.9154	46.8030	47.2423	43.8121	44.0590	43.8121	2906.91	2851.57	0.7053	0.0306	0.7061	0.0298	45.0376	45.2277
48.5	69.70%	4.49%	72.72%	1.53%	1.6287	1.6464	4.2283	-5.8305	3.4665	-4.1426	0.0669	0.0006	28.8843	46.8906	47.2852	43.8550	44.0809	43.8550	2917.97	2862.02	0.7116	0.0307	0.7121	0.0301	45.1285	45.3200
49.0	70.37%	4.47%	73.38%	1.50%	1.6270	1.6481	4.2752	-5.8801	3.5048	-4.1885	0.0664	0.0005	28.8536	47.0366	47.4710	43.9265	44.2050	43.9265	2927.84	2872.81	0.7182	0.0305	0.7188	0.0299	45.2229	45.4278
49.5	70.93%	4.49%	73.89%	1.53%	1.6288	1.6463	4.3248	-5.9685	3.5385	-4.2434	0.0680	0.0005	28.8853	47.1460	47.5710	43.9979	44.2634	43.9979	2948.11	2891.00	0.7234	0.0309	0.7241	0.0301	45.3240	45.5336
50.0	71.49%	4.48%	74.42%	1.52%	1.6306	1.6445	4.3745	-6.0236	3.5793	-4.2899	0.0667	0.0006	28.9166	47.3577	47.9284	44.1552	44.2926	44.1552	2967.41	2910.66	0.7290	0.0307	0.7296	0.0300	45.4333	45.6397
50.5	72.13%	4.41%	74.97%	1.53%	1.6288	1.6463	4.4214	-6.0926	3.6160	-4.3338	0.0683	0.0005	28.8860	47.4015	47.8569	44.2123	44.4458	44.2123	2980.76	2922.64	0.7347	0.0305	0.7355	0.0297	45.5326	45.7355
51.0	72.63%	4.44%	75.46%	1.52%	1.6271	1.6480	4.4518	-6.1671	3.6481	-4.3829	0.0667	0.0005	28.8556	47.5912	47.9855	44.2123	44.4969	44.2123	2993.04	2934.97	0.7398	0.0305	0.7404	0.0298	45.6367	45.8572
51.5	73.09%	4.47%	75.92%	1.54%	1.6289	1.6462	4.5456	-6.2444	3.6736	-4.4351	0.0683	0.0005	28.8869	47.7299	48.1427	44.4267	44.5553	44.4267	3012.55	2953.39	0.7443	0.0308	0.7450	0.0301	45.7377	45.9631
52.0	73.62%	4.40%	76.37%	1.52%	1.6289	1.6462	4.5456	-6.2996	3.7057	-4.4783	0.0669	0.0005	28.8872	47.8758	48.2142	44.4982	44.5918	44.4982	3028.73	2966.85	0.7493	0.0304	0.7500	0.0296	45.8269	46.0610
52.5	74.04%	4.47%	76.78%	1.54%	1.6307	1.6445	4.5842	-6.3548	3.7352	-4.5161	0.0674	0.0005	28.9181	47.9707	48.3857	44.4410	44.6429	44.4410	3047.02	2986.88	0.7535	0.0308	0.7541	0.0301	45.9362	46.1642
53.0	74.58%	4.43%	77.25%	1.54%	1.6289	1.6462	4.6284	-6.3962	3.7716	-4.5608	0.0671	0.0006	28.8878	48.0583	48.5715	44.5696	44.7742	44.5696	3053.22	2992.79	0.7585	0.0305	0.7591	0.0299	45.9986	46.2544
53.5	75.08%	4.45%	77.71%	1.55%	1.6273	1.6479	4.6505	-6.4652	3.8015	-4.6155	0.0668	0.0005	28.8578	48.1458	48.6716	44.4982	44.7888	44.4982	3059.76	2999.66	0.7633	0.0307	0.7639	0.0300	46.0641	46.3232
54.0	75.59%	4.44%	78.17%	1.55%	1.6290	1.6461	4.7388	-6.5480	3.8341	-4.6563	0.0667	0.0006	28.8886	48.3137	48.7859	44.7126	44.8472	44.7126	3079.24	3017.81	0.7682	0.0306	0.7688	0.0299	46.1640	46.4463
54.5	76.06%	4.44%	78.62%	1.55%	1.6307	1.6444	4.7498	-6.5976	3.8622	-4.7012	0.0673	0.0006	28.9192	48.3794	48.9002	44.8412	44.9056	44.8412	3093.10	3033.84	0.7728	0.0307	0.7734	0.0300	46.2481	46.5395
55.0	76.49%	4.47%	79.02%	1.56%	1.6290	1.6461	4.7940	-6.6446	3.8889	-4.7527	0.0677	0.0006	28.8891	48.4961	48.9288	44.7126	44.8472	44.7126	3105.10	3042.88	0.7769	0.0309	0.7776	0.0301	46.3274	46.6241
55.5	76.88%	4.50%	79.40%	1.58%	1.6273	1.6478	4.8160	-6.7191	3.9239	-4.8005	0.0672	0.0007	28.8592	48.6421	49.1289	44.8412	45.0224	44.8412	3112.69	3049.92	0.7808	0.0311	0.7814	0.0304	46.3957	46.7129
56.0	77.19%	4.54%	79.74%	1.58%	1.6291	1.6461	4.8630	-6.7411	3.9559	-4.8465	0.0677	0.0007	28.8897	48.7151	49.2147	45.0699	45.1026	45.0699	3130.17	3067.15	0.7841	0.0313	0.7846	0.0306	46.4869	46.8137
56.5	77.38%	4.57%	79.92%	1.61%	1.6308	1.6444	4.9375	-6.8405	3.9967	-4.8788	0.0684	0.0007	28.9200	48.8756	49.4148	44.8984	45.0807	44.8984	3142.79	3079.68	0.7859	0.0316	0.7865	0.0309	46.5505	46.9105
57.0	77.57%	4.51%	80.09%	1.61%	1.6291	1.6460	4.9733	-6.9205	4.0345	-4.9319	0.0687	0.0007	28.8899	48.8975	49.5720	45.1413	45.1391	45.1413	3157.60	3093.11	0.7876	0.0313	0.7883	0.0306	46.6543	46.9939
57.5	77.58%	4.53%	80.14%	1.59%	1.6274	1.6477	5.0147	-6.9729	4.0732	-4.9730	0.0671	0.0007	28.8599	49.1092	49.5863	45.1842	45.1975	45.1842	3165.54	3101.33	0.7881	0.0312	0.7886	0.0306	46.7276	47.0695
58.0	77.58%	4.57%	80.09%	1.67%	1.6291	1.6460	5.0561	-7.0309	4.1118	-4.9706	0.0692	0.0008	28.8900	49.1894	49.7864	45.2843	45.2486	45.2843	3184.55	3116.29	0.7878	0.0318	0.7884	0.0312	46.8030	47.1524
58.5	77.52%	4.62%	80.14%	1.61%	1.6291	1.6460	5.1251	-7.0999	4.1365	-5.0864	0.0698	0.0008	28.8900	49.2989	49.8578	45.2843	45.3581	45.2843	3191.54	3127.01	0.7877	0.0319	0.7883	0.0311	46.8696	47.2075
59.0	77.69%	4.51%	80.20%	1.59%	1.6308	1.6443	5.1913	-7.1606	4.1752	-5.1364	0.0684	0.0007	28.9201	49.3719	49.8721	45.3557	45.4310	45.3557	3205.99	3139.37	0.7888	0.0312	0.7894	0.0305	46.9306	47.2976
59.5	77.61%	4.54%	80.07%	1.64%	1.6291	1.6460	5.2355	-7.2517	4.2095	-5.1523	0.0684	0.0008	28.8900	49.4449	50.0008	45.4272	45.5405	45.4272	3211.31	3145.81	0.7879	0.0316	0.7884	0.0309	46.9918	47.3566
60.0	77.55%	4.60%	80.02%	1.67%	1.6274	1.6477	5.2465	-7.3041	4.2503	-5.2079	0.0690	0.0009	28.8599	49.4886	50.0436	45.4129	45.4310	45.4129	3213.91	3147.60	0.7873	0.0320	0.7878	0.0314	47.0217	47.3697
60.5	77.47%	4.60%	79.96%	1.65%	1.6291	1.6460	5.3045	-7.3896	4.2920	-5.2799	0.0689	0.0010	28.8899	49.4813	50.1437	45.3557	45.4675	45.3557	3227.13	3160.06	0.7867	0.0319	0.7872	0.0312	47.0771	47.4025
61.0	77.41%	4.61%	79.84%	1.68%	1.6308	1.6444	5.3790	-7.4807	4.3398	-5.3228	0.0690	0.0010	28.9200	49.6346	50.1008	45.5844	45.4894	45.5844	3241.43	3174.12	0.7858	0.0321	0.7862	0.0314	47.1496	47.5163
61.5	77.36%	4.57%	79.73%	1.68%	1.6291	1.6461	5.4287	-7.5276	4.3821	-5.4017	0.0691	0.0011	28.8899	49.7003	50.2151	45.7130	45.5770	45.7130	3252.41	3183.70	0.7850	0.0319	0.7854	0.0313	47.2278	47.5734
62.0	77.18%	4.60%	79.55%	1.71%	1.6274	1.6478	5.5004	-7.6684	4.4329	-5.4651	0.0695	0.0012	28.8596	49.8389	50.4438	45.6416	45.6646	45.6416	3262.56	3194.58	0.7831	0.0322	0.7836	0.0315	47.3228	47.7171
62.5	76.94%	4.68%	79.31%	1.76%	1.6290	1.6461	5.5667	-7.7346	4.4656	-5.5443	0.0709	0.0012	28.8896	49.9557	50.5010	45.8560	45.7594	45.8560	3277.64	3208.73	0.7807	0.0329	0.7813	0.0322	47.3888	47.7699
63.0	76.79%	4.66%	79.14%	1.74%	1.6307	1.6444	5.6550	-7.8560	4.4869	-5.6633	0.0701	0.0013	28.9197	50.0433	50.6725	45.8131	45.7813	45.8131	3295.62	3226.67	0.7792	0.0326	0.7797	0.0320	47.4808	47.8724
63.5	76.82%	4.58%	79.10%	1.70%	1.6290	1.6461	5.7184	-8.0243	4.4854	-5.8120	0.0676	0.0014	28.8895	50.1382	50.8583	45.9989	45.8689	45.9989	3302.94	3234.34	0.7792	0.0320	0.7796	0.0314	47.5574	48.0161
64.0	76.72%	4.67%	78.98%	1.76%	1.6273	1.6478	5.8095	-8.1541	4.4819	-5.9602	0.0702	0.0015	28.8592	50.2768	50.9584	46.0418	45.8981	46.0418	3312.19	3243.17	0.7781	0.0328	0.7785	0.0322	47.6363	48.1210
64.5	76.74%	4.65%	78.97%	1.73%	1.6290	1.6461	5.9116	-8.3693	4.5053	-6.0968	0.0677	0.0016	28.8894	50.3936	51.1442	45.9989	45.9419	45.9989	3327.14	3256.23	0.7782	0.0324	0.7785	0.0319	47.6997	48.2165
65.0	76.62%	4.75%	78.86%	1.78%	1.6290	1.6461	6.0910	-8.4935	4.5803	-6.2366	0.0704	0.0017	28.8894	50.4666	51.1442	46.2133	45.9419	46.2133	3336.07	3264.81	0.7771	0.0332	0.7774	0.0327	47.7553	48.2934
65.5	76.72%	4.63%	78.83%	1.77%	1.6307	1.6444	6.2400	-8.6839	4.6230	-6.3677	0.0695	0.0017	28.9196	50.4811	51.3014	46.3276	46.0441	46.3276	3347.16	3277.14	0.7773	0.0326	0.7778	0.0320	47.8124	48.3702
66.0	76.55%	4.73%	78.72%	1.82%	1.6290	1.6461	6.3255	-8.8522	4.6546	-6.5390	0.0716	0.0019	28.8893	50.6125	51.2871	46.3562	46.0514	46.3562	3354.80	3284.78	0.7758	0.0335	0.7764	0.0328	47.8830	48.4620
66.5	76.39%	4.80%	78.58%	1.81%	1.6273	1.6478	6.4276	-9.1034	4.7349	-6.6799	0.0701	0.0022	28.8590	50.5395	51.3014	46.2704	46.0149	46.2704	3355.33	3277.65	0.7746	0.0336	0.7749	0.0331	47.8587	48.4261
67.0	76.37%	4.77%	78.47%	1.83%	1.6290	1.6461	6.4911	-9.3076	4.7781	-6.8446	0.0705	0.0023	28.8892	50.6855	51.6444	46.4991	46.1608	46.4991	3367.02	3296.66	0.7738	0.0336	0.7742	0.0330	47.9623	48.5956
67.5	76.26%	4.82%	78.37%	1.84%	1.6307	1.6444	6.6153	-9.5118	4.8537	-7.0232	0.0701	0.0024	28.9194	50.7731	51.7016	46.4991	46.1024	46.4991	3384.97	3312.28	0.7728	0.0339	0.7732	0.0333	48.0377	48.6790
68.0	76.07%	4.90%	78.17%	1.88%	1.6290	1.6461	6.7533	-9.6663	4.9407	-7.2040	0.0716	0.0027	28.8890	50.9409	51.7873	46.5706	46.1973	46.5706	3389.26	3319.12	0.7708	0.0345	0.7712	0.0339	48.1015	48.7501
68.5	75.82%	4.94%	77.91%	1.91%	1.6273	1.6478	6.9023	-9.9423	5.0347	-7.3709	0.0712	0.0028	28.8586	50.8606	51.8159	46.5563	46.2192	46.5563	3391.76	3319.41	0.7683	0.0347	0.7686	0.0342	48.1287	48.8120
			80.20%	2.15%			6.9023	-1.6221																		
			11.29%	0.66%			1.7474	-33.6748																		
			46.80%	1.54%																						

Bag went flat at 8 min and had to take external breaths to reinflate - ignored the inspired value at 8 min use end of life max at 68.5 min

SR100 Serial No. 60450

Effects of long-term heat exposure on self-contained self-rescuers

August 31, 2006

Time sec	Exp O2 percent	Exp CO2 percent	Ins O2 percent	Ins CO2 percent	Exp Vol liters	Ins Vol liters	Exp Pk Prs cm H2O	Ins Pk Prs cm H2O	Exp Av Prs cm H2O	Ins Av Prs cm H2O	xp CO2 Pk liters	ns CO2Min liters	VE Stpd liers/min	sWB EndT C	hsDB EndT C	kpDB EndT C	pWB EndT C	kpDB EndT C	ExpH2OVapr	InsH2OVapr	uthO2TAv	th CO2TAv	outhO2VAv	th CO2VAv	sWBAvgTp C	sDBAvgTp C
0.0	0.00%	0.00%	0.00%	0.00%	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.00	0.00	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.5	24.64%	1.35%	28.10%	2.38%	1.9738	1.6599	0.7208	-1.0784	0.1108	-0.2792	0.0226	0.0047	25.7466	22.6249	25.1365	31.4635	28.9379	31.4635	918.03	875.07	0.2302	0.0135	0.2637	0.0186	23.2853	25.7913
1.0	21.28%	0.20%	23.66%	0.77%	1.6491	1.6542	0.7429	-1.0895	0.1638	-0.3282	0.0053	0.0038	29.2458	27.2740	31.2920	31.3491	27.2740	31.3491	917.71	913.94	0.2235	0.0049	0.2247	0.0049	27.2026	31.2348
1.5	24.94%	2.10%	26.02%	0.71%	1.6384	1.6650	3.2486	-19.2835	-5.1663	-10.8898	0.0428	-0.0002	29.0550	27.3689	31.4921	34.2791	30.3975	34.2791	975.00	1061.03	0.2554	0.0153	0.2548	0.0140	29.3310	32.7481
2.0	19.82%	4.59%	21.69%	1.50%	1.6408	1.6626	3.0278	-4.7322	1.8287	-1.4104	0.0624	0.0013	29.0978	29.8720	32.6069	34.6650	31.9738	34.6650	1155.56	1217.82	0.2081	0.0302	0.2076	0.0305	31.1137	33.4719
2.5	17.44%	3.57%	19.60%	1.06%	1.6359	1.6674	3.8971	-2.5604	2.4044	-1.2303	0.0477	-0.0001	29.0118	30.0691	33.1357	34.9222	32.4044	34.9222	1198.65	1239.65	0.1857	0.0232	0.1852	0.0232	31.4680	33.8884
3.0	15.63%	3.92%	18.27%	1.16%	1.6359	1.6674	2.5725	-3.2365	1.5998	-2.1973	0.0622	-0.0003	29.0115	28.7555	33.2072	35.0652	31.8570	35.0652	1083.33	1158.25	0.1695	0.0264	0.1695	0.0254	30.6708	34.0103
3.5	13.50%	4.64%	16.72%	1.36%	1.6304	1.6729	2.0013	-3.3192	1.3953	-2.3704	0.0723	-0.0003	28.9142	28.8795	33.6931	35.2938	31.9738	35.2938	1086.21	1154.96	0.1513	0.0310	0.1511	0.0300	30.7488	34.3717
4.0	12.06%	4.82%	15.46%	1.43%	1.6324	1.6709	1.8688	-3.3606	1.3462	-2.4362	0.0744	-0.0003	28.9496	29.1933	33.9932	35.7083	31.9665	35.7083	1096.25	1167.50	0.1377	0.0323	0.1376	0.0313	30.9298	34.7071
4.5	11.24%	4.75%	14.72%	1.37%	1.6355	1.6678	1.9130	-3.4848	1.3396	-2.5113	0.0726	-0.0003	29.0047	29.3466	34.5506	35.6940	32.0030	35.6940	1098.07	1176.52	0.1299	0.0316	0.1298	0.0306	31.0616	35.0254
5.0	10.64%	4.79%	14.14%	1.40%	1.6307	1.6726	1.9792	-3.4848	1.3524	-2.5705	0.0726	-0.0003	28.9198	29.6677	34.9222	36.0656	32.1125	36.0656	1107.82	1184.57	0.1240	0.0319	0.1239	0.0310	31.2391	35.3393
5.5	9.81%	4.73%	13.42%	1.36%	1.6251	1.6782	1.9792	-3.5510	1.3739	-2.6094	0.0704	-0.0003	28.8200	29.9596	35.2367	36.2086	32.2949	36.2086	1123.39	1198.14	0.1164	0.0313	0.1161	0.0305	31.4681	35.6027
6.0	9.48%	4.64%	13.17%	1.33%	1.6288	1.6745	1.9378	-3.6918	1.3378	-2.6980	0.0689	-0.0003	28.8857	30.1785	35.5654	36.2086	32.3314	36.2086	1137.50	1211.81	0.1134	0.0307	0.1133	0.0299	31.6262	35.8582
6.5	9.40%	4.60%	13.12%	1.32%	1.6333	1.6700	1.9130	-3.7829	1.2666	-2.8532	0.0688	-0.0003	28.9651	30.4851	35.9227	36.5516	32.4993	36.5516	1155.69	1228.37	0.1127	0.0304	0.1126	0.0296	31.8019	36.0985
7.0	9.40%	4.59%	13.19%	1.31%	1.6286	1.6748	1.8688	-3.9539	1.1405	-3.0827	0.0684	-0.0003	28.8811	30.6529	36.2800	36.7803	32.6598	36.7803	1169.65	1239.45	0.1131	0.0303	0.1129	0.0295	32.0038	36.4113
7.5	9.44%	4.63%	13.29%	1.33%	1.6287	1.6746	1.8412	-4.5887	0.9404	-3.4833	0.0689	-0.0004	28.8841	30.8718	36.5659	36.9232	32.8058	36.9232	1184.27	1252.95	0.1139	0.0306	0.1137	0.0298	32.1704	36.6086
8.0	9.60%	4.61%	13.48%	1.33%	1.6245	1.6789	1.7695	-13.3531	-0.0235	-5.2562	0.0689	-0.0003	28.8085	31.1565	36.6659	37.1233	32.9079	37.1233	1194.74	1263.71	0.1156	0.0305	0.1154	0.0297	32.3387	36.7858
8.5	9.59%	4.85%	13.52%	1.39%	1.6291	1.6743	1.8136	-47.9005	-5.1457	-13.3639	0.0711	-0.0003	28.8905	31.3462	36.7803	37.2090	33.0977	37.2090	1216.55	1286.12	0.1158	0.0320	0.1155	0.0312	32.5325	36.8626
9.0	9.14%	5.58%	13.42%	1.58%	1.6332	1.6701	1.7805	-66.6464	-14.5373	-25.8215	0.0795	0.0000	28.9639	31.7111	36.3801	37.1233	33.3166	37.1233	1251.62	1316.86	0.1137	0.0366	0.1128	0.0358	32.7776	36.7896
9.5	8.78%	6.59%	13.63%	1.94%	1.6287	1.6746	1.7860	-66.9831	-21.8228	-33.6877	0.0941	0.0007	28.8843	32.0395	36.2086	37.1376	33.5355	37.1376	1282.36	1346.60	0.1138	0.0436	0.1120	0.0426	33.0620	36.6443
10.0	8.05%	7.52%	13.45%	2.27%	1.6235	1.6799	1.5818	-66.9776	-25.4141	-37.2249	0.1061	0.0012	28.7908	32.2365	36.0942	37.0661	33.8713	37.0661	1305.30	1365.11	0.1098	0.0500	0.1075	0.0490	33.2675	36.6056
10.5	6.40%	8.53%	12.38%	2.58%	1.6258	1.6775	1.4549	-66.9831	-28.0671	-39.8845	0.1172	0.0019	28.8327	32.4044	36.0656	36.9946	33.8640	36.9946	1326.03	1383.66	0.0967	0.0565	0.0939	0.0555	33.4122	36.5627
11.0	4.11%	9.42%	10.81%	2.79%	1.6274	1.6760	1.4052	-66.9776	-30.0109	-41.9909	0.1226	0.0025	28.8601	32.5576	35.8655	36.9518	34.0172	36.9518	1344.77	1398.15	0.0776	0.0617	0.0746	0.0611	33.5035	36.3993
11.5	2.11%	10.21%	9.35%	3.00%	1.6150	1.6884	1.2203	-66.9831	-32.9688	-44.8483	0.1224	0.0035	28.6401	32.6963	35.5654	36.8517	34.0829	36.8517	1346.07	1395.57	0.0613	0.0658	0.0573	0.0660	33.5518	36.2536
12.0	1.78%	9.04%	8.63%	2.45%	1.5999	1.7035	1.7143	-66.9776	-26.6511	-37.6284	0.1076	0.0018	28.3725	32.6452	35.9227	36.7231	33.9880	36.7231	1329.48	1379.93	0.0548	0.0574	0.0520	0.0574	33.5419	36.3353
12.5	4.21%	6.95%	8.71%	1.99%	1.6135	1.6899	2.2689	-66.2794	-12.4918	-21.4927	0.0947	0.0002	28.6132	32.6233	36.8517	37.4949	33.8640	37.4949	1319.13	1366.75	0.0650	0.0453	0.0646	0.0447	33.4467	37.0972
13.0	4.31%	6.48%	8.91%	1.74%	1.6154	1.6879	2.1448	-66.5692	-12.3653	-23.5682	0.0861	0.0001	28.6476	32.6963	37.0661	37.5663	33.9004	37.5663	1324.26	1371.19	0.0664	0.0416	0.0661	0.0411	33.5193	37.3651
13.5	2.73%	6.65%	7.85%	1.77%	1.6169	1.6864	2.0013	-66.9555	-20.3554	-31.6544	0.0840	0.0005	28.6743	32.7036	36.9518	37.4663	33.9880	37.4663	1332.54	1383.39	0.0538	0.0424	0.0529	0.0421	33.5911	37.2016
14.0	7.32%	5.56%	10.15%	2.90%	1.5957	1.7076	2.5311	-18.3590	-1.9303	-5.9545	0.0634	0.0055	28.2987	33.4991	36.8517	37.3520	34.0829	37.3520	1377.82	1398.95	0.0888	0.0413	0.0873	0.0423	33.8787	37.0940
14.5	11.41%	3.95%	14.72%	1.10%	1.6356	1.6678	3.8005	-3.2972	2.4603	-1.8733	0.0558	0.0000	29.0056	32.6160	37.8665	37.7521	33.6085	37.7521	1314.22	1353.73	0.1304	0.0256	0.1307	0.0252	33.2564	37.6726
15.0	9.38%	4.57%	12.94%	1.39%	1.6286	1.6747	3.4280	-3.5676	2.0216	-2.3714	0.0674	-0.0002	28.8823	32.8058	38.8527	38.4239	33.7545	38.4239	1306.79	1357.89	0.1115	0.0305	0.1116	0.0298	33.4805	38.4177
15.5	8.87%	4.68%	12.58%	1.39%	1.6227	1.6807	2.6084	-3.6614	1.7701	-2.5449	0.0686	-0.0002	28.7769	32.9955	39.2957	38.6669	33.8421	38.6669	1311.01	1360.62	0.1071	0.0310	0.1073	0.0304	33.6133	38.7775
16.0	8.46%	4.71%	12.21%	1.39%	1.6267	1.6766	2.2965	-3.7056	1.6756	-2.6484	0.0681	-0.0001	28.8485	33.1707	39.4244	38.7097	33.9004	38.7097	1324.66	1373.57	0.1033	0.0312	0.1034	0.0305	33.7398	39.0064
16.5	7.97%	4.62%	11.74%	1.35%	1.6310	1.6724	2.2551	-3.7387	1.6270	-2.7155	0.0667	-0.0001	28.9235	33.3166	39.8103	38.8384	33.9588	38.8384	1335.91	1383.65	0.0985	0.0305	0.0985	0.0299	33.8288	39.1863
17.0	7.74%	4.57%	11.48%	1.33%	1.6250	1.6783	2.1999	-3.8850	1.5437	-2.8398	0.0651	0.0000	28.8187	33.4261	40.2104	39.0671	34.0829	39.0671	1335.53	1383.39	0.0960	0.0301	0.0961	0.0295	33.9076	39.3995
17.5	7.57%	4.63%	11.30%	1.34%	1.6192	1.6842	2.1779	-3.9264	1.5036	-2.9280	0.0654	0.0000	28.7143	33.6085	40.4963	39.3529	34.1632	39.3529	1344.23	1387.38	0.0943	0.0304	0.0944	0.0299	34.0347	39.6673
18.0	7.53%	4.65%	11.31%	1.35%	1.6245	1.6789	2.0758	-4.0229	1.4004	-3.0481	0.0662	0.0001	28.8082	33.7180	40.5678	39.5673	34.2288	39.5673	1356.82	1398.59	0.0941	0.0306	0.0942	0.0300	34.1250	39.8485
18.5	7.57%	4.63%	11.35%	1.37%	1.6245	1.6788	1.9102	-4.2161	1.2592	-3.2367	0.0665	0.0001	28.8092	33.8275	40.8536	39.4958	34.3018	39.4958	1363.36	1408.37	0.0945	0.0306	0.0946	0.0300	34.2317	39.9696
19.0	7.70%	4.64%	11.61%	1.37%	1.6303	1.6731	1.8688	-4.3789	1.1115	-3.4930	0.0657	0.0002	28.9114	33.9588	41.0108	39.6387	34.3967	39.6387	1379.15	1423.69	0.0965	0.0306	0.0965	0.0300	34.3450	40.1048
19.5	7.93%	4.66%	11.95%	1.39%	1.6254	1.6779	1.8274	-7.8726	0.5917	-4.4820	0.0668	0.0004	28.8250	34.1194	41.0680	39.7102	34.4843	39.7102	1384.96	1425.51	0.0993	0.0308	0.0994	0.0303	34.4113	40.1848
20.0	11.14%	4.54%	14.72%	2.05%	1.6249	1.6784	3.1492	-2.4914	1.8629	-0.8573	0.0547	0.0026	28.8169	33.9588	38.8384	38.6097	34.3967	38.6097	1422.35	1440.08	0.1303	0.0322	0.1293	0.0330	34.2806	38.6438
20.5	13.71%	3.29%	16.62%	1.06%	1.6335	1.6699	3.4556	-3.6366	2.1992	-2.3909	0.0498	0.0002	28.9681	33.2436	40.2819	39.1385	33.9734	39.1385	1317.81	1371.52	0.1511	0.0224	0.1517	0.0218	33.7585	39.5168
21.0	12.17%	4.56%	16.04%	1.47%	1.6362	1.6671	3.4473	-3.6394	2.1300	-2.3978	0.0673	0.0005	29.0165	33.7837	40.7250	39.5816	34.2507	39.5816	1365.13	1415.54	0.1408	0.0308	0.1411	0.0302	34.1943	39.9041
21.5	12.15%	4.73%	16.22%	1.55%	1.6321	1.6712	3.4004	-3.6780	2.0877	-2.4455	0.0708	0.0007	28.9446	34.0099	40.9251	39.7102	34.4113	39.7102	1378.31	1426.60	0.1414	0.0322	0.1419	0.0314	34.3618	40.1413
22.0	12.31%	4.86%	16.57%	1.61%	1.6286	1.6747	3.3369	-3.6504	2.1006	-2.4364	0.0724	0.0008	28.8825	34.0756	41.1252	39.8103	34.5135	39.8103	1383.48	1429.20	0.1440	0.0331	0.1444	0.0323	34.4402	40.3117
22.5	12.60%	4.82%	17.02%	1.56%	1.6329	1.6705	3.5797	-3.6504	2.2055	-2.3960	0.0708	0.0008	28.9572	34.1194	41.4968	39.9246	34.5208	39.9246	1389.34	1437.31	0.1477	0.0326	0.1481	0.0319	34.4982	40.4279
23.0	13.01%	4.78%	17.54%	1.55%	1.6369	1.6664	3.4473	-3.6835	2.2146	-2.4158	0.0704	0.0009	29.0295	34.1924	41.4110	40.2104	34.5135	40.2104	1394.38	1440.25	0.1523	0.0324	0.1527	0.0317	34.5119	40.5429
23.5	13.66%	4.67%	18.17%	1.54%	1.6337	1.6697	3.4832	-3.7056	2.2049	-2.4399	0.0702	0.0010	28.9716	34.1924	41.7112	40.0675	34.6667	40.0675	1393.72	1441.74	0.1586	0.0318	0.1591	0.0310	34.5755	40.6982
24.0	14.53%	4.72%	18.95%	1.61%	1.6310	1.6724	3.5025	-3.7608	2.1656	-2.4708	0.0725	0.0010	28.9239	34.3091	41.7540	40.3248	34.6594	40.3248	1395.46	1444.28	0.1667	0.0326	0.1674	0.0317	34.6430	40.8467
24.5	15.49%	4.82%	20.04%	1.63%	1.6353	1.6681	3.4142	-3.7194	2.1997	-2.4650	0.0741	0.0010	29.0000	34.4478	41.9255	40.4248	34.7032	40.4248	1406.55	1454.52	0.1769	0.0332	0.1777	0.0322	34.7167	40.9577
25.0	16.38%	4.85%	21.05%	1.63%	1.6359	1.6674	3.4694	-3.7332	2.2565	-2.4572	0.0742	0.0011	29.0113	34.4478	41.9255	40.4248	34.7762	40.4248	1410.13	1457.22	0.1863	0.0333	0.1871	0.0324	34.7485	41.0385
25.5	17.38%	4.73%	22.12%	1.58%	1.6395	1.6639	3.4142	-3.7497	2.2537	-2.4950	0.0733	0.0010	29.0747	34.4551	42.0970	40.5535	34.7762	40.5535	1411.57	1459.82	0.1965	0.0326	0.1975	0.0315	34.7604	41.1407
26.0	18.99%	4.68%	23.53%	1.62%	1.6371	1.6663	3.4280	-3.8022	2.2186	-2.5262	0.0737	0.0010	29.0319	34.4843	42.2114	40.6392	34.8127	40.6392	1412.89	1463.76	0.2116	0.0325	0.2126	0.0315	34.8306	41.2521
26.5	20.53%	4.79%	25.11%	1.66%	1.6352	1.6681	3.4142	-3.8160	2.2360	-2.5299	0.0770	0.0010	28.9988	34.5427	42.3257	40.8393	34.8346	40.8393	1414.54	1463.49	0.2270	0.0335	0.2282	0.0323	34.8581	41.3439
27.0	21.97%	4.83%	26.68%	1.67%	1.6386	1.6647	3.3728	-3.8022	2.2873	-2.5317	0.0789	0.0010	29.0591	34.5573	42.3543	40.8536	34.8857	40.8536	1415.21	1464.35	0.2418	0.0338	0.2432	0.0325	34.8520	41.4198
27.5	23.33%	4.77%	28.12%	1.63%	1.6416	1.6618	3.4031	-3.8491	2.2919	-2.5610	0.0772	0.0009	29.1119	34.5718	42.4972	40.7821	34.8054	40.7821	1414.49	1471.33	0.2558	0.0333	0.2572	0.0320	34.8968	41.4688
28.0	25.17%	4.67%	29.82%	1.61%	1.6395	1.6638	3.3176	-3.9126	2.2803	-2.5944	0.0775	0.0008	29.0752	34.5208	42.5687	40.9251	34.9586	40.9251	1413.91	1469.63	0.2735	0.0327	0.2750	0.0314	34.9222	41.6148
28.5	27.03%	4.69%	31.67%	1.63%	1.6378	1.6655	3.4142	-3.8932	2.3265	-2.5996	0.0800	0.0008	29.0449	34.6302	42.7831	40.9537	34.9513	40.9537	1414.42	1468.92	0.2917	0.0331	0.2935	0.0316	34.9396	41.6782
29.0	28.64%	4.83%	33.38%	1.67%	1.6406	1.6628	3.3590	-3.9126	2.3591	-2.6040	0.0815	0.0008	29.0941	34.7032	42.7831	41.0680	34.9221	41.0680	1419.92	1474.11	0.3083	0.0340	0.3101	0.0325	34.9741	41.7484
29.5	30.30%	4.76%	35.06%	1.64%	1.6431	1.6603	3.3259	-3.9264	2.3847	-2.6334	0.0810	0.0007	29.1384	34.6010	42.8403	41.1252	34.9805	41.1252	1422.26	1474.63	0.3249	0.0336	0.3268	0.0320	34.9682	41.8006
30.0	31.87%	4.64%	36.60%	1.61%	1.6412	1.6622	3.3038	-3.9677	2.3926	-2.6659	0.0806	0.0007	29.1047	34.6667	42.9975	41.2824	34.9586	41.2824	1421.71	1469.61	0.3404	0.0329	0.3423	0.0312	34.9571	41.9030
30.5	33.51%	4.59%	38.15%	1.57%	1.6415	1.6619	3.2762	-4.0367	2.3848	-2.6992	0.0767	0.0007	29.1101	34.7032	43.1404	41.2824	34.9951	41.2824	1416.60	1473.24	0.3566	0.0322	0.3583	0.0308	34.9920	41.9426
31.0	35.41%	4.69%	39.98%	1.61%	1.6398	1.6635	3.2376	-4.0257	2.4148	-2.7184	0.0802	0.0006	29.0812	34.7178	43.1833	41.3538	35.0097	41.3538	1418.10	1476.01	0.3751	0.0331	0.3769	0.0315	35.0453	42.0504
31.5	37.38%	4.62%	41.84%	1.61%	1.6421	1.6612	3.2210	-4.0781	2.4410	-2.7414	0.0819	0.0005	29.1217	34.7762	43.2833	41.4253	35.0681	41.4253	1425.94	1480.44	0.3940	0.0329	0.3961	0.0311	35.0812	42.1469
32.0	39.15%	4.66%	43.61%	1.60%	1.6442	1.6591	3.2486	-4.0809	2.4698	-2.7665	0.0810	0.0005	29.1587	34.8054	43.4691	41.5254	35.1265	41.5254	1428.99	1485.55	0.4118	0.0329	0.4138	0.0313	35.1262	42.2555
32.5	40.58%	4.85%	45.17%	1.67%	1.6425	1.6608	3.3176	-4.1195	2.5006	-2.7844	0.0845	0.0006	29.1287	34.9221	43.5692	41.4968	35.1776	41.4968	1434.17	1488.77	0.4267	0.0343	0.4287	0.0326	35.1863	42.3799
33.0	42.03%	4.75%	46.65%	1.61%	1.6409	1.6624	3.2596	-4.1361	2.5218	-2.8199	0.0816	0.0005	29.1003	34.9221	43.5835	41.6397	35.1265	41.6397	1434.39	1489.69	0.4415	0.0334	0.4434	0.0318	35.2204	42.4668
33.5	43.57%	4.61%	48.10%	1.56%	1.6429	1.6605	3.2900	-4.2575	2.5363	-2.8522	0.0810	0.0005	29.1352	34.9221	43.7836	41.7826	35.2505	41.7826	1432.21	1488.43	0.4563	0.0325	0.4583	0.0309	35.2117	42.5702
34.0	44.77%	4.71%	49.34%	1.59%	1.6447	1.6586	3.3369	-4.2465	2.5545	-2.8811	0.0807	0.0005	29.1680	34.9805	43.8693	41.9255	35.2432	41.9255	1436.14	1493.20	0.4687	0.0331	0.4706	0.0315	35.2582	42.6967
34.5	46.79%	4.38%	50.99%	1.51%	1.6431	1.6602	3.2348	-4.3265	2.5430	-2.9365	0.0778	0.0005	29.1397	34.9951	43.9979	42.0685	35.2870	42.0685	1436.04	1494.43	0.4868	0.0311	0.4889	0.0294	35.3073	42.8607
35.0	48.38%	4.56%	52.53%	1.55%	1.6416	1.6617	3.2376	-4.3679	2.5514	-2.9635	0.0785	0.0005	29.1129	35.1265	44.2123	42.1542	35.3308	42.1542	1446.15	1504.24	0.5027	0.0321	0.5046	0.0306	35.4156	42.9552
35.5	50.21%	4.52%	54.21%	1.55%	1.6435	1.6599	3.2348	-4.3955	2.5801	-2.9993	0.0791	0.0005	29.1454	35.2141	44.2123	42.2114	35.5060	42.2114	1451.97	1511.04	0.5202	0.0319	0.5221	0.0303	35.4775	43.0751
36.0	51.52%	4.68%	55.55%	1.60%	1.6436	1.6598	3.2486	-4.4369	2.5964	-3.0284	0.0807	0.0006	29.1472	35.2141	44.4267	42.3543	35.4695	42.3543	1457.66	1516.17	0.5335	0.0330	0.5354	0.0314	35.5334	43.1645
36.5	53.20%	4.57%	57.13%	1.56%	1.6453	1.6581	3.2817	-4.5114	2.6237	-3.0642	0.0796	0.0005	29.1773	35.3600	44.4410	42.4401	35.5352	42.4401	1465.62	1522.46	0.5497	0.0323	0.5517	0.0307	35.5793	43.2081
37.0	54.70%	4.59%	58.55%	1.59%	1.6438	1.6596	3.3452	-4.5335	2.6524	-3.0959	0.0809	0.0006	29.1507	35.3965	44.4982	42.4258	35.5789	42.4258	1466.88	1523.85	0.5643	0.0326	0.5663	0.0309	35.6155	43.2911
37.5	56.04%	4.65%	59.94%	1.58%	1.6423	1.6610	3.3921	-4.6107	2.6831	-3.1199	0.0794	0.0006	29.1247	35.4476	44.6125	42.4972	35.5644	42.4972	1471.35	1527.97	0.5782	0.0327	0.5799	0.0311	35.6697	43.3485
38.0	57.40%	4.67%	61.26%	1.60%	1.6440	1.6594	3.4418	-4.6163	2.7174	-3.1517	0.0805	0.0006	29.1540	35.5789	44.7840	42.4972	35.6519	42.4972	1477.59	1534.58	0.5914	0.0330	0.5933	0.0313	35.7226	43.4192
38.5	58.58%	4.63%	62.41%	1.59%	1.6456	1.6578	3.4804	-4.6549	2.7515	-3.1838	0.0811	0.0006	29.1823	35.5935	44.9555	42.4972	35.6227	42.4972	1480.00	1534.20	0.6030	0.0328	0.6049	0.0311	35.7176	43.4834
39.0	59.61%	4.57%	63.41%	1.58%	1.6441	1.6593	3.5246	-4.6852	2.7852	-3.2233	0.0810	0.0006	29.1562	35.5060	44.8555	42.4972	35.5789	42.4972	1477.18	1531.18	0.6131	0.0325	0.6151	0.0307	35.7194	43.5785
39.5	60.39%	4.64%	64.26%	1.58%	1.6426	1.6607	3.5356	-4.7432	2.8096	-3.2627	0.0796	0.0006	29.1304	35.5935	45.0127	42.7259	35.5935	42.7259	1477.40	1533.92	0.6215	0.0327	0.6233	0.0311	35.7643	43.6499

SR100 Serial No. 60450

Effects of long-term heat exposure on self-contained self-rescuers

August 31, 2006

Time sec	Exp O2 percent	Exp CO2 percent	Ins O2 percent	Ins CO2 percent	Exp Vol liters	Ins Vol liters	Exp Pk Prs cm H2O	Ins Pk Prs cm H2O	Exp Av Prs cm H2O	Ins Av Prs cm H2O	xp CO2 Pk liters	ns CO2Min liters	VE Stpd liers/min	sWB EndT C	hsDB EndT C	kpDB EndT C	pWB EndT C	kpDB EndT C	ExpH2OVapr	InsH2OVapr	uthO2TAv	th CO2TAv	outhO2VAv	th CO2VAv	sWBAvgTp C	sDBAvgTp C
40.0	61.33%	4.61%	65.16%	1.57%	1.6442	1.6592	3.5659	-4.7680	2.8349	-3.3015	0.0806	0.0007	29.1581	35.6519	45.2128	42.6402	35.6519	42.6402	1477.15	1539.57	0.6306	0.0326	0.6325	0.0309	35.8090	43.7160
40.5	62.21%	4.58%	65.97%	1.56%	1.6457	1.6576	3.5797	-4.8536	2.8530	-3.3442	0.0794	0.0007	29.1852	35.6811	45.3557	42.7259	35.6811	42.7259	1484.60	1542.43	0.6391	0.0322	0.6409	0.0307	35.8366	43.8165
41.0	63.14%	4.51%	66.81%	1.53%	1.6443	1.6591	3.5797	-4.9198	2.8787	-3.3903	0.0771	0.0007	29.1595	35.7614	45.4272	42.7831	35.6884	42.7831	1487.35	1542.75	0.6481	0.0317	0.6498	0.0302	35.8642	43.9032
41.5	63.86%	4.55%	67.48%	1.56%	1.6443	1.6591	3.5797	-4.9750	2.9012	-3.4188	0.0788	0.0007	29.1600	35.8344	45.6416	42.9975	35.7614	42.9975	1490.86	1549.85	0.6549	0.0322	0.6567	0.0306	35.9367	43.9987
42.0	64.76%	4.55%	68.32%	1.58%	1.6429	1.6605	3.5797	-5.0523	2.9241	-3.4623	0.0796	0.0007	29.1347	35.8855	45.5844	43.0118	35.7979	43.0118	1497.69	1551.66	0.6636	0.0323	0.6654	0.0306	35.9762	44.0862
42.5	65.63%	4.56%	69.16%	1.56%	1.6444	1.6590	3.6349	-5.0992	2.9470	-3.5090	0.0790	0.0007	29.1615	35.9803	45.7845	42.9975	35.8709	42.9975	1503.05	1559.51	0.6722	0.0321	0.6739	0.0306	36.0482	44.2123
43.0	66.55%	4.51%	69.94%	1.56%	1.6459	1.6575	3.6460	-5.1406	2.9756	-3.5479	0.0778	0.0008	29.1878	36.0314	45.9274	43.0689	35.8271	43.0689	1511.40	1565.36	0.6807	0.0319	0.6824	0.0304	36.0978	44.2999
43.5	67.48%	4.52%	70.81%	1.56%	1.6444	1.6589	3.6901	-5.2096	3.0004	-3.5929	0.0798	0.0008	29.1626	36.1628	45.9989	43.3548	35.9438	43.3548	1519.95	1568.94	0.6896	0.0321	0.6914	0.0304	36.1501	44.3809
44.0	68.31%	4.60%	71.64%	1.57%	1.6430	1.6603	3.6901	-5.2399	3.0260	-3.6330	0.0785	0.0007	29.1376	36.2941	46.0989	43.3548	35.9730	43.3548	1524.65	1577.48	0.6981	0.0324	0.6998	0.0308	36.2380	44.4348
44.5	69.13%	4.61%	72.42%	1.60%	1.6445	1.6588	3.7591	-5.3199	3.0569	-3.6814	0.0799	0.0008	29.1637	36.3817	46.2847	43.4977	36.0898	43.4977	1537.39	1586.71	0.7060	0.0327	0.7078	0.0310	36.3195	44.5556
45.0	69.98%	4.56%	73.19%	1.58%	1.6460	1.6574	3.8005	-5.3503	3.0914	-3.7197	0.0791	0.0008	29.1894	36.4985	46.4419	43.3548	36.1482	43.3548	1544.13	1597.49	0.7142	0.0323	0.7159	0.0307	36.4078	44.6429
45.5	70.67%	4.61%	73.89%	1.59%	1.6445	1.6588	3.8143	-5.4303	3.1233	-3.7644	0.0788	0.0008	29.1644	36.6006	46.5706	43.4977	36.1993	43.4977	1554.00	1601.44	0.7212	0.0325	0.7228	0.0310	36.4670	44.7522
46.0	71.50%	4.51%	74.62%	1.56%	1.6431	1.6602	3.8557	-5.4938	3.1555	-3.8125	0.0782	0.0008	29.1395	36.6736	46.6135	43.6406	36.2649	43.6406	1561.21	1611.59	0.7289	0.0320	0.7306	0.0304	36.5721	44.8418
46.5	72.13%	4.56%	75.26%	1.56%	1.6446	1.6588	3.9109	-5.5683	3.1843	-3.8626	0.0777	0.0008	29.1651	36.7831	46.7850	43.7121	36.3817	43.7121	1571.60	1622.20	0.7354	0.0321	0.7370	0.0306	36.6630	44.9595
47.0	72.75%	4.55%	75.82%	1.57%	1.6446	1.6588	3.9109	-5.6649	3.2124	-3.9031	0.0788	0.0008	29.1654	36.8561	46.8564	43.6406	36.4182	43.6406	1582.26	1627.86	0.7412	0.0322	0.7429	0.0306	36.7288	45.0986
47.5	73.50%	4.47%	76.50%	1.54%	1.6460	1.6573	3.9551	-5.6925	3.2445	-3.9550	0.0777	0.0007	29.1907	36.9655	47.0708	43.8693	36.4401	43.8693	1592.29	1633.15	0.7484	0.0316	0.7500	0.0301	36.7736	45.1923
48.0	74.07%	4.57%	77.08%	1.58%	1.6446	1.6587	3.9937	-5.7615	3.2789	-4.0072	0.0784	0.0007	29.1660	37.0020	47.2137	43.9979	36.5277	43.9979	1589.32	1634.47	0.7541	0.0323	0.7557	0.0307	36.8125	45.3075
48.5	74.75%	4.54%	77.71%	1.55%	1.6433	1.6601	4.0544	-5.9464	3.3405	-4.1439	0.0782	0.0007	29.1417	36.8780	47.0136	44.0980	36.4985	44.0980	1584.20	1627.79	0.7607	0.0320	0.7623	0.0304	36.7600	45.2383
49.0	75.41%	4.56%	78.30%	1.58%	1.6447	1.6587	4.0627	-5.9133	3.3503	-4.1171	0.0789	0.0007	29.1669	37.0750	47.3567	44.0694	36.5642	44.0694	1592.98	1640.69	0.7670	0.0322	0.7686	0.0307	36.8823	45.4481
49.5	76.09%	4.55%	78.93%	1.58%	1.6461	1.6573	4.1317	-5.9905	3.3866	-4.1712	0.0779	0.0007	29.1919	37.1407	47.5282	44.1552	36.5861	44.1552	1604.34	1649.40	0.7736	0.0322	0.7751	0.0306	36.9573	45.5670
50.0	76.62%	4.61%	79.49%	1.58%	1.6447	1.6586	4.2145	-6.0512	3.4277	-4.2187	0.0791	0.0007	29.1673	37.3304	47.7140	44.2838	36.6006	44.2838	1611.97	1656.33	0.7790	0.0325	0.7805	0.0310	37.0394	45.6812
50.5	77.12%	4.57%	79.96%	1.57%	1.6433	1.6600	4.2531	-6.1451	3.4681	-4.2723	0.0777	0.0007	29.1427	37.3158	47.6997	44.2123	36.7612	44.2123	1618.60	1663.44	0.7839	0.0322	0.7854	0.0307	37.1255	45.8143
51.0	77.49%	4.57%	80.33%	1.58%	1.6447	1.6586	4.3248	-6.2030	3.5099	-4.3308	0.0788	0.0007	29.1675	37.5494	47.9284	44.4267	36.7831	44.4267	1629.65	1672.28	0.7875	0.0323	0.7891	0.0308	37.2008	45.9321
51.5	77.77%	4.62%	80.65%	1.60%	1.6461	1.6572	4.3414	-6.2665	3.5415	-4.3864	0.0797	0.0007	29.1922	37.6369	48.0999	44.6125	36.8488	44.6125	1639.96	1682.50	0.7905	0.0326	0.7921	0.0311	37.2845	46.0380
52.0	78.06%	4.63%	80.93%	1.60%	1.6447	1.6586	4.4076	-6.3272	3.5785	-4.4475	0.0779	0.0007	29.1675	37.6953	48.1427	44.5696	36.9290	44.5696	1646.40	1690.97	0.7935	0.0326	0.7949	0.0311	37.3765	46.1449
52.5	78.46%	4.55%	81.21%	1.59%	1.6447	1.6586	4.4352	-6.4376	3.6110	-4.4924	0.0779	0.0007	29.1675	37.8413	48.3571	44.7126	36.9290	44.7126	1658.06	1701.08	0.7968	0.0322	0.7983	0.0307	37.4681	46.2412
53.0	78.92%	4.55%	81.64%	1.57%	1.6433	1.6600	4.4628	-6.4762	3.6525	-4.5417	0.0763	0.0008	29.1429	38.0164	48.5001	44.7269	37.0239	44.7269	1669.17	1708.77	0.8014	0.0320	0.8028	0.0306	37.5516	46.3332
53.5	79.37%	4.55%	82.02%	1.58%	1.6447	1.6586	4.5318	-6.5618	3.6880	-4.5979	0.0759	0.0008	29.1676	38.0237	48.5001	44.8555	37.1480	44.8555	1679.13	1719.88	0.8056	0.0320	0.8069	0.0307	37.6390	46.4276
54.0	79.78%	4.58%	82.40%	1.61%	1.6461	1.6572	4.5842	-6.6418	3.7237	-4.6573	0.0784	0.0008	29.1924	38.1040	48.7287	44.9555	37.2283	44.9555	1684.09	1724.43	0.8094	0.0324	0.8109	0.0309	37.6820	46.5600
54.5	80.13%	4.60%	82.74%	1.60%	1.6447	1.6586	4.6422	-6.7411	3.7537	-4.7122	0.0760	0.0009	29.1678	38.1697	48.7859	44.9984	37.1845	44.9984	1691.03	1732.52	0.8130	0.0324	0.8143	0.0310	37.7616	46.6102
55.0	80.56%	4.51%	83.08%	1.60%	1.6433	1.6600	4.6836	-6.7853	3.7911	-4.7644	0.0767	0.0009	29.1433	38.2208	48.8431	45.0127	37.3158	45.0127	1697.15	1735.33	0.8168	0.0320	0.8182	0.0305	37.8080	46.7054
55.5	80.92%	4.55%	83.41%	1.62%	1.6447	1.6586	4.7388	-6.8929	3.8260	-4.8169	0.0777	0.0009	29.1679	38.3521	49.0003	45.1413	37.3669	45.1413	1707.93	1744.49	0.8202	0.0324	0.8216	0.0309	37.8838	46.8261
56.0	81.26%	4.57%	83.75%	1.62%	1.6461	1.6572	4.7940	-6.9619	3.8613	-4.8724	0.0771	0.0010	29.1925	38.4543	49.0718	45.1842	37.3742	45.1842	1720.54	1756.92	0.8237	0.0324	0.8250	0.0310	37.9784	46.9111
56.5	81.58%	4.57%	84.05%	1.61%	1.6447	1.6586	4.8492	-7.0033	3.9005	-4.9189	0.0766	0.0010	29.1679	38.5711	49.2861	45.2843	37.4764	45.2843	1728.15	1763.63	0.8268	0.0323	0.8281	0.0309	38.0531	47.0040
57.0	81.78%	4.62%	84.26%	1.65%	1.6433	1.6600	4.9044	-7.0613	3.9306	-4.9722	0.0787	0.0010	29.1433	38.6294	49.3576	45.2414	37.5494	45.2414	1735.76	1770.24	0.8288	0.0328	0.8302	0.0313	38.1275	47.0988
57.5	82.01%	4.60%	84.47%	1.63%	1.6447	1.6586	4.9595	-7.1551	3.9647	-5.0239	0.0771	0.0010	29.1677	38.7900	49.5720	45.3557	37.5859	45.3557	1750.34	1785.91	0.8310	0.0326	0.8324	0.0311	38.2463	47.1896
58.0	82.20%	4.59%	84.62%	1.66%	1.6461	1.6572	4.9816	-7.2048	4.0001	-5.0722	0.0794	0.0011	29.1922	38.9214	49.7006	45.4129	37.7245	45.4129	1763.37	1801.00	0.8326	0.0328	0.8341	0.0313	38.3582	47.2696
58.5	82.38%	4.58%	84.79%	1.65%	1.6447	1.6586	5.0561	-7.3207	4.0363	-5.1262	0.0772	0.0010	29.1674	39.0089	49.6435	45.5701	37.8048	45.5701	1776.10	1805.78	0.8346	0.0326	0.8359	0.0311	38.4176	47.3590
59.0	82.44%	4.64%	84.85%	1.67%	1.6447	1.6586	5.0837	-7.4034	4.0643	-5.1691	0.0779	0.0010	29.1672	39.1549	49.7149	45.5701	37.8048	45.5701	1787.49	1817.86	0.8351	0.0330	0.8365	0.0315	38.5191	47.4452
59.5	82.60%	4.58%	84.97%	1.65%	1.6433	1.6601	5.1362	-7.4145	4.1031	-5.2231	0.0778	0.0011	29.1422	39.3300	49.8721	45.6987	37.8997	45.6987	1801.04	1829.13	0.8365	0.0326	0.8378	0.0312	38.6260	47.5344
60.0	82.67%	4.60%	85.02%	1.67%	1.6447	1.6587	5.2079	-7.4586	4.1465	-5.2853	0.0792	0.0011	29.1666	39.4833	50.0008	45.8560	38.0237	45.8560	1817.16	1846.13	0.8370	0.0329	0.8384	0.0313	38.7520	47.6262
60.5	82.73%	4.59%	85.06%	1.68%	1.6461	1.6573	5.2576	-7.5469	4.1851	-5.3417	0.0787	0.0011	29.1913	39.6220	50.1008	45.8702	38.1040	45.8702	1834.88	1858.85	0.8376	0.0328	0.8390	0.0313	38.8491	47.7407
61.0	82.76%	4.68%	85.12%	1.69%	1.6446	1.6587	5.2907	-7.7070	4.2265	-5.4050	0.0790	0.0012	29.1661	39.7752	50.2151	45.9274	38.2062	45.9274	1849.44	1871.54	0.8381	0.0333	0.8394	0.0318	38.9606	47.7963
61.5	82.76%	4.68%	85.13%	1.70%	1.6432	1.6601	5.3790	-7.7567	4.2678	-5.4639	0.0781	0.0012	29.1408	39.9431	50.2151	45.9274	38.3083	45.9274	1864.96	1886.42	0.8382	0.0333	0.8394	0.0319	39.0950	47.9047
62.0	82.80%	4.64%	85.08%	1.71%	1.6446	1.6588	5.4425	-7.8450	4.3135	-5.5358	0.0778	0.0013	29.1653	40.2131	50.5010	46.0703	38.4616	46.0703	1887.83	1912.00	0.8381	0.0332	0.8394	0.0318	39.2775	47.9796
62.5	82.76%	4.72%	85.07%	1.74%	1.6460	1.6574	5.5004	-7.9774	4.3403	-5.6371	0.0786	0.0014	29.1900	40.4977	50.4438	46.2133	38.6294	46.2133	1911.30	1947.80	0.8379	0.0337	0.8392	0.0323	39.5322	48.0663
63.0	82.85%	4.59%	85.06%	1.70%	1.6445	1.6588	5.5943	-8.0795	4.3788	-5.7274	0.0767	0.0015	29.1637	41.1253	50.6439	46.2847	39.0454	46.2847	1975.56	2018.57	0.8383	0.0328	0.8395	0.0315	40.0497	48.1318
63.5	82.71%	4.70%	84.97%	1.73%	1.6429	1.6604	5.6550	-8.2313	4.3982	-5.8414	0.0769	0.0016	29.1359	41.7529	50.7868	46.3276	39.4760	46.3276	2056.75	2090.22	0.8373	0.0334	0.8384	0.0321	40.5717	48.2378
64.0	82.73%	4.65%	84.91%	1.76%	1.6444	1.6590	5.8426	-8.4107	4.4474	-5.9740	0.0780	0.0016	29.1615	41.5267	50.9298	46.4277	39.4103	46.4277	2050.00	2068.04	0.8369	0.0334	0.8382	0.0320	40.4206	48.3385
64.5	82.67%	4.68%	84.86%	1.76%	1.6445	1.6589	5.9254	-8.5487	4.4700	-6.0832	0.0777	0.0017	29.1629	41.0523	50.9298	46.3562	39.0819	46.3562	1993.11	2008.77	0.8365	0.0336	0.8377	0.0322	40.0208	48.4138
65.0	82.64%	4.64%	84.76%	1.78%	1.6459	1.6574	6.0523	-8.6508	4.5049	-6.2228	0.0791	0.0019	29.1888	40.9356	51.2442	46.4419	39.0089	46.4419	1981.05	1992.10	0.8357	0.0336	0.8370	0.0321	39.9073	48.5224
65.5	82.40%	4.79%	84.59%	1.81%	1.6445	1.6589	6.1324	-8.7832	4.5355	-6.3615	0.0792	0.0020	29.1632	40.9429	51.1442	46.6420	39.0089	46.6420	1982.74	1992.25	0.8337	0.0344	0.8350	0.0330	39.9339	48.6204
66.0	82.33%	4.76%	84.46%	1.82%	1.6430	1.6603	6.1958	-8.9378	4.5721	-6.5008	0.0794	0.0021	29.1373	41.1107	51.4157	46.7278	39.0965	46.7278	1993.09	1999.35	0.8327	0.0343	0.8340	0.0329	40.0088	48.7150
66.5	82.20%	4.78%	84.31%	1.84%	1.6444	1.6589	6.2979	-9.0868	4.6158	-6.6484	0.0797	0.0023	29.1624	41.1983	51.3585	46.7135	39.1184	46.7135	2012.70	2014.28	0.8313	0.0345	0.8326	0.0331	40.1152	48.8216
67.0	82.12%	4.76%	84.20%	1.85%	1.6459	1.6575	6.3835	-9.2800	4.6739	-6.7835	0.0802	0.0023	29.1880	41.3151	51.5300	46.7850	39.2717	46.7850	2025.05	2025.80	0.8304	0.0345	0.8316	0.0331	40.1954	48.9151
67.5	81.98%	4.82%	84.07%	1.86%	1.6444	1.6589	6.5049	-9.4455	4.7379	-6.9241	0.0790	0.0025	29.1619	41.4537	51.6444	46.8564	39.3008	46.8564	2036.21	2036.05	0.8290	0.0347	0.8302	0.0334	40.2853	48.9638
68.0	81.80%	4.85%	83.87%	1.86%	1.6429	1.6604	6.6484	-9.6001	4.8173	-7.0866	0.0791	0.0025	29.1358	41.5194	51.7016	47.0708	39.3884	47.0708	2042.44	2038.08	0.8272	0.0348	0.8283	0.0335	40.3261	49.0692
68.5	81.71%	4.78%	83.98%	1.54%	1.6444	1.6590	6.7809	-9.8319	4.8928	-7.3280	0.0757	0.0028	29.1613	41.6726	52.0732	46.9994	39.4103	46.9994	2056.06	2057.77	0.8275	0.0328	0.8285	0.0316	40.4900	49.3731
69.0	81.58%	4.79%	83.53%	1.84%	1.6458	1.6575	6.9133	-9.9864	4.9632	-7.4560	0.0744	0.0029	29.1869	41.7821	51.8731	47.0136	39.4176	47.0136	2070.66	2065.04	0.8247	0.0341	0.8255	0.0331	40.5089	49.2352
			85.13%	3.00%			6.9133	-2.4914																		
			7.85%	1.06%			1.2203	-66.9831																		
			49.24%	1.63%																						

Bag went flat at 8 min and had to take external breaths to reinflate - ignored the inspired value at 8 min use end of life max at 69 min

SR100 Serial No. 60512

Effects of long-term heat expsoure on self-contained self-rescuers

August 31, 2006

Time sec	Exp O2 percent	Exp CO2 percent	Ins O2 percent	Ins CO2 percent	Exp Vol liters	Ins Vol liters	Exp Pk Prs cm H2O	Ins Pk Prs cm H2O	Exp Av Prs cm H2O	Ins Av Prs cm H2O	xp CO2 Pk liters	hs CO2Min liters	VE Stpd liers/min	sWB EndT C	hsDB EndT C	kpDB EndT C	pWB EndT C	kpDB EndT C	ExpH2OVapr	InsH2OVapr	uthO2TAv	th CO2TAv	outhO2VAv	th CO2VAv	sWBAvgTp C	sDBAvgTp C
0.0	0.00%	0.00%	0.00%	0.00%	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.00	0.00	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.5	22.21%	1.92%	22.10%	1.59%	1.9747	1.6589	0.7098	-1.0343	0.1784	-0.2240	0.0226	0.0057	25.7630	24.7267	26.5086	33.1786	31.5068	33.1786	1107.69	1049.53	0.2005	0.0136	0.2216	0.0176	25.5270	27.2057
1.0	22.39%	0.55%	22.65%	0.61%	1.6475	1.6559	1.4935	-1.1668	0.2396	-0.2616	0.0114	0.0034	29.2165	29.2590	32.8927	32.8927	29.5217	32.8927	1105.97	1070.17	0.2254	0.0059	0.2252	0.0058	29.3596	32.7902
1.5	35.68%	4.34%	38.87%	1.56%	1.6379	1.6654	2.6139	-50.8119	-15.8448	-36.1232	0.0648	0.0015	29.0471	27.9892	32.4925	34.2791	29.5217	34.2791	968.40	1042.48	0.3740	0.0299	0.3727	0.0295	28.9189	33.2965
2.0	18.99%	5.07%	21.90%	1.89%	1.6305	1.6728	4.4490	-2.5742	3.3456	-1.0249	0.0619	0.0021	28.9161	32.1854	34.1362	35.9227	33.4991	35.9227	1346.00	1368.90	0.2059	0.0337	0.2045	0.0348	32.9537	34.9587
2.5	21.26%	3.23%	23.86%	0.97%	1.6355	1.6679	3.4142	-5.0854	2.6412	-3.4576	0.0583	-0.0001	29.0038	29.8428	33.5788	35.6940	32.1490	35.6940	1146.36	1224.01	0.2251	0.0224	0.2256	0.0210	31.4557	34.6016
3.0	18.86%	4.32%	22.06%	1.27%	1.6375	1.6659	3.1934	-5.1820	2.3780	-3.6921	0.0762	-0.0001	29.0389	29.4123	33.8503	35.6369	31.8206	35.6369	1096.50	1186.01	0.2041	0.0297	0.2046	0.0280	31.0722	34.6605
3.5	17.47%	4.73%	20.80%	1.42%	1.6398	1.6636	3.2044	-5.2841	2.3136	-3.8043	0.0831	-0.0001	29.0798	29.4634	34.0933	35.7512	31.9446	35.7512	1100.08	1190.09	0.1907	0.0326	0.1913	0.0308	31.1232	34.7961
4.0	16.14%	4.96%	19.69%	1.47%	1.6362	1.6672	3.3038	-5.3337	2.3655	-3.8202	0.0831	-0.0001	29.0160	29.6312	34.2791	35.9227	32.0395	35.9227	1115.95	1198.36	0.1787	0.0338	0.1791	0.0322	31.2812	35.0442
4.5	15.41%	4.73%	18.94%	1.43%	1.6321	1.6712	3.2596	-5.4496	2.3110	-3.9465	0.0806	-0.0001	28.9444	29.8720	34.6078	35.8655	32.2365	35.8655	1126.76	1208.58	0.1710	0.0325	0.1718	0.0308	31.4417	35.1919
5.0	15.01%	4.73%	18.62%	1.39%	1.6350	1.6684	3.2072	-5.5959	2.2438	-4.0796	0.0805	-0.0001	28.9951	30.1785	34.9222	36.1371	32.4044	36.1371	1149.07	1226.47	0.1674	0.0323	0.1682	0.0306	31.6421	35.4201
5.5	14.85%	4.71%	18.53%	1.39%	1.6383	1.6651	3.1713	-5.8139	2.2181	-4.2101	0.0803	-0.0001	29.0530	30.2515	35.1795	36.2657	32.7620	36.2657	1177.16	1246.91	0.1660	0.0322	0.1669	0.0305	31.8463	35.5685
6.0	14.84%	4.66%	18.55%	1.38%	1.6348	1.6686	3.1934	-5.9271	2.1843	-4.3341	0.0795	-0.0001	28.9916	30.4340	35.4225	36.4230	33.0612	36.4230	1201.21	1262.54	0.1660	0.0319	0.1669	0.0302	32.0530	35.7238
6.5	14.85%	4.69%	18.63%	1.36%	1.6314	1.6719	3.1492	-6.0457	2.1350	-4.4261	0.0791	-0.0001	28.9317	30.5726	35.4654	36.2657	33.4918	36.2657	1234.81	1281.77	0.1666	0.0319	0.1674	0.0303	32.2962	35.8997
7.0	14.99%	4.64%	18.77%	1.39%	1.6348	1.6685	3.0968	-6.1064	2.0922	-4.5369	0.0800	-0.0001	28.9923	30.8353	35.7798	36.7088	33.8275	36.7088	1268.27	1307.18	0.1677	0.0319	0.1688	0.0302	32.5417	36.0571
7.5	15.11%	4.69%	18.96%	1.40%	1.6349	1.6684	3.1382	-6.0926	2.0668	-4.6488	0.0799	-0.0001	28.9937	31.0178	35.9227	36.6373	34.0464	36.6373	1291.16	1324.02	0.1693	0.0321	0.1704	0.0304	32.7229	36.1845
8.0	15.24%	4.75%	19.14%	1.42%	1.6384	1.6650	3.1603	-6.3217	1.9391	-4.9270	0.0799	-0.0001	29.0547	31.1856	35.9227	36.8374	33.8129	36.8374	1282.96	1327.57	0.1708	0.0325	0.1719	0.0308	32.7471	36.2812
8.5	15.56%	4.69%	19.47%	1.40%	1.6353	1.6681	3.0830	-6.7273	1.7348	-5.3796	0.0789	-0.0001	28.9997	31.3097	36.2086	36.7803	33.3896	36.7803	1251.21	1308.51	0.1741	0.0320	0.1752	0.0304	32.6059	36.3585
9.0	15.90%	4.71%	19.82%	1.41%	1.6323	1.6710	3.0278	-9.5890	1.2389	-6.2320	0.0794	-0.0001	28.9475	31.3900	36.2086	36.7231	33.2874	36.7231	1247.52	1311.95	0.1775	0.0323	0.1786	0.0306	32.6576	36.3428
9.5	14.70%	5.58%	16.94%	3.92%	1.6340	1.6694	4.1455	-3.0847	2.9719	-0.3998	0.0650	0.0211	28.9768	33.3531	35.6369	36.5659	33.9734	36.5659	1396.69	1433.16	0.1601	0.0460	0.1582	0.0475	33.7065	36.0478
10.0	17.73%	3.66%	21.22%	0.98%	1.6334	1.6699	4.5953	-5.5269	3.5157	-3.6389	0.0573	-0.0001	28.9669	31.3316	36.0942	36.7803	33.2874	36.7803	1254.00	1304.52	0.1940	0.0242	0.1948	0.0232	32.5694	36.2899
10.5	16.38%	4.49%	20.27%	1.34%	1.6361	1.6673	3.8833	-5.7201	3.1218	-3.6967	0.0723	-0.0001	29.0145	31.6746	36.4944	36.9946	33.3166	36.9946	1260.78	1326.16	0.1826	0.0304	0.1832	0.0292	32.8022	36.5651
11.0	15.69%	4.64%	19.77%	1.38%	1.6323	1.6710	3.9992	-5.6152	3.1703	-3.7163	0.0755	-0.0001	28.9481	31.8279	36.4944	37.0089	33.4334	37.0089	1272.41	1333.87	0.1767	0.0314	0.1773	0.0301	32.9203	36.6628
11.5	15.43%	4.57%	19.38%	1.40%	1.6353	1.6681	3.8971	-5.6925	3.1142	-3.7897	0.0764	-0.0001	29.0000	31.9300	36.6373	37.1376	33.4261	37.1376	1283.81	1341.45	0.1733	0.0313	0.1741	0.0299	32.9926	36.7950
12.0	15.21%	4.70%	19.14%	1.44%	1.6384	1.6649	3.7895	-5.8912	2.9767	-3.9467	0.0776	-0.0001	29.0555	32.1198	36.8374	37.1805	33.5793	37.1805	1296.47	1355.70	0.1710	0.0321	0.1717	0.0307	33.1148	36.8790
12.5	15.06%	4.72%	18.93%	1.43%	1.6350	1.6684	3.7177	-5.8857	2.8619	-4.0780	0.0775	-0.0001	28.9944	32.2949	36.9946	37.2090	33.6085	37.2090	1302.47	1362.30	0.1691	0.0322	0.1699	0.0308	33.2219	36.9938
13.0	14.73%	4.78%	18.63%	1.46%	1.6348	1.6686	3.6763	-6.0512	2.7890	-4.1845	0.0785	-0.0001	28.9909	32.4044	37.0661	37.3520	33.7545	37.3520	1314.03	1369.76	0.1660	0.0326	0.1668	0.0312	33.3071	37.0816
13.5	14.54%	4.72%	18.42%	1.43%	1.6310	1.6723	3.6460	-6.0678	2.7130	-4.2889	0.0780	0.0000	28.9248	32.5285	37.2376	37.4091	33.8421	37.4091	1319.88	1375.06	0.1640	0.0322	0.1648	0.0307	33.4118	37.2388
14.0	14.16%	4.83%	18.09%	1.44%	1.6342	1.6692	3.6763	-6.0788	2.7245	-4.2966	0.0770	0.0000	28.9806	32.6963	37.4949	37.6378	33.8640	37.6378	1335.18	1388.51	0.1606	0.0327	0.1612	0.0314	33.5475	37.4545
14.5	14.01%	4.75%	17.86%	1.44%	1.6376	1.6658	3.7122	-6.1451	2.6807	-4.3446	0.0771	0.0000	29.0407	32.7912	37.6950	37.6950	34.0172	37.6950	1348.57	1401.99	0.1585	0.0323	0.1593	0.0309	33.6647	37.5794
15.0	13.73%	4.78%	17.60%	1.44%	1.6338	1.6695	3.7039	-6.1340	2.6830	-4.3785	0.0770	0.0001	28.9743	32.9882	37.6378	37.8522	34.1924	37.8522	1356.57	1407.88	0.1558	0.0325	0.1567	0.0311	33.7621	37.6727
15.5	13.42%	4.76%	17.32%	1.44%	1.6299	1.6735	3.6901	-6.1230	2.7028	-4.3950	0.0763	0.0001	28.9040	33.0539	37.8665	37.8665	34.1924	37.8665	1361.26	1414.85	0.1529	0.0323	0.1537	0.0310	33.8634	37.7198
16.0	12.95%	4.74%	16.92%	1.44%	1.6330	1.6703	3.7591	-6.0650	2.7463	-4.3686	0.0758	0.0002	28.9604	33.2071	37.9951	37.9951	34.2288	37.9951	1377.13	1422.18	0.1486	0.0322	0.1493	0.0309	33.9175	37.7970
16.5	12.53%	4.73%	16.51%	1.44%	1.6364	1.6669	3.7895	-6.1230	2.7573	-4.4033	0.0750	0.0002	29.0205	33.2874	38.0952	37.9808	34.2507	37.9808	1385.79	1433.27	0.1445	0.0321	0.1452	0.0309	34.0020	37.8696
17.0	12.56%	4.66%	16.48%	1.42%	1.6325	1.6708	3.7453	-6.2030	2.7317	-4.4792	0.0741	0.0003	28.9512	33.2801	38.1380	37.9951	34.3018	37.9951	1378.83	1430.67	0.1445	0.0316	0.1452	0.0304	34.0226	37.9485
17.5	12.50%	4.78%	16.49%	1.47%	1.6288	1.6746	3.7895	-6.2334	2.7331	-4.5036	0.0756	0.0004	28.8848	33.4042	38.3238	38.0952	34.3091	38.0952	1379.29	1428.73	0.1442	0.0325	0.1450	0.0312	34.0572	38.0802
18.0	12.66%	4.70%	16.66%	1.45%	1.6327	1.6707	3.7867	-6.3824	2.7306	-4.5254	0.0744	0.0004	28.9542	33.3531	38.3524	38.2095	34.3383	38.2095	1389.41	1431.42	0.1459	0.0320	0.1466	0.0307	34.0579	38.1233
18.5	12.65%	4.80%	16.80%	1.47%	1.6328	1.6706	3.8557	-6.2858	2.7556	-4.5156	0.0745	0.0005	28.9557	33.4261	38.4954	38.0666	34.3018	38.0666	1391.89	1434.05	0.1466	0.0325	0.1472	0.0313	34.0861	38.1567
19.0	12.82%	4.72%	17.01%	1.47%	1.6367	1.6667	3.8447	-6.2775	2.7824	-4.5043	0.0735	0.0006	29.0246	33.4918	38.4954	38.2667	34.3383	38.2667	1395.07	1440.98	0.1485	0.0321	0.1492	0.0310	34.1362	38.2698
19.5	13.04%	4.66%	17.28%	1.47%	1.6331	1.6703	3.8419	-6.2858	2.8263	-4.4906	0.0741	0.0007	28.9612	33.6085	38.7097	38.2810	34.4113	38.2810	1393.53	1438.98	0.1508	0.0319	0.1516	0.0307	34.1571	38.3330
20.0	13.29%	4.66%	17.62%	1.50%	1.6298	1.6736	3.8888	-6.2444	2.8617	-4.4748	0.0748	0.0008	28.9023	33.5210	38.6097	38.3238	34.3967	38.3238	1391.90	1434.74	0.1537	0.0321	0.1546	0.0308	34.1572	38.4009
20.5	13.75%	4.67%	18.18%	1.49%	1.6338	1.6695	3.8833	-6.2720	2.8721	-4.4918	0.0744	0.0009	28.9747	33.6085	38.7812	38.4239	34.3748	38.4239	1394.12	1440.95	0.1587	0.0320	0.1596	0.0308	34.1972	38.5008
21.0	14.63%	4.67%	19.04%	1.52%	1.6379	1.6654	3.8888	-6.3438	2.8591	-4.5425	0.0752	0.0010	29.0470	33.6085	38.7812	38.4382	34.4259	38.4382	1399.79	1444.27	0.1673	0.0322	0.1683	0.0309	34.1994	38.5276
21.5	15.54%	4.80%	20.03%	1.57%	1.6351	1.6682	3.9523	-6.3548	2.8853	-4.5372	0.0768	0.0010	28.9970	33.6815	38.7812	38.6383	34.4478	38.6383	1398.39	1448.17	0.1768	0.0331	0.1778	0.0318	34.2749	38.6445
22.0	16.38%	4.89%	21.01%	1.61%	1.6326	1.6707	4.0213	-6.3106	2.9685	-4.4717	0.0776	0.0012	28.9534	33.7837	39.0099	38.6097	34.5135	38.6097	1407.39	1453.15	0.1859	0.0337	0.1869	0.0325	34.3390	38.6532
22.5	17.10%	4.79%	21.76%	1.62%	1.6363	1.6670	4.0489	-6.3548	3.0511	-4.4280	0.0778	0.0013	29.0186	33.8275	38.9956	38.5668	34.5573	38.5668	1411.63	1456.26	0.1931	0.0335	0.1943	0.0321	34.3491	38.7214
23.0	18.25%	4.74%	22.88%	1.59%	1.6398	1.6635	4.1537	-6.4100	3.0945	-4.4498	0.0761	0.0013	29.0808	33.8129	39.0671	38.7812	34.5427	38.7812	1411.12	1459.52	0.2045	0.0329	0.2057	0.0316	34.3707	38.8427
23.5	19.75%	4.76%	24.35%	1.60%	1.6375	1.6659	4.1731	-6.5204	3.1334	-4.4477	0.0777	0.0013	29.0391	33.8275	39.1385	38.7812	34.5573	38.7812	1411.39	1458.76	0.2192	0.0332	0.2205	0.0318	34.3935	38.9093
24.0	21.04%	4.86%	25.62%	1.71%	1.6355	1.6679	4.2862	-6.3879	3.2520	-4.3866	0.0821	0.0014	29.0035	33.9588	39.4101	38.8384	34.6302	38.8384	1416.66	1463.78	0.2317	0.0345	0.2333	0.0328	34.4665	38.9925
24.5	22.14%	4.78%	26.82%	1.70%	1.6387	1.6647	4.4352	-6.3686	3.4980	-4.2512	0.0811	0.0014	29.0603	34.0464	39.3529	38.7097	34.6302	38.7097	1427.11	1473.67	0.2432	0.0340	0.2448	0.0324	34.5315	39.0173
25.0	23.27%	4.65%	27.96%	1.63%	1.6390	1.6643	4.6698	-6.3272	3.6880	-4.1963	0.0796	0.0013	29.0664	33.9369	39.4244	38.7812	34.6302	38.7812	1420.60	1467.03	0.2544	0.0331	0.2561	0.0314	34.4807	39.0740
25.5	25.04%	4.70%	29.67%	1.62%	1.6420	1.6614	4.6063	-6.3989	3.6549	-4.2691	0.0796	0.0013	29.1189	33.9004	39.4672	39.0671	34.6010	39.0671	1408.96	1461.84	0.2718	0.0332	0.2735	0.0316	34.4243	39.1404
26.0	27.06%	4.67%	31.57%	1.63%	1.6400	1.6633	4.6146	-6.3962	3.6935	-4.2719	0.0823	0.0012	29.0845	33.7910	39.4958	39.1385	34.6302	39.1385	1403.66	1456.61	0.2912	0.0334	0.2932	0.0315	34.4014	39.1851
26.5	28.50%	4.91%	33.25%	1.66%	1.6383	1.6650	4.6284	-6.3548	3.7248	-4.2679	0.0843	0.0012	29.0537	33.8129	39.6387	39.0670	34.6302	39.0670	1404.84	1458.12	0.3068	0.0346	0.3087	0.0328	34.4358	39.2311
27.0	30.20%	4.74%	34.87%	1.65%	1.6409	1.6624	4.6974	-6.3962	3.7452	-4.3037	0.0851	0.0011	29.1005	33.8640	39.7102	39.1385	34.5573	39.1385	1407.93	1459.39	0.3231	0.0340	0.3254	0.0319	34.4363	39.2907
27.5	31.77%	4.65%	36.45%	1.61%	1.6433	1.6601	4.6284	-6.4652	3.7401	-4.3530	0.0835	0.0011	29.1423	33.9004	39.8103	39.1242	34.6594	39.1242	1410.69	1464.10	0.3388	0.0333	0.3411	0.0313	34.4688	39.3491
28.0	33.71%	4.56%	38.19%	1.57%	1.6415	1.6619	4.5870	-6.4514	3.7248	-4.4079	0.0806	0.0011	29.1103	33.9004	39.7102	39.2814	34.5937	39.2814	1407.58	1460.16	0.3574	0.0325	0.3595	0.0306	34.4581	39.4065
28.5	35.61%	4.68%	40.03%	1.63%	1.6399	1.6635	4.6063	-6.5424	3.7470	-4.4282	0.0842	0.0010	29.0819	33.9296	39.8674	39.2386	34.6302	39.2386	1409.17	1462.85	0.3759	0.0335	0.3782	0.0315	34.5005	39.4461
29.0	37.34%	4.83%	41.84%	1.66%	1.6421	1.6612	4.6698	-6.5894	3.7768	-4.4577	0.0876	0.0011	29.1217	34.0464	39.9246	39.3529	34.6302	39.3529	1416.07	1470.51	0.3936	0.0345	0.3959	0.0324	34.5601	39.5113
29.5	39.39%	4.64%	43.72%	1.62%	1.6442	1.6591	4.7719	-6.6418	3.8126	-4.4767	0.0858	0.0010	29.1589	33.9588	39.9818	39.2957	34.7178	39.2957	1420.95	1474.57	0.4131	0.0334	0.4155	0.0313	34.5877	39.5648
30.0	40.74%	4.87%	45.27%	1.68%	1.6426	1.6608	4.8216	-6.5756	3.8581	-4.4859	0.0887	0.0011	29.1293	34.0829	39.9961	39.2100	34.8127	39.2100	1422.86	1476.90	0.4276	0.0349	0.4301	0.0328	34.6239	39.5844
30.5	42.12%	4.72%	46.59%	1.66%	1.6427	1.6606	4.8354	-6.6721	3.8706	-4.5279	0.0893	0.0010	29.1318	34.1194	40.1390	39.3529	34.8127	39.3529	1426.22	1478.57	0.4408	0.0343	0.4436	0.0319	34.6390	39.5960
31.0	43.55%	4.65%	48.02%	1.59%	1.6411	1.6622	4.8381	-6.7080	3.8877	-4.5661	0.0847	0.0010	29.1038	34.1632	40.1533	39.3529	34.8054	39.3529	1425.85	1480.84	0.4554	0.0333	0.4579	0.0312	34.6810	39.6580
31.5	45.35%	4.42%	49.50%	1.58%	1.6431	1.6603	4.7664	-6.8515	3.8837	-4.6176	0.0865	0.0009	29.1382	34.0464	40.2104	39.4244	34.8857	39.4244	1427.27	1482.77	0.4714	0.0324	0.4742	0.0300	34.6913	39.7110
32.0	46.73%	4.63%	50.98%	1.59%	1.6449	1.6585	4.7609	-6.9067	3.8782	-4.6755	0.0844	0.0009	29.1704	34.2215	40.2676	39.4672	34.8930	39.4672	1434.09	1489.84	0.4862	0.0332	0.4885	0.0311	34.7473	39.7692
32.5	48.56%	4.62%	52.64%	1.61%	1.6433	1.6600	4.8078	-6.9481	3.8960	-4.7266	0.0851	0.0009	29.1427	34.3383	40.2819	39.6387	35.0316	39.6387	1440.79	1494.50	0.5036	0.0332	0.5060	0.0312	34.8119	39.8469
33.0	50.41%	4.55%	54.33%	1.59%	1.6418	1.6615	4.7940	-7.0061	3.9188	-4.7746	0.0858	0.0010	29.1162	34.3675	40.3248	39.4672	35.1265	39.4672	1453.54	1501.10	0.5212	0.0328	0.5237	0.0307	34.8885	39.9010
33.5	52.24%	4.44%	56.02%	1.56%	1.6436	1.6597	4.8078	-7.0861	3.9395	-4.8114	0.0838	0.0010	29.1479	34.3748	40.4963	39.4958	35.2141	39.4958	1465.79	1514.59	0.5388	0.0321	0.5413	0.0300	34.9900	39.9083
34.0	53.56%	4.63%	57.37%	1.64%	1.6453	1.6581	4.8271	-7.1164	3.9709	-4.8410	0.0868	0.0011	29.1773	34.5135	40.5535	39.6387	35.5644	39.6387	1495.03	1540.23	0.5522	0.0336	0.5547	0.0313	35.2036	39.9780
34.5	55.08%	4.62%	58.88%	1.62%	1.6437	1.6596	4.8906	-7.1551	3.9995	-4.8718	0.0852	0.0010	29.1501	34.7397	40.5678	39.7102	35.7979	39.7102	1524.38	1561.57	0.5674	0.0333	0.5698	0.0312	35.4021	40.0318
35.0	56.61%	4.56%	60.34%	1.59%	1.6422	1.6611	4.9485	-7.1716	4.0311	-4.8933	0.0842	0.0010	29.1235	34.9513	40.4391	39.6959	36.0606	39.6959	1555.45	1586.25	0.5824	0.0328	0.5847	0.0307	35.6202	40.0464
35.5	57.85%	4.66%	61.60%	1.61%	1.6439	1.6595	4.9871	-7.2517	4.0550	-4.9105	0.0850	0.0010	29.1524	35.1776	40.5678	39.7102	36.3087	39.7102	1588.13	1614.35	0.5949	0.0334	0.5972	0.0313	35.8443	40.0892
36.0	58.84%	4.73%	62.67%	1.63%	1.6439	1.6594	5.0423	-7.2655	4.0960	-4.9301	0.0869	0.0011	29.1532	35.3235	40.7821	39.7817	36.4912	39.7817	1612.16	1633.73	0.6051	0.0339	0.6075	0.0318	36.0069	40.1242
36.5	59.86%	4.65%	63.67%	1.59%	1.6455	1.6579	5.0920	-7.2710	4.1367	-4.9672	0.0843	0.0011	29.1811	35.5060	40.7821	39.8103	36.5861	39.8103	1633.99	1647.93	0.6153	0.0332	0.6176	0.0312	36.1184	40.1849
37.0	60.74%	4.61%	64.52%	1.61%	1.6440	1.6594	5.0837	-7.3758	4.1593	-5.0108	0.0867	0.0011	29.1543	35.6519	40.7821	39.7817	36.7831	39.7817	1643.38	1655.39	0.6237	0.0333	0.6263	0.0311	36.2021	40.2594
37.5	61.56%	4.60%	65.32%	1.58%	1.6425	1.6609	5.1693	-7.4034	4.1802	-5.0611	0.0844	0.0012	29.1275	35.8271	40.8965	39.8674	36.8488	39.8674	1662.74	1674.36	0.6320	0.0330	0.6344	0.0309	36.3719	40.2956
38.0	62.50%	4.52%	66.16%	1.56%	1.6440	1.6593	5.1251	-7.4724	4.2010	-5.1152	0.0835	0.0011	29.1549	36.0898	41.0680	39.9246	37.1115	39.9246	1697.47	1703.15	0.6410	0.0325	0.6433	0.0304	36.5939	40.3332
38.5	63.37%	4.51%	66.98%	1.54%	1.6456	1.6578	5.1582	-7.5359	4.2211	-5.1673	0.0820	0.0011	29.1823	36.4109	41.0108	39.9818	37.2575	39.9818	1730.97	1736.49	0.6495	0.0322	0.6517	0.0302	36.8555	40.4130
39.0	64.32%	4.42%	67.78%	1.52%	1.6440	1.6593	5.1941	-7.5966	4.2440	-5.2193	0.0814	0.0011	29.1549	37.0020	41.1395	40.1390	37.7318	40.1390	1797.91	1797.28	0.6582	0.0317	0.6605	0.0297	37.3626	40.5755
39.5	65.17%	4.46%	68.60%	1.52%	1.6422	1.6612	5.2465	-7.6794	4.2672	-5.2737	0.0823	0.0011	29.1227	39.3592	41.3538	40.3248	39.4760	40.3248	2059.34	2059.44	0.6666	0.0319	0.6689	0.0299	39.3285	40.6901

SR100 Serial No. 60512

Effects of long-term heat expsoure on self-contained self-rescuers

August 31, 2006

Time sec	Exp O2 percent	Exp CO2 percent	Ins O2 percent	Ins CO2 percent	Exp Vol liters	Ins Vol liters	Exp Pk Prs cm H2O	Ins Pk Prs cm H2O	Exp Av Prs cm H2O	Ins Av Prs cm H2O	xp CO2 Pk liters	ns CO2Min liters	VE Stpd liers/min	sWB EndT C	sDB EndT C	pDB EndT C	pWB EndT C	pDB EndT C	ExpH2OVapr	InsH2OVapr	uthO2TAv	th CO2TAv	uthO2VAv	th CO2VAv	sWBAvgTp C	sDBAvgTp C
40.0	65.88%	4.59%	69.28%	1.61%	1.6435	1.6599	5.2631	-7.7484	4.2899	-5.3339	0.0857	0.0011	29.1451	41.0158	41.3538	40.3534	40.8334	40.3534	2289.11	2271.24	0.6734	0.0332	0.6758	0.0310	40.8136	40.7674
40.5	66.72%	4.60%	70.10%	1.59%	1.6454	1.6580	5.3128	-7.8671	4.3037	-5.3981	0.0834	0.0012	29.1791	37.8705	41.4110	40.3248	38.3959	40.3248	1921.83	1911.10	0.6820	0.0330	0.6841	0.0310	38.1459	40.8244
41.0	67.69%	4.54%	70.93%	1.56%	1.6444	1.6589	5.3321	-7.9554	4.3230	-5.4714	0.0805	0.0011	29.1621	35.0316	41.4968	40.4248	35.8344	40.4248	1531.12	1567.80	0.6911	0.0324	0.6931	0.0305	35.5639	40.7495
41.5	68.64%	4.46%	71.77%	1.53%	1.6445	1.6589	5.3321	-7.9968	4.3528	-5.5203	0.0799	0.0012	29.1635	34.8857	41.5682	40.2104	35.6154	40.2104	1513.61	1548.15	0.7000	0.0319	0.7020	0.0300	35.4132	40.8264
42.0	69.47%	4.53%	72.56%	1.57%	1.6431	1.6602	5.3680	-8.1320	4.3772	-5.5772	0.0828	0.0012	29.1391	34.9805	41.5825	40.2676	35.5644	40.2676	1505.10	1546.48	0.7080	0.0325	0.7102	0.0305	35.4178	40.8741
42.5	70.21%	4.65%	73.36%	1.58%	1.6446	1.6588	5.4011	-8.2589	4.4069	-5.6352	0.0821	0.0013	29.1650	35.0316	41.6397	40.2819	35.6154	40.2819	1511.01	1553.62	0.7160	0.0330	0.7179	0.0311	35.4624	40.8544
43.0	71.05%	4.59%	74.13%	1.55%	1.6460	1.6573	5.5004	-8.3307	4.4418	-5.6961	0.0808	0.0013	29.1905	35.0681	41.6397	40.3248	35.6227	40.3248	1517.62	1555.76	0.7240	0.0325	0.7259	0.0307	35.4781	40.9126
43.5	71.87%	4.52%	74.82%	1.58%	1.6446	1.6587	5.4977	-8.3831	4.4728	-5.7450	0.0821	0.0013	29.1659	35.1411	41.6397	40.3534	35.6154	40.3534	1520.60	1560.76	0.7314	0.0325	0.7334	0.0305	35.5366	40.9522
44.0	72.71%	4.42%	75.53%	1.56%	1.6432	1.6601	5.5446	-8.4410	4.5048	-5.8055	0.0814	0.0013	29.1415	35.1849	41.7540	40.4391	35.6811	40.4391	1527.12	1563.95	0.7391	0.0319	0.7412	0.0299	35.5872	41.0369
44.5	73.28%	4.56%	76.16%	1.60%	1.6447	1.6587	5.5667	-8.5211	4.5379	-5.8740	0.0832	0.0012	29.1667	35.3600	41.9970	40.4963	35.8344	40.4963	1538.30	1575.78	0.7451	0.0328	0.7472	0.0308	35.6777	41.0641
45.0	73.99%	4.55%	76.83%	1.57%	1.6461	1.6573	5.6329	-8.6177	4.5734	-5.9341	0.0821	0.0013	29.1917	35.4184	41.9827	40.5535	35.7395	40.5535	1545.87	1581.58	0.7522	0.0325	0.7541	0.0306	35.7272	41.1469
45.5	74.65%	4.57%	77.46%	1.58%	1.6447	1.6586	5.6770	-8.6867	4.5979	-5.9975	0.0814	0.0014	29.1673	35.5060	42.2114	40.6392	35.7979	40.6392	1549.90	1585.99	0.7587	0.0326	0.7605	0.0308	35.7979	41.2963
46.0	75.46%	4.46%	78.13%	1.55%	1.6433	1.6600	5.7322	-8.7501	4.6334	-6.0625	0.0813	0.0013	29.1430	35.5352	42.2114	40.7250	35.8855	40.7250	1558.06	1593.32	0.7660	0.0320	0.7679	0.0301	35.8700	41.3060
46.5	76.08%	4.55%	78.74%	1.60%	1.6447	1.6586	5.7736	-8.8660	4.6642	-6.1204	0.0827	0.0013	29.1679	35.6154	42.1399	40.7821	35.9438	40.7821	1566.84	1600.66	0.7722	0.0327	0.7741	0.0308	35.9272	41.3616
47.0	76.65%	4.60%	79.30%	1.60%	1.6448	1.6586	5.8288	-8.8660	4.6984	-6.1700	0.0817	0.0014	29.1682	35.7249	42.3543	40.7107	36.0168	40.7107	1572.80	1609.05	0.7779	0.0328	0.7798	0.0310	36.0018	41.4028
47.5	77.14%	4.65%	79.81%	1.62%	1.6461	1.6572	5.8868	-8.9709	4.7402	-6.2184	0.0825	0.0015	29.1929	35.8563	42.3257	40.7821	36.0898	40.7821	1585.53	1616.22	0.7829	0.0332	0.7848	0.0314	36.0584	41.4650
48.0	77.52%	4.64%	80.19%	1.65%	1.6448	1.6586	5.9530	-9.0454	4.7843	-6.2809	0.0841	0.0014	29.1683	35.9438	42.4258	40.7821	36.0898	40.7821	1592.61	1623.74	0.7866	0.0335	0.7886	0.0314	36.1354	41.5006
48.5	77.83%	4.60%	80.49%	1.62%	1.6434	1.6600	5.9861	-9.1696	4.8084	-6.3397	0.0827	0.0014	29.1440	35.9730	42.4401	40.8393	36.1190	40.8393	1589.73	1628.37	0.7897	0.0330	0.7916	0.0311	36.1876	41.5253
49.0	78.06%	4.61%	80.73%	1.61%	1.6448	1.6586	6.0496	-9.1696	4.8397	-6.4031	0.0814	0.0014	29.1686	36.1263	42.5687	40.9251	36.1263	40.9251	1596.53	1634.88	0.7921	0.0329	0.7939	0.0311	36.2370	41.5783
49.5	78.55%	4.46%	81.05%	1.59%	1.6462	1.6572	6.0413	-9.3903	4.8564	-6.5069	0.0807	0.0014	29.1931	36.0606	42.6116	40.7821	36.1482	40.7821	1604.11	1635.52	0.7961	0.0322	0.7980	0.0302	36.2444	41.6633
50.0	79.00%	4.46%	81.40%	1.60%	1.6448	1.6586	6.1048	-9.4041	4.8892	-6.5516	0.0801	0.0014	29.1689	36.2358	42.5687	41.0680	36.2358	41.0680	1607.86	1643.67	0.8001	0.0321	0.8020	0.0303	36.3373	41.7717
50.5	79.37%	4.55%	81.78%	1.62%	1.6434	1.6599	6.1407	-9.5559	4.9162	-6.5998	0.0813	0.0015	29.1446	36.2066	42.7259	41.0680	36.2358	41.0680	1613.80	1642.70	0.8039	0.0327	0.8058	0.0309	36.3408	41.7739
51.0	79.90%	4.51%	82.21%	1.63%	1.6448	1.6585	6.2152	-9.5835	4.9523	-6.6589	0.0815	0.0015	29.1691	36.3452	42.8545	41.0680	36.2358	41.0680	1625.54	1651.45	0.8087	0.0326	0.8106	0.0307	36.4103	41.8424
51.5	80.15%	4.67%	82.55%	1.67%	1.6462	1.6572	6.2290	-9.6553	4.9783	-6.7219	0.0825	0.0016	29.1936	36.4693	42.8974	41.1823	36.3233	41.1823	1628.70	1659.47	0.8118	0.0335	0.8135	0.0317	36.4747	41.9181
52.0	80.59%	4.63%	82.92%	1.67%	1.6448	1.6585	6.2841	-9.7353	5.0144	-6.7833	0.0815	0.0017	29.1692	36.4912	42.9260	41.2109	36.3817	41.2109	1636.11	1668.01	0.8159	0.0332	0.8176	0.0315	36.5571	41.9426
			82.92%	3.92%			6.2841	-2.5742																		
			16.48%	0.97%			3.0278	-9.7353																		
			43.20%	1.57%																						

SR100 Serial No. 60451

Effects of long-term heat exposure on self-conatined self-rescuers

August 31, 2006

Time sec	Exp O2 percent	Exp CO2 percent	Ins O2 percent	Ins CO2 percent	Exp Vol liters	Ins Vol liters	Exp Pk Prs cm H2O	Ins Pk Prs cm H2O	Exp Av Prs cm H2O	Ins Av Prs cm H2O	xp CO2 Pk liters	hs CO2Min liters	VE Stpd liers/min	sWB EndT C	hsDB EndT C	kpDB EndT C	pWB EndT C	kpDB EndT C	ExpH2OVapr	InsH2OVapr	uthO2TAv	th CO2TAv	outhO2VAv	th CO2VAv	sWBAvgTp C	sDBAvgTp C
0.0	0.00%	0.00%	0.00%	0.00%	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.00	0.00	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.5	21.29%	0.04%	22.51%	0.03%	1.9635	1.6494	0.8864	-1.0233	0.1474	-0.2197	0.0007	0.0000	25.6172	21.1945	22.2208	28.0905	27.5951	28.0905	858.57	826.95	0.1987	0.0003	0.2190	0.0003	21.8462	22.6225
1.0	25.51%	0.19%	31.18%	0.09%	1.6382	1.6463	1.0740	-1.3765	0.1964	-0.2682	0.0033	0.0003	29.0520	25.9020	28.6050	28.8337	26.9529	28.8337	907.69	887.33	0.2840	0.0015	0.2834	0.0014	26.1628	28.6379
1.5	28.03%	1.90%	49.92%	1.02%	1.6278	1.6567	2.3517	-1.8429	1.3894	-0.3689	0.0251	0.0018	28.8676	26.4202	29.3482	30.3487	28.3176	30.3487	962.39	938.71	0.3950	0.0139	0.3898	0.0146	27.1674	29.7971
2.0	22.80%	2.30%	25.37%	0.54%	1.6271	1.6574	3.7564	-3.8270	2.2054	-2.0184	0.0328	-0.0001	28.8559	27.4783	30.7203	32.2067	29.7553	32.2067	1045.43	1019.69	0.2419	0.0144	0.2408	0.0142	28.5930	31.3802
2.5	21.69%	3.27%	24.19%	0.95%	1.6296	1.6549	3.5246	-4.6852	2.4140	-2.9233	0.0522	-0.0001	28.9000	28.1716	31.2062	32.7784	30.4705	32.7784	1089.49	1069.27	0.2298	0.0220	0.2294	0.0211	29.2358	31.8059
3.0	18.90%	4.33%	21.97%	1.26%	1.6256	1.6589	3.2927	-4.7984	2.1429	-3.1276	0.0671	-0.0001	28.8281	28.6460	31.4063	32.7784	30.6018	32.7784	1119.16	1096.14	0.2047	0.0290	0.2044	0.0280	29.6074	32.0091
3.5	17.39%	4.65%	20.65%	1.36%	1.6274	1.6571	3.2210	-4.7404	2.0816	-3.2027	0.0705	-0.0001	28.8605	28.9744	31.8494	32.8498	30.7624	32.8498	1133.97	1111.69	0.1904	0.0310	0.1902	0.0300	29.8133	32.2463
4.0	16.03%	4.84%	19.42%	1.44%	1.6266	1.6579	3.2072	-4.8922	2.1035	-3.1916	0.0736	-0.0001	28.8462	29.2663	31.9208	32.9928	30.8353	32.9928	1144.85	1123.07	0.1774	0.0324	0.1772	0.0314	29.9866	32.4607
4.5	14.88%	4.69%	18.44%	1.37%	1.6291	1.6554	2.9947	-4.7542	2.0745	-3.2874	0.0702	-0.0001	28.8902	29.4925	32.2067	33.1786	30.9229	33.1786	1158.08	1138.26	0.1667	0.0312	0.1666	0.0303	30.1805	32.7057
5.0	14.33%	4.65%	17.93%	1.35%	1.6253	1.6592	2.9036	-4.6438	2.1302	-3.3020	0.0697	-0.0001	28.8229	29.8136	32.7784	33.4215	31.1273	33.4215	1169.17	1150.92	0.1614	0.0309	0.1613	0.0300	30.3963	32.9718
5.5	14.03%	4.63%	17.67%	1.34%	1.6215	1.6630	2.8954	-4.6218	2.1390	-3.3347	0.0688	-0.0001	28.7564	30.1639	33.0071	33.6931	31.2440	33.6931	1180.02	1162.51	0.1585	0.0307	0.1585	0.0299	30.5993	33.2370
6.0	13.88%	4.59%	17.56%	1.34%	1.6248	1.6597	2.8760	-4.6300	2.1311	-3.3830	0.0693	-0.0001	28.8141	30.3610	33.3501	33.8503	31.3462	33.8503	1195.37	1180.22	0.1571	0.0305	0.1572	0.0296	30.8052	33.4705
6.5	13.61%	4.63%	17.38%	1.34%	1.6282	1.6564	2.9616	-4.6549	2.1685	-3.4073	0.0678	-0.0001	28.8737	30.6310	33.5788	34.0361	31.5359	34.0361	1212.93	1198.08	0.1550	0.0306	0.1550	0.0298	31.0093	33.7067
7.0	13.37%	4.61%	17.17%	1.35%	1.6244	1.6601	3.0140	-4.6025	2.2096	-3.3977	0.0682	-0.0001	28.8080	30.9448	33.9218	34.1362	31.6016	34.1362	1222.31	1210.23	0.1527	0.0306	0.1527	0.0298	31.2046	33.9350
7.5	12.97%	4.60%	16.87%	1.33%	1.6205	1.6640	3.0609	-4.5997	2.2583	-3.3656	0.0666	-0.0001	28.7377	31.0981	34.0933	34.3220	31.7403	34.3220	1233.05	1222.27	0.1494	0.0304	0.1492	0.0297	31.3935	34.1293
8.0	12.13%	5.30%	15.80%	2.12%	1.6224	1.6622	3.4280	-3.2640	2.5822	-1.5371	0.0663	0.0021	28.7710	30.9813	33.8503	34.1362	31.7476	34.1362	1237.89	1226.71	0.1408	0.0365	0.1396	0.0371	31.3970	33.9924
8.5	16.04%	3.47%	19.88%	0.84%	1.6224	1.6621	4.6394	-3.3965	3.3861	-1.9492	0.0465	0.0001	28.7718	30.9229	33.8074	34.2076	31.8862	34.2076	1234.00	1222.44	0.1796	0.0218	0.1796	0.0216	31.3294	33.8658
9.0	14.88%	3.98%	18.35%	1.18%	1.6255	1.6590	3.4280	-4.5611	2.6327	-3.1564	0.0606	-0.0001	28.8270	31.4192	34.2791	34.4220	32.1125	34.4220	1263.95	1252.46	0.1660	0.0266	0.1661	0.0258	31.6933	34.3257
9.5	14.10%	4.49%	17.79%	1.36%	1.6250	1.6596	3.2210	-4.6025	2.5294	-3.2502	0.0674	-0.0001	28.8172	31.6746	34.4935	34.6364	32.0760	34.6364	1272.75	1264.19	0.1594	0.0301	0.1595	0.0293	31.8499	34.5230
10.0	13.71%	4.63%	17.53%	1.39%	1.6282	1.6564	3.1051	-4.6107	2.4682	-3.2919	0.0687	-0.0001	28.8741	31.7987	34.6078	34.6650	32.2949	34.6650	1288.34	1280.23	0.1561	0.0309	0.1562	0.0301	32.0065	34.6556
10.5	13.27%	4.69%	17.16%	1.40%	1.6244	1.6601	3.1520	-4.6163	2.5163	-3.2706	0.0684	-0.0001	28.8071	32.0395	34.9937	34.7793	32.4409	34.7793	1297.35	1290.15	0.1522	0.0311	0.1522	0.0304	32.1597	34.8096
11.0	12.75%	4.68%	16.75%	1.37%	1.6201	1.6644	3.4031	-4.5776	2.6550	-3.1909	0.0669	-0.0001	28.7312	32.1198	35.0652	34.9508	32.4117	34.9508	1301.97	1296.12	0.1476	0.0308	0.1475	0.0302	32.2620	34.8725
11.5	12.32%	4.60%	16.29%	1.34%	1.6233	1.6612	3.4142	-4.6300	2.6814	-3.2123	0.0662	-0.0001	28.7878	32.2949	35.1366	34.9222	32.5139	34.9222	1310.41	1304.65	0.1431	0.0303	0.1431	0.0297	32.3207	34.8795
12.0	12.02%	4.56%	15.86%	1.36%	1.6268	1.6577	3.3700	-4.6880	2.6384	-3.2777	0.0664	-0.0001	28.8493	32.3825	35.2367	34.8365	32.4701	34.8365	1318.14	1314.59	0.1393	0.0303	0.1394	0.0296	32.3933	34.9036
12.5	11.77%	4.62%	15.50%	1.39%	1.6226	1.6619	3.2072	-4.7956	2.5571	-3.3690	0.0680	-0.0001	28.7749	32.5139	35.2796	34.7793	32.5868	34.7793	1324.70	1322.64	0.1363	0.0308	0.1364	0.0300	32.5186	34.9937
13.0	11.44%	4.67%	15.19%	1.37%	1.6181	1.6664	3.1603	-4.8205	2.4982	-3.4389	0.0671	-0.0001	28.6961	32.6160	35.4082	34.8937	32.6160	34.8937	1330.71	1327.92	0.1332	0.0308	0.1332	0.0302	32.6237	35.1062
13.5	11.16%	4.65%	14.81%	1.38%	1.6217	1.6628	3.1382	-4.9198	2.4427	-3.5199	0.0674	-0.0001	28.7591	32.7693	35.4939	35.0652	32.8058	35.0652	1343.44	1341.61	0.1298	0.0308	0.1299	0.0302	32.7519	35.2523
14.0	10.85%	4.66%	14.47%	1.39%	1.6255	1.6590	3.1492	-4.9419	2.4193	-3.5626	0.0674	-0.0001	28.8266	32.9079	35.7512	35.2938	32.9371	35.2938	1358.01	1357.65	0.1265	0.0309	0.1266	0.0302	32.8946	35.3777
14.5	10.28%	4.72%	13.95%	1.41%	1.6207	1.6638	3.1934	-4.9060	2.4636	-3.5232	0.0680	-0.0001	28.7422	33.1342	35.9227	35.2796	32.9882	35.2796	1363.83	1363.51	0.1211	0.0313	0.1211	0.0307	33.0049	35.4823
15.0	9.81%	4.62%	13.50%	1.35%	1.6199	1.6646	3.2348	-4.9888	2.4657	-3.5570	0.0655	-0.0001	28.7275	33.1707	36.0656	35.4225	33.0612	35.4225	1370.78	1370.78	0.1165	0.0304	0.1165	0.0298	33.0989	35.5965
15.5	9.55%	4.62%	13.16%	1.35%	1.6147	1.6698	3.1824	-5.0302	2.3955	-3.6413	0.0658	-0.0001	28.6351	33.3750	36.2657	35.5225	33.1707	35.5225	1378.22	1378.50	0.1136	0.0304	0.1136	0.0298	33.2434	35.7767
16.0	9.23%	4.66%	12.85%	1.37%	1.6186	1.6659	3.1796	-5.0854	2.3458	-3.6862	0.0669	0.0000	28.7044	33.4626	36.3515	35.7083	33.3166	35.7083	1391.58	1393.95	0.1103	0.0308	0.1104	0.0302	33.3797	35.9196
16.5	9.05%	4.65%	12.64%	1.36%	1.6231	1.6615	3.2707	-5.0412	2.4468	-3.6737	0.0660	0.0000	28.7833	33.6377	36.4944	35.8084	33.3166	35.8084	1406.20	1407.44	0.1083	0.0306	0.1084	0.0301	33.4813	35.9985
17.0	8.80%	4.69%	12.45%	1.37%	1.6179	1.6666	3.2348	-5.0854	2.4262	-3.6930	0.0652	0.0001	28.6926	33.7910	36.6373	35.9227	33.4626	35.9227	1411.01	1413.44	0.1062	0.0308	0.1062	0.0303	33.5971	36.1200
17.5	8.48%	4.67%	12.18%	1.37%	1.6123	1.6722	3.2044	-5.1406	2.3788	-3.7425	0.0654	0.0001	28.5926	33.9296	36.6659	35.8655	33.5501	35.8655	1418.58	1419.89	0.1033	0.0307	0.1033	0.0302	33.7123	36.1887
18.0	8.15%	4.59%	11.87%	1.35%	1.6165	1.6680	3.1934	-5.1406	2.3482	-3.8172	0.0643	0.0002	28.6667	34.1194	36.9232	35.9942	33.6450	35.9942	1432.02	1433.62	0.1001	0.0302	0.1001	0.0297	33.8212	36.2932
18.5	9.42%	4.70%	12.06%	2.49%	1.6104	1.6742	3.8116	-3.3744	2.7965	-1.7693	0.0598	0.0082	28.5583	33.5210	36.0942	35.6940	33.4918	35.6940	1410.72	1403.93	0.1082	0.0353	0.1074	0.0359	33.5165	35.8320
19.0	13.29%	3.80%	16.67%	0.90%	1.6238	1.6607	5.8426	-3.4848	3.8184	-1.9373	0.0489	0.0002	28.7972	33.1342	35.5654	35.2796	33.3896	35.2796	1396.97	1390.78	0.1498	0.0236	0.1498	0.0235	33.1929	35.2648
19.5	11.15%	4.33%	14.53%	1.36%	1.6175	1.6670	3.8336	-4.9529	2.7791	-3.4865	0.0624	0.0003	28.6851	33.8713	36.4372	35.7512	33.6085	35.7512	1426.20	1426.26	0.1282	0.0290	0.1284	0.0284	33.7012	36.0314
20.0	10.38%	4.79%	14.19%	1.50%	1.6206	1.6639	3.4832	-4.9336	2.8042	-3.4658	0.0681	0.0005	28.7398	34.0464	36.7803	35.9227	33.6815	35.9227	1442.66	1443.52	0.1227	0.0320	0.1228	0.0314	33.8691	36.2474
20.5	10.06%	4.73%	14.00%	1.47%	1.6201	1.6644	3.5246	-4.9198	2.8219	-3.4815	0.0667	0.0006	28.7313	34.1924	36.8517	36.0656	33.7545	36.0656	1448.14	1450.08	0.1203	0.0315	0.1203	0.0310	33.9505	36.3585
21.0	9.88%	4.70%	13.87%	1.47%	1.6244	1.6601	3.5356	-4.9860	2.8166	-3.5001	0.0668	0.0007	28.8070	34.3383	37.0089	36.2086	33.8713	36.2086	1460.37	1461.62	0.1187	0.0314	0.1187	0.0308	34.0385	36.4739
21.5	9.92%	4.68%	13.94%	1.47%	1.6199	1.6647	3.5384	-5.0026	2.8179	-3.5184	0.0658	0.0008	28.7267	34.4113	36.9946	36.2086	33.9369	36.2086	1463.61	1465.04	0.1193	0.0313	0.1193	0.0307	34.1162	36.5410
22.0	10.00%	4.67%	14.10%	1.47%	1.6157	1.6689	3.5246	-5.0081	2.8395	-3.5125	0.0659	0.0009	28.6524	34.5135	37.1233	36.4372	33.9296	36.4372	1468.04	1470.27	0.1204	0.0312	0.1205	0.0307	34.2133	36.6423
22.5	10.14%	4.66%	14.32%	1.46%	1.6203	1.6642	3.5659	-5.0302	2.8471	-3.5150	0.0659	0.0009	28.7352	34.5573	37.2805	36.4230	34.0829	36.4230	1480.41	1481.74	0.1222	0.0311	0.1223	0.0306	34.2947	36.7476
23.0	10.33%	4.64%	14.58%	1.45%	1.6249	1.6596	3.5908	-4.9860	2.8690	-3.5140	0.0652	0.0010	28.8164	34.6302	37.4663	36.4944	34.1340	36.4944	1490.89	1492.68	0.1245	0.0309	0.1246	0.0304	34.3644	36.8119
23.5	10.54%	4.67%	14.90%	1.45%	1.6209	1.6637	3.6349	-5.0440	2.8767	-3.5231	0.0649	0.0012	28.7446	34.7397	37.4234	36.4944	34.1559	36.4944	1492.51	1494.14	0.1271	0.0311	0.1272	0.0306	34.4236	36.8960
24.0	11.07%	4.60%	15.37%	1.46%	1.6173	1.6672	3.5797	-5.1185	2.8577	-3.5689	0.0653	0.0012	28.6815	34.7762	37.5806	36.6659	34.2215	36.6659	1494.74	1497.63	0.1320	0.0309	0.1322	0.0303	34.4980	36.9865
24.5	11.81%	4.70%	16.06%	1.53%	1.6224	1.6621	3.5797	-5.1130	2.8412	-3.6031	0.0669	0.0013	28.7714	34.8857	37.5663	36.6373	34.3018	36.6373	1504.15	1508.53	0.1391	0.0317	0.1394	0.0311	34.5581	37.0234
25.0	12.52%	4.75%	16.91%	1.53%	1.6270	1.6576	3.6018	-5.0854	2.8903	-3.5742	0.0674	0.0014	28.8528	34.9513	37.7521	36.6088	34.2799	36.6088	1514.73	1516.49	0.1469	0.0320	0.1472	0.0314	34.6014	37.0928
25.5	13.04%	4.72%	17.59%	1.51%	1.6237	1.6608	3.6763	-5.0992	2.9332	-3.5696	0.0679	0.0014	28.7948	35.0316	37.7093	36.6373	34.4113	36.6373	1516.01	1518.55	0.1528	0.0318	0.1532	0.0311	34.6517	37.1306
26.0	13.53%	4.68%	18.11%	1.51%	1.6242	1.6603	3.8419	-5.1544	2.9335	-3.5943	0.0674	0.0015	28.8036	35.0316	37.8522	36.8517	34.3748	36.8517	1521.17	1523.05	0.1578	0.0316	0.1582	0.0309	34.6961	37.1888
26.5	14.53%	4.63%	18.97%	1.53%	1.6215	1.6631	3.7232	-5.2289	2.9000	-3.6626	0.0672	0.0014	28.7549	35.1557	37.9237	37.0089	34.4259	37.0089	1527.85	1530.78	0.1671	0.0315	0.1675	0.0308	34.8073	37.3252
27.0	15.55%	4.77%	20.03%	1.59%	1.6258	1.6587	3.6763	-5.2096	2.9291	-3.6477	0.0698	0.0015	28.8318	35.2870	38.0666	37.0661	34.5573	37.0661	1540.27	1542.80	0.1773	0.0325	0.1779	0.0318	34.8928	37.4327
27.5	16.44%	4.80%	21.06%	1.57%	1.6295	1.6550	3.7232	-5.1958	2.9759	-3.6311	0.0706	0.0015	28.8985	35.3600	38.2095	37.1233	34.6010	37.1233	1549.41	1553.70	0.1869	0.0327	0.1875	0.0319	34.9644	37.4899
28.0	17.26%	4.70%	21.96%	1.54%	1.6268	1.6577	3.7315	-5.2096	2.9904	-3.6574	0.0700	0.0015	28.8501	35.4330	38.2810	37.1376	34.6667	37.1376	1552.89	1555.93	0.1954	0.0320	0.1961	0.0312	35.0134	37.5391
28.5	18.50%	4.61%	22.99%	1.56%	1.6245	1.6601	3.6791	-5.3061	2.9539	-3.7218	0.0699	0.0015	28.8083	35.5060	38.3238	37.1805	34.7762	37.1805	1558.39	1563.06	0.2066	0.0318	0.2074	0.0309	35.1138	37.6676
29.0	19.72%	4.76%	24.20%	1.62%	1.6281	1.6564	3.6901	-5.2510	2.9697	-3.7323	0.0725	0.0015	28.8731	35.6519	38.4954	37.4234	34.8127	37.4234	1570.31	1574.16	0.2188	0.0328	0.2196	0.0319	35.1919	37.7543
29.5	20.87%	4.81%	25.45%	1.62%	1.6313	1.6532	3.7343	-5.2620	3.0108	-3.7273	0.0732	0.0016	28.9300	35.6519	38.4382	37.3520	34.8346	37.3520	1579.38	1583.96	0.2307	0.0331	0.2316	0.0322	35.2572	37.8112
30.0	21.80%	4.75%	26.50%	1.57%	1.6289	1.6556	3.8005	-5.3199	3.0349	-3.7339	0.0717	0.0015	28.8875	35.7614	38.5668	37.4234	34.9221	37.4234	1582.38	1585.69	0.2407	0.0325	0.2415	0.0316	35.2954	37.8374
30.5	22.72%	4.69%	27.44%	1.57%	1.6267	1.6578	3.7674	-5.3613	3.0451	-3.7560	0.0718	0.0014	28.8488	35.8271	38.7240	37.4091	34.8930	37.4091	1584.78	1589.51	0.2498	0.0323	0.2508	0.0313	35.3566	37.9081
31.0	24.11%	4.54%	28.62%	1.53%	1.6297	1.6548	3.8557	-5.4165	3.0243	-3.8212	0.0697	0.0014	28.9020	35.8709	38.5668	37.4234	35.0681	37.4234	1595.14	1599.99	0.2627	0.0313	0.2637	0.0303	35.4322	37.9881
31.5	25.42%	4.62%	29.85%	1.58%	1.6301	1.6544	3.7729	-5.4717	3.0318	-3.8496	0.0722	0.0013	28.9085	36.0168	38.7812	37.5663	35.1411	37.5663	1600.99	1606.04	0.2753	0.0321	0.2764	0.0310	35.4913	38.0611
32.0	26.92%	4.69%	31.35%	1.59%	1.6329	1.6517	3.8447	-5.4828	3.0765	-3.8415	0.0730	0.0013	28.9571	36.0314	38.7812	37.5806	35.0681	37.5806	1609.35	1614.34	0.2902	0.0324	0.2914	0.0314	35.5441	38.1014
32.5	28.10%	4.76%	32.65%	1.59%	1.6308	1.6537	3.8971	-5.4717	3.1204	-3.8476	0.0737	0.0014	28.9212	36.0533	38.7812	37.6378	35.1411	37.6378	1611.62	1617.47	0.3026	0.0328	0.3037	0.0317	35.5889	38.1163
33.0	29.16%	4.67%	33.75%	1.57%	1.6288	1.6557	3.9109	-5.4607	3.1437	-3.8644	0.0741	0.0013	28.8861	36.1190	38.8384	37.6950	35.1849	37.6950	1616.00	1620.30	0.3133	0.0324	0.3146	0.0312	35.6361	38.1654
33.5	30.05%	4.68%	34.72%	1.56%	1.6313	1.6532	3.9385	-5.5407	3.1533	-3.8899	0.0743	0.0013	28.9299	36.1993	38.9241	37.6378	35.2870	37.6378	1621.53	1626.73	0.3226	0.0324	0.3238	0.0312	35.6758	38.2079
34.0	31.01%	4.67%	35.68%	1.54%	1.6336	1.6509	3.9551	-5.5600	3.1713	-3.9213	0.0717	0.0013	28.9710	36.2941	38.9527	37.6950	35.3016	37.6950	1628.95	1635.15	0.3324	0.0321	0.3335	0.0311	35.7351	38.2660
34.5	32.13%	4.60%	36.68%	1.54%	1.6316	1.6529	3.9799	-5.5821	3.1707	-3.9707	0.0722	0.0013	28.9354	36.3817	39.2100	37.7093	35.3965	37.7093	1636.64	1642.66	0.3429	0.0318	0.3440	0.0307	35.8281	38.3610
35.0	33.61%	4.54%	37.96%	1.53%	1.6298	1.6547	3.9992	-5.6594	3.1750	-4.0094	0.0708	0.0013	28.9033	36.4401	39.2957	37.9237	35.4768	37.9237	1643.72	1650.07	0.3567	0.0314	0.3579	0.0304	35.9207	38.4699
35.5	35.04%	4.62%	39.30%	1.57%	1.6322	1.6524	4.1041	-5.6787	3.2020	-4.0271	0.0738	0.0014	28.9447	36.4547	39.3529	37.8522	35.4695	37.8522	1653.24	1659.32	0.3704	0.0321	0.3717	0.0310	35.9883	38.5435
36.0	36.39%	4.68%	40.62%	1.58%	1.6343	1.6502	4.1537	-5.7366	3.2297	-4.0528	0.0743	0.0015	28.9829	36.6736	39.4672	37.9808	35.5644	37.9808	1662.02	1668.55	0.3838	0.0324	0.3850	0.0313	36.0565	38.6153
36.5	37.77%	4.64%	41.95%	1.56%	1.6325	1.6520	4.1731	-5.7477	3.2538	-4.0801	0.0733	0.0015	28.9508	36.6371	39.5673	37.9951	35.6154	37.9951	1668.01	1673.45	0.3974	0.0321	0.3986	0.0310	36.1200	38.6724
37.0	38.78%	4.73%	43.01%	1.60%	1.6307	1.6538	4.0985	-5.7366	3.2795	-4.0926	0.0746	0.0016	28.9197	36.7320	39.5816	38.0380	35.6519	38.0380	1672.12	1676.86	0.4077	0.0328	0.4090	0.0317	36.1669	38.7035
37.5	39.73%	4.73%	44.01%	1.60%	1.6328	1.6517	4.1041	-5.8305	3.3001	-4.1270	0.0751	0.0017	28.9562	36.8561	39.6387	38.2095	35.7249	38.2095	1679.57	1685.83	0.4175	0.0328	0.4187	0.0317	36.2314	38.7633
38.0	40.36%	4.84%	44.68%	1.66%	1.6329	1.6517	4.1593	-5.8305	3.3275	-4.1360	0.0771	0.0017	28.9575	36.8926	39.7102	38.1380	35.7249	38.1380	1684.12	1691.12	0.4239	0.0337	0.4252	0.0325	36.2778	38.7921
38.5	40.98%	4.78%	45.39%	1.60%	1.6348	1.6497	4.2089	-5.9243	3.3496	-4.1631	0.0749	0.0018	28.9918	36.8196	39.6959	38.2095	35.9438	38.2095	1690.84	1697.25	0.4307	0.0330	0.4319	0.0319	36.3177	38.8365
39.0	41.49%	4.74%	45.89%	1.61%	1.6330	1.6515	4.2283	-5.9409	3.3638	-4.1885	0.0748	0.0019	28.9596	36.8561	39.7102	38.2810	35.8709	38.2810	1691.87	1699.28	0.4356	0.0329	0.4369	0.0317	36.3532	38.8635
39.5	42.11%	4.68%	46.43%	1.61%	1.6312	1.6533	4.2420	-5.9685	3.3799	-4.2203	0.0745	0.0019	28.9281	36.9947	39.6959	38.2667	35.8855	38.2667	1698.43	1704.13	0.4414	0.0326	0.4427	0.0314	36.4138	38.9086

SR100 Serial No. 60451

Effects of long-term heat exposure on self-conatined self-rescuers

August 31, 2006

Time sec	Exp O2 percent	Exp CO2 percent	Ins O2 percent	Ins CO2 percent	Exp Vol liters	Ins Vol liters	Exp Pk Prs cm H2O	Ins Pk Prs cm H2O	Exp Av Prs cm H2O	Ins Av Prs cm H2O	xp CO2 Pk liters	hs CO2Min liters	VE Stpd liers/min	sWB EndT C	hsDB EndT C	kpDB EndT C	pWB EndT C	kpDB EndT C	ExpH2OVapr	InsH2OVapr	uthO2TAv	th CO2TAv	outhO2VAv	th CO2VAv	sWBAvgTp C	sDBAvgTp C
40.0	42.62%	4.72%	46.95%	1.61%	1.6331	1.6514	4.2696	-6.0236	3.3938	-4.2515	0.0732	0.0019	28.9619	37.0385	39.7817	38.4239	35.9438	38.4239	1704.06	1710.51	0.4467	0.0327	0.4478	0.0316	36.4579	38.9676
40.5	43.30%	4.65%	47.53%	1.58%	1.6350	1.6495	4.2531	-6.0568	3.4179	-4.2913	0.0719	0.0020	28.9951	37.1407	40.0389	38.4382	35.9730	38.4382	1711.32	1718.64	0.4531	0.0322	0.4541	0.0312	36.5191	39.0471
41.0	43.84%	4.68%	48.02%	1.60%	1.6332	1.6513	4.3248	-6.1064	3.4482	-4.3139	0.0726	0.0021	28.9635	37.1115	39.9961	38.4954	35.9803	38.4954	1714.14	1720.01	0.4582	0.0325	0.4593	0.0314	36.5515	39.0903
41.5	44.35%	4.73%	48.48%	1.64%	1.6315	1.6530	4.2972	-6.1230	3.4343	-4.3310	0.0741	0.0021	28.9328	37.2283	40.1533	38.4954	36.0606	38.4954	1712.75	1721.46	0.4630	0.0330	0.4642	0.0319	36.5924	39.1876
42.0	44.88%	4.74%	48.98%	1.66%	1.6333	1.6512	4.3386	-6.1340	3.4589	-4.3625	0.0752	0.0022	28.9653	37.2575	40.1390	38.5668	36.1263	38.5668	1726.88	1734.98	0.4681	0.0332	0.4693	0.0320	36.6887	39.2185
42.5	45.40%	4.77%	49.48%	1.67%	1.6351	1.6494	4.3855	-6.2003	3.4776	-4.3901	0.0734	0.0023	28.9976	37.4326	40.2104	38.4954	36.2066	38.4954	1734.86	1742.78	0.4734	0.0332	0.4744	0.0322	36.7451	39.2851
43.0	45.98%	4.77%	50.02%	1.66%	1.6334	1.6511	4.3800	-6.2030	3.4879	-4.4363	0.0731	0.0024	28.9668	37.4399	40.2819	38.5668	36.2358	38.5668	1739.02	1747.63	0.4790	0.0331	0.4800	0.0322	36.8113	39.3746
43.5	46.71%	4.70%	50.60%	1.63%	1.6334	1.6511	4.3800	-6.2858	3.4951	-4.4717	0.0722	0.0025	28.9675	37.5859	40.4248	38.7812	36.3087	38.7812	1748.03	1756.12	0.4856	0.0326	0.4866	0.0317	36.8874	39.4399
44.0	47.46%	4.77%	51.27%	1.68%	1.6318	1.6528	4.3966	-6.3217	3.5084	-4.5029	0.0727	0.0026	28.9378	37.6369	40.5535	38.7812	36.3233	38.7812	1750.91	1759.45	0.4927	0.0332	0.4937	0.0323	36.9402	39.5225
44.5	48.28%	4.78%	52.02%	1.70%	1.6336	1.6509	4.4214	-6.3686	3.5277	-4.5362	0.0740	0.0027	28.9701	37.7318	40.4963	38.8527	36.3817	38.8527	1758.39	1767.03	0.5004	0.0334	0.5015	0.0324	36.9957	39.5999
45.0	49.01%	4.80%	52.69%	1.73%	1.6354	1.6492	4.5070	-6.3989	3.5491	-4.5687	0.0738	0.0028	29.0016	37.8121	40.6678	39.0099	36.4693	39.0099	1766.44	1776.36	0.5075	0.0336	0.5085	0.0326	37.0636	39.6679
45.5	49.79%	4.79%	53.42%	1.72%	1.6337	1.6508	4.4904	-6.4928	3.5636	-4.5990	0.0740	0.0029	28.9718	37.8778	40.9965	38.9241	36.5277	38.9241	1773.70	1782.48	0.5150	0.0336	0.5160	0.0325	37.1385	39.7560
46.0	50.33%	4.92%	53.99%	1.78%	1.6320	1.6525	4.5290	-6.5424	3.5832	-4.6406	0.0751	0.0029	28.9423	37.9289	40.9537	39.1242	36.5277	39.1242	1777.43	1787.65	0.5206	0.0345	0.5216	0.0335	37.2045	39.8357
46.5	51.12%	4.81%	54.66%	1.75%	1.6338	1.6507	4.5456	-6.5480	3.6025	-4.6660	0.0730	0.0030	28.9735	38.0602	40.9965	39.1385	36.5642	39.1385	1787.89	1799.15	0.5279	0.0337	0.5289	0.0328	37.2920	39.9261
47.0	51.55%	4.89%	55.14%	1.77%	1.6338	1.6507	4.5732	-6.5618	3.6200	-4.6935	0.0741	0.0031	28.9740	38.1697	41.0680	39.2814	36.7101	39.2814	1794.41	1807.07	0.5325	0.0342	0.5334	0.0333	37.3590	39.9681
47.5	52.19%	4.85%	55.72%	1.76%	1.6355	1.6490	4.6063	-6.6087	3.6445	-4.7291	0.0736	0.0031	29.0045	38.2208	41.2395	39.3529	36.7320	39.3529	1802.81	1813.57	0.5386	0.0340	0.5395	0.0331	37.4066	40.0513
48.0	52.76%	4.84%	56.28%	1.75%	1.6339	1.6507	4.6560	-6.6308	3.6696	-4.7562	0.0732	0.0031	28.9752	38.3156	41.1395	39.3529	36.7831	39.3529	1807.55	1820.75	0.5443	0.0339	0.5452	0.0329	37.4871	40.1289
48.5	53.19%	4.89%	56.72%	1.78%	1.6322	1.6523	4.6725	-6.6970	3.6899	-4.7884	0.0750	0.0032	28.9460	38.4251	41.3538	39.3529	36.8488	39.3529	1816.11	1827.28	0.5486	0.0343	0.5496	0.0333	37.5650	40.2222
49.0	53.70%	4.84%	57.16%	1.77%	1.6339	1.6506	4.7112	-6.7549	3.7159	-4.8187	0.0734	0.0033	28.9761	38.4251	41.3538	39.4958	36.9290	39.4958	1824.94	1837.72	0.5533	0.0340	0.5543	0.0330	37.6422	40.3052
49.5	54.08%	4.89%	57.55%	1.79%	1.6356	1.6489	4.7277	-6.7522	3.7429	-4.8397	0.0746	0.0034	29.0060	38.5711	41.4110	39.5244	36.9655	39.5244	1834.25	1846.88	0.5572	0.0344	0.5581	0.0334	37.7049	40.3565
50.0	54.43%	4.91%	57.91%	1.78%	1.6340	1.6506	4.7664	-6.7963	3.7684	-4.8664	0.0737	0.0034	28.9766	38.6440	41.5682	39.4958	37.0385	39.4958	1839.35	1851.73	0.5608	0.0344	0.5617	0.0335	37.7624	40.4015
50.5	54.66%	4.93%	58.13%	1.82%	1.6323	1.6522	4.7719	-6.8515	3.7781	-4.8966	0.0758	0.0034	28.9475	38.6878	41.6397	39.5244	37.0239	39.5244	1841.37	1854.86	0.5630	0.0348	0.5640	0.0337	37.8083	40.4571
51.0	54.85%	4.97%	58.35%	1.82%	1.6340	1.6505	4.8078	-6.8929	3.7979	-4.9288	0.0751	0.0036	28.9771	38.6805	41.7112	39.7817	37.1115	39.7817	1850.58	1863.18	0.5651	0.0349	0.5660	0.0340	37.8639	40.5056
51.5	55.14%	4.87%	58.54%	1.80%	1.6356	1.6489	4.8271	-6.9619	3.8178	-4.9708	0.0745	0.0036	29.0067	38.7462	41.6969	39.6387	37.1407	39.6387	1856.84	1869.90	0.5674	0.0344	0.5684	0.0334	37.9026	40.5211
52.0	55.25%	4.91%	58.67%	1.81%	1.6340	1.6505	4.8492	-6.9619	3.8433	-4.9837	0.0735	0.0037	28.9773	38.7900	41.6397	39.6387	37.1845	39.6387	1861.20	1873.73	0.5688	0.0345	0.5696	0.0336	37.9524	40.5677
52.5	55.30%	4.97%	58.70%	1.86%	1.6340	1.6505	4.9044	-6.9757	3.8887	-4.9958	0.0752	0.0037	28.9772	38.9360	41.8541	39.7102	37.1845	39.7102	1867.27	1881.99	0.5691	0.0351	0.5700	0.0341	38.0230	40.6275
53.0	55.42%	4.98%	58.79%	1.88%	1.6323	1.6522	4.9154	-7.0613	3.8671	-5.0406	0.0764	0.0039	28.9479	38.8630	41.8684	39.7531	37.1991	39.7531	1870.22	1883.89	0.5701	0.0353	0.5711	0.0343	38.0606	40.6889
53.5	55.47%	5.00%	58.85%	1.89%	1.6340	1.6505	4.9595	-7.0723	3.8965	-5.0648	0.0757	0.0039	28.9772	38.9724	42.0685	39.7817	37.2575	39.7817	1875.69	1888.05	0.5707	0.0354	0.5716	0.0345	38.0880	40.7635
54.0	55.50%	5.03%	58.86%	1.91%	1.6356	1.6489	4.9706	-7.1054	3.9112	-5.0989	0.0769	0.0040	29.0066	39.0381	42.0970	39.9246	37.3450	39.9246	1879.83	1894.97	0.5708	0.0358	0.5718	0.0347	38.1380	40.8505
54.5	55.55%	5.02%	58.88%	1.92%	1.6340	1.6505	5.0009	-7.1413	3.9323	-5.1197	0.0770	0.0042	28.9771	39.0819	42.1399	39.9961	37.4034	39.9961	1887.77	1902.03	0.5712	0.0357	0.5721	0.0347	38.2078	40.8691
55.0	55.51%	5.05%	58.83%	1.92%	1.6323	1.6522	5.0368	-7.2158	3.9604	-5.1502	0.0759	0.0043	28.9475	39.1841	42.2114	39.9246	37.4326	39.9246	1893.30	1907.36	0.5709	0.0358	0.5717	0.0348	38.2735	40.9493
55.5	55.49%	5.06%	58.78%	1.94%	1.6340	1.6506	5.0561	-7.2793	3.9748	-5.1878	0.0769	0.0043	28.9767	39.2644	42.4258	40.1390	37.5494	40.1390	1902.47	1917.92	0.5704	0.0361	0.5714	0.0350	38.3506	41.0400
56.0	55.51%	5.02%	58.78%	1.91%	1.6356	1.6489	5.1141	-7.2931	3.9976	-5.2166	0.0756	0.0043	29.0060	39.4176	42.3829	40.2104	37.5202	40.2104	1911.35	1927.87	0.5706	0.0356	0.5714	0.0347	38.4204	41.1140
56.5	55.42%	5.03%	58.68%	1.92%	1.6339	1.6506	5.1113	-7.3207	4.0199	-5.2486	0.0758	0.0044	28.9763	39.4468	42.4972	40.1390	37.6953	40.1390	1918.47	1935.39	0.5696	0.0357	0.5705	0.0348	38.5053	41.2187
57.0	55.32%	5.07%	58.56%	1.95%	1.6322	1.6523	5.1693	-7.3593	4.0442	-5.2784	0.0762	0.0045	28.9463	39.6220	42.6116	40.2104	37.6661	40.2104	1926.64	1942.27	0.5686	0.0361	0.5694	0.0351	38.5803	41.2855
57.5	55.12%	5.15%	58.42%	1.97%	1.6339	1.6506	5.1803	-7.3896	4.0612	-5.3118	0.0765	0.0046	28.9756	39.5563	42.6402	40.2819	37.6953	40.2819	1932.23	1949.44	0.5669	0.0365	0.5677	0.0356	38.6266	41.3429
58.0	54.98%	5.16%	58.24%	1.99%	1.6356	1.6490	5.1913	-7.4476	4.0807	-5.3451	0.0777	0.0045	29.0050	39.7095	42.7831	40.3820	37.7537	40.3820	1940.78	1958.98	0.5653	0.0367	0.5661	0.0357	38.6885	41.3892
58.5	54.84%	5.14%	58.10%	1.97%	1.6339	1.6507	5.2355	-7.5138	4.0965	-5.3813	0.0771	0.0046	28.9750	39.7022	42.7116	40.4248	37.8048	40.4248	1945.19	1964.05	0.5639	0.0365	0.5647	0.0355	38.7432	41.4090
59.0	54.70%	5.11%	57.88%	1.99%	1.6338	1.6507	5.2769	-7.5690	4.1182	-5.4210	0.0772	0.0047	28.9746	39.8482	42.8545	40.3534	37.8413	40.3534	1951.89	1971.70	0.5621	0.0365	0.5629	0.0355	38.8095	41.4820
59.5	54.64%	5.04%	57.75%	1.96%	1.6321	1.6524	5.3238	-7.5911	4.1518	-5.4616	0.0761	0.0046	28.9443	39.8263	42.8403	40.4963	37.8997	40.4963	1957.88	1976.93	0.5611	0.0360	0.5619	0.0350	38.8745	41.5657
60.0	54.35%	5.15%	57.51%	1.99%	1.6338	1.6507	5.2907	-7.6932	4.1262	-5.5143	0.0763	0.0047	28.9737	39.9212	42.9975	40.6392	37.9872	40.6392	1967.53	1987.48	0.5586	0.0366	0.5593	0.0357	38.9467	41.6389
60.5	54.29%	5.05%	57.35%	1.97%	1.6355	1.6491	5.3569	-7.7125	4.1189	-5.5731	0.0758	0.0048	29.0035	40.0890	43.1261	40.5535	38.0164	40.5535	1977.37	1996.85	0.5574	0.0360	0.5582	0.0351	39.0090	41.7055
61.0	54.03%	5.08%	57.08%	1.98%	1.6338	1.6508	5.3597	-7.8312	4.1125	-5.6479	0.0766	0.0048	28.9730	40.2131	43.3548	40.7821	38.0967	40.7821	1987.03	2006.34	0.5548	0.0362	0.5556	0.0353	39.1101	41.8307
61.5	53.77%	5.12%	56.81%	2.02%	1.6320	1.6525	5.4011	-7.9112	4.0927	-5.7196	0.0782	0.0049	28.9419	40.2642	43.2976	40.7821	38.1624	40.7821	1995.89	2016.33	0.5520	0.0368	0.5529	0.0357	39.2124	41.9367
62.0	53.57%	5.11%	56.61%	1.97%	1.6337	1.6509	5.4149	-7.9002	4.0847	-5.7895	0.0759	0.0051	28.9716	40.3225	43.4262	41.0680	38.2427	41.0680	2009.77	2030.79	0.5501	0.0363	0.5509	0.0354	39.3172	42.0513
62.5	53.18%	5.20%	56.23%	2.04%	1.6354	1.6492	5.4563	-8.0437	4.0781	-5.8551	0.0774	0.0054	29.0016	40.5269	43.6406	41.0680	38.3667	41.0680	2022.47	2043.20	0.5463	0.0371	0.5471	0.0362	39.4031	42.1411
63.0	52.85%	5.26%	55.90%	2.06%	1.6336	1.6509	5.4839	-8.1347	4.0805	-5.9220	0.0789	0.0055	28.9705	40.5780	43.6406	41.2109	38.4251	41.2109	2030.49	2052.16	0.5429	0.0376	0.5437	0.0366	39.4929	42.2160
63.5	52.49%	5.28%	55.54%	2.07%	1.6318	1.6527	5.4894	-8.2313	4.0665	-5.9962	0.0779	0.0056	28.9389	40.6728	43.6978	41.1252	38.4835	41.1252	2033.84	2056.07	0.5394	0.0377	0.5401	0.0368	39.5414	42.2511
64.0	52.19%	5.26%	55.20%	2.08%	1.6335	1.6510	5.5253	-8.2865	4.0775	-6.0694	0.0785	0.0056	28.9690	40.6874	43.7121	41.2824	38.5346	41.2824	2047.83	2068.46	0.5361	0.0377	0.5369	0.0367	39.6241	42.3240
64.5	51.95%	5.20%	54.90%	2.07%	1.6335	1.6510	5.5391	-8.3141	4.0860	-6.1189	0.0786	0.0056	28.9684	40.9064	43.7836	41.2109	38.6076	41.2109	2055.16	2081.24	0.5334	0.0374	0.5343	0.0364	39.7249	42.3978
65.0	51.53%	5.26%	54.50%	2.08%	1.6352	1.6493	5.5998	-8.4300	4.1179	-6.1717	0.0784	0.0058	28.9990	40.9356	43.9837	41.2967	38.6294	41.2967	2066.61	2089.55	0.5294	0.0376	0.5301	0.0367	39.7753	42.4525
65.5	50.99%	5.35%	54.00%	2.11%	1.6334	1.6511	5.6770	-8.4659	4.1328	-6.2282	0.0788	0.0060	28.9671	40.9794	44.0694	41.4253	38.7535	41.4253	2072.56	2096.05	0.5243	0.0382	0.5250	0.0373	39.8478	42.5306
66.0	50.58%	5.29%	53.52%	2.11%	1.6316	1.6529	5.6770	-8.5625	4.1480	-6.2829	0.0767	0.0062	28.9345	41.1107	44.1552	41.4682	38.7754	41.4682	2079.32	2102.71	0.5199	0.0378	0.5205	0.0370	39.9234	42.6209
66.5	49.95%	5.40%	52.89%	2.17%	1.6333	1.6512	5.6908	-8.6177	4.1620	-6.3603	0.0793	0.0065	28.9649	41.1618	44.2123	41.5682	38.8995	41.5682	2089.97	2112.23	0.5135	0.0388	0.5142	0.0379	39.9847	42.6961
67.0	49.42%	5.39%	52.31%	2.19%	1.6351	1.6495	5.7212	-8.7060	4.1837	-6.4303	0.0792	0.0065	28.9963	41.1399	44.3838	41.6397	38.8046	41.6397	2086.50	2111.43	0.5080	0.0388	0.5087	0.0379	39.9739	42.7762
67.5	48.73%	5.47%	51.65%	2.21%	1.6332	1.6513	5.7322	-8.7694	4.1865	-6.4571	0.0805	0.0069	28.9634	41.0158	44.4982	41.6397	38.8630	41.6397	2084.82	2100.24	0.5012	0.0393	0.5019	0.0384	39.9399	42.9796
68.0	48.17%	5.40%	50.99%	2.24%	1.6313	1.6532	5.7874	-8.7170	4.1892	-6.4361	0.0805	0.0070	28.9300	41.1691	44.6125	41.8684	38.8922	41.8684	2089.39	2110.99	0.4949	0.0392	0.4958	0.0382	40.0434	43.0639
68.5	47.49%	5.39%	50.33%	2.20%	1.6331	1.6515	5.8150	-8.8798	4.2159	-6.5375	0.0795	0.0072	28.9608	41.2348	44.6411	41.7826	38.9360	41.7826	2098.47	2121.08	0.4883	0.0390	0.4891	0.0380	40.0945	43.0371
69.0	46.67%	5.46%	49.52%	2.25%	1.6348	1.6497	5.8537	-8.8715	4.2543	-6.5931	0.0806	0.0075	28.9925	41.2275	44.6697	41.9255	39.0089	41.9255	2102.93	2127.23	0.4802	0.0396	0.4810	0.0386	40.1294	43.0981
69.5	45.68%	5.57%	48.55%	2.31%	1.6329	1.6516	5.8978	-9.0040	4.2738	-6.6490	0.0818	0.0080	28.9580	41.3078	44.7126	41.9970	39.0819	41.9970	2107.19	2131.91	0.4703	0.0404	0.4711	0.0394	40.1834	43.1279
70.0	44.43%	5.80%	47.41%	2.41%	1.6328	1.6517	5.9392	-9.0454	4.3140	-6.6439	0.0848	0.0086	28.9561	41.3442	44.7840	42.0685	39.0454	42.0685	2112.14	2134.19	0.4584	0.0421	0.4592	0.0411	40.2100	43.2002
70.5	42.65%	5.86%	45.69%	2.48%	1.6307	1.6539	6.0082	-9.0150	4.3656	-6.6780	0.0860	0.0091	28.9183	41.4026	44.7840	41.9255	39.0673	41.9255	2111.41	2135.37	0.4408	0.0427	0.4417	0.0417	40.2376	43.2006
71.0	40.45%	5.84%	43.59%	2.46%	1.6323	1.6522	6.1186	-9.1282	4.3954	-6.7063	0.0844	0.0090	28.9476	41.4537	44.9269	41.9255	39.1914	41.9255	2119.85	2145.67	0.4195	0.0424	0.4202	0.0415	40.2992	43.2398
71.5	38.51%	5.65%	41.58%	2.39%	1.6341	1.6504	6.0744	-9.1917	4.3850	-6.7987	0.0835	0.0087	28.9791	41.5194	44.8412	41.9827	39.1841	41.9827	2130.83	2156.99	0.3996	0.0412	0.4005	0.0402	40.3727	43.3262
72.0	37.03%	5.65%	39.96%	2.39%	1.6318	1.6527	6.0496	-9.3214	4.3998	-6.8838	0.0831	0.0087	28.9392	41.6726	45.0699	42.1399	39.2279	42.1399	2134.34	2162.24	0.3841	0.0413	0.3849	0.0402	40.4364	43.3781
72.5	35.77%	5.58%	38.58%	2.37%	1.6295	1.6551	6.0855	-9.4455	4.3763	-6.9767	0.0830	0.0090	28.8971	41.6945	45.0127	42.0970	39.2717	42.0970	2139.17	2166.42	0.3708	0.0409	0.3717	0.0397	40.4962	43.4480
73.0	34.13%	5.82%	36.99%	2.46%	1.6313	1.6532	6.0496	-9.4593	4.3639	-7.0606	0.0850	0.0094	28.9298	41.7456	45.0699	42.2114	39.2644	42.2114	2145.69	2173.97	0.3548	0.0424	0.3556	0.0414	40.5415	43.5256
73.5	32.39%	5.92%	35.13%	2.58%	1.6333	1.6512	6.1407	-9.5670	4.3899	-7.1064	0.0875	0.0099	28.9647	41.8405	45.2414	42.3257	39.3884	42.3257	2154.39	2182.18	0.3368	0.0437	0.3376	0.0425	40.5866	43.5766
74.0	29.91%	6.32%	32.73%	2.80%	1.6306	1.6539	6.2704	-9.5559	4.4428	-7.1308	0.0930	0.0112	28.9179	41.7821	45.2128	42.3543	39.3373	42.3543	2151.10	2182.48	0.3124	0.0468	0.3132	0.0456	40.6145	43.5901
74.5	27.40%	6.07%	30.18%	2.65%	1.6275	1.6570	6.2621	-9.6884	4.4246	-7.2591	0.0873	0.0111	28.8619	41.8405	45.2414	42.2114	39.3300	42.2114	2150.17	2180.29	0.2871	0.0447	0.2879	0.0436	40.6326	43.6201
75.0	25.19%	5.99%	27.87%	2.64%	1.6292	1.6553	6.2290	-9.8319	4.3713	-7.4268	0.0886	0.0109	28.8924	41.8916	45.4272	42.3543	39.4103	42.3543	2158.47	2189.88	0.2644	0.0444	0.2653	0.0432	40.6962	43.7245
75.5	23.11%	6.21%	25.72%	2.76%	1.6285	1.6560	6.2014	-9.9423	4.3409	-7.5501	0.0919	0.0115	28.8801	42.0375	45.4986	42.4258	39.4833	42.4258	2164.28	2197.76	0.2433	0.0461	0.2442	0.0448	40.7632	43.7765
			58.88%	2.80%			6.2704	-3.2640																		
			11.87%	0.54%			2.8760	-9.9423																		
			36.73%	1.72%																						

SR100 Serial No. 60487

Effects of long-term heat exposure on self-contained self-rescuers

August 31, 2006

Time sec	Exp O2 percent	Exp CO2 percent	Ins O2 percent	Ins CO2 percent	Exp Vol liters	Ins Vol liters	Exp Pk Prs cm H2O	Ins Pk Prs cm H2O	Exp Av Prs cm H2O	Ins Av Prs cm H2O	Exp CO2 Pk liters	Ins CO2Min liters	VE Stpd liers/min	sWB EndT C	sDB EndT C	pDB EndT C	pWB EndT C	pDB EndT C	ExpH2OVapr	InsH2OVapr	uthO2TAv	th CO2TAv	uthO2VAv	th CO2VAv	sWBAvgTp C	sDBAvgTp C
0.0	0.00%	0.00%	0.00%	0.00%	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.00	0.00	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.5	23.73%	0.29%	23.31%	0.24%	1.9595	1.6483	1.0409	-0.9791	0.2144	-0.1959	0.0033	0.0008	25.5592	20.2896	20.2771	25.2891	25.4349	25.2891	786.58	789.70	0.2107	0.0021	0.2352	0.0026	20.8509	20.8013
1.0	21.45%	0.25%	21.47%	0.36%	1.6373	1.6425	1.2948	-1.0012	0.2675	-0.2307	0.0045	0.0019	29.0355	25.3474	25.2891	25.2320	25.2306	25.2320	884.26	882.55	0.2146	0.0031	0.2146	0.0030	25.2446	25.2382
1.5	20.00%	1.63%	19.24%	0.44%	1.6262	1.6536	6.3117	-66.2242	-4.7193	-30.3049	0.0289	-0.0002	28.8388	22.5523	23.4883	27.6331	27.4054	27.6331	861.12	856.82	0.1961	0.0110	0.1962	0.0104	24.9860	25.5187
2.0	14.82%	4.96%	15.59%	1.72%	1.6242	1.6556	6.4773	-50.6463	-4.2751	-17.3858	0.0688	0.0006	28.8036	24.7416	25.9180	28.9909	28.7190	28.9909	943.34	943.02	0.1525	0.0336	0.1520	0.0334	26.6950	27.3154
2.5	15.19%	4.54%	16.76%	1.81%	1.6184	1.6614	8.1055	-3.7497	5.5467	-1.3382	0.0552	0.0026	28.7016	26.8945	27.7474	29.6912	29.2882	29.6912	1039.12	1018.53	0.1602	0.0308	0.1597	0.0318	28.0108	28.6354
3.0	13.19%	3.75%	14.91%	1.05%	1.6215	1.6583	5.1389	-7.7622	3.9847	-5.3477	0.0625	-0.0002	28.7559	25.6174	27.9190	30.5631	29.4852	30.5631	996.12	976.92	0.1402	0.0253	0.1405	0.0240	27.6077	29.1773
3.5	9.78%	4.87%	12.45%	1.34%	1.6224	1.6575	5.0589	-7.9112	3.7171	-5.5659	0.0776	-0.0001	28.7711	25.6685	28.2048	30.6059	29.6385	30.6059	1000.83	984.30	0.1112	0.0325	0.1111	0.0311	27.7589	29.4631
4.0	8.01%	4.84%	10.92%	1.28%	1.6148	1.6650	4.9319	-8.0243	3.5713	-5.7354	0.0747	-0.0001	28.6375	25.9458	28.6336	30.9204	29.9231	30.9204	1013.37	996.51	0.0948	0.0318	0.0947	0.0306	28.0281	29.7459
4.5	6.74%	4.70%	9.74%	1.20%	1.6052	1.6746	4.9595	-8.1209	3.5272	-5.8612	0.0702	-0.0002	28.4662	26.3107	29.2910	31.2920	30.1348	31.2920	1022.72	1001.49	0.0826	0.0305	0.0824	0.0295	28.2640	30.2007
5.0	5.79%	4.58%	8.75%	1.15%	1.6072	1.6726	4.9733	-8.2727	3.4760	-6.0266	0.0670	-0.0001	28.5026	26.7486	29.7055	31.6350	30.4340	31.6350	1055.11	1028.59	0.0728	0.0295	0.0727	0.0287	28.6361	30.4955
5.5	4.81%	4.52%	7.71%	1.11%	1.6105	1.6693	4.9264	-8.3748	3.4850	-6.1286	0.0637	-0.0002	28.5604	27.6827	29.9199	31.6350	31.0397	31.6350	1115.58	1088.51	0.0629	0.0288	0.0626	0.0282	29.3419	30.7078
6.0	3.98%	4.42%	6.79%	1.10%	1.5980	1.6818	5.0837	-8.2175	3.5164	-6.0955	0.0612	-0.0001	28.3387	28.8649	30.1343	31.7779	31.8206	31.7779	1194.42	1167.80	0.0541	0.0281	0.0538	0.0276	30.3495	30.9141
6.5	4.29%	4.47%	6.94%	1.17%	1.5873	1.6925	5.3017	-7.8560	3.7480	-5.8041	0.0637	-0.0001	28.1499	29.8136	30.3773	31.9780	32.5285	31.9780	1256.13	1228.96	0.0562	0.0289	0.0561	0.0282	31.1327	31.1695
7.0	5.72%	5.28%	8.52%	1.52%	1.6053	1.6745	5.5943	-7.5828	4.0488	-5.4339	0.0784	-0.0001	28.4686	30.4340	30.7060	32.2067	33.0977	32.2067	1325.57	1297.96	0.0711	0.0349	0.0712	0.0340	31.7500	31.4734
7.5	5.87%	5.23%	9.19%	1.41%	1.6071	1.6728	5.5115	-7.8864	4.0343	-5.5748	0.0757	-0.0001	28.4996	30.7259	30.8489	32.4211	33.2436	32.4211	1350.14	1319.72	0.0753	0.0341	0.0753	0.0332	31.9717	31.5860
8.0	5.87%	4.67%	9.48%	1.18%	1.6140	1.6658	5.2907	-8.2092	3.8099	-5.9110	0.0664	-0.0001	28.6231	31.0981	31.1776	32.6069	33.4918	32.6069	1382.88	1349.71	0.0769	0.0300	0.0768	0.0292	32.2334	31.7263
8.5	5.83%	4.44%	9.43%	1.13%	1.6076	1.6722	5.2217	-8.2589	3.7343	-6.0155	0.0637	-0.0001	28.5093	31.4922	31.2777	32.6355	33.7180	32.6355	1403.09	1370.48	0.0765	0.0286	0.0763	0.0278	32.5210	31.9231
9.0	5.77%	4.40%	9.34%	1.11%	1.6006	1.6792	5.1362	-8.4852	3.5653	-6.2642	0.0632	-0.0001	28.3846	31.6819	31.5778	32.7784	33.8421	32.7784	1417.02	1384.06	0.0757	0.0283	0.0756	0.0276	32.7446	32.1203
9.5	5.69%	4.42%	9.24%	1.11%	1.6067	1.6731	5.0561	-8.7418	3.2677	-6.8214	0.0627	-0.0001	28.4940	31.9665	31.7779	32.9928	34.0464	32.9928	1440.43	1408.75	0.0749	0.0284	0.0747	0.0277	32.9597	32.2983
10.0	5.47%	4.51%	9.03%	1.12%	1.6128	1.6670	4.9927	-24.3805	1.1333	-10.4374	0.0630	-0.0001	28.6021	32.1782	31.9780	33.0642	34.1048	33.0642	1456.00	1427.76	0.0728	0.0288	0.0725	0.0282	33.1104	32.4322
10.5	4.85%	4.99%	8.91%	1.20%	1.6044	1.6754	4.5318	-65.9896	-9.0495	-24.2868	0.0671	0.0001	28.4527	32.1125	31.9208	32.9928	34.1924	32.9928	1434.18	1421.32	0.0695	0.0314	0.0688	0.0309	33.1175	32.4195
11.0	7.28%	4.62%	9.22%	2.83%	1.5786	1.7012	5.1141	-28.6082	-4.1520	-10.4056	0.0591	0.0153	27.9950	32.1782	31.8065	33.0071	33.7545	33.0071	1387.73	1376.69	0.0836	0.0370	0.0825	0.0373	32.9029	32.3956
11.5	12.71%	3.81%	16.27%	0.83%	1.6209	1.6590	8.5194	-5.6787	6.1039	-2.7631	0.0457	0.0007	28.7444	31.2367	31.5635	32.7784	33.0977	32.7784	1365.11	1330.99	0.1449	0.0232	0.1449	0.0232	32.0836	32.2012
12.0	10.86%	4.18%	13.99%	1.21%	1.6231	1.6568	5.4673	-8.1099	4.2627	-5.5982	0.0673	-0.0001	28.7834	31.2732	31.8637	32.8355	33.1123	32.8355	1360.31	1339.31	0.1237	0.0281	0.1242	0.0270	32.1595	32.2669
12.5	9.52%	4.79%	13.02%	1.36%	1.6172	1.6626	5.4701	-8.2175	4.2188	-5.6505	0.0738	-0.0001	28.6799	31.6746	31.9208	32.7784	33.1707	32.7784	1375.45	1355.70	0.1125	0.0319	0.1127	0.0308	32.3699	32.3006
13.0	9.18%	4.71%	12.67%	1.32%	1.6162	1.6636	5.4149	-8.3279	4.0096	-5.8942	0.0726	0.0000	28.6617	31.9665	32.0638	32.8498	33.3531	32.8498	1398.33	1378.08	0.1089	0.0313	0.1092	0.0302	32.6091	32.3962
13.5	8.78%	4.74%	12.22%	1.33%	1.6104	1.6694	5.4121	-8.3748	3.9079	-5.9968	0.0729	0.0000	28.5593	32.2073	32.3210	32.7784	33.5793	32.7784	1418.34	1398.49	0.1047	0.0315	0.1050	0.0303	32.8718	32.5211
14.0	8.11%	4.71%	11.59%	1.29%	1.6139	1.6660	5.4011	-8.3969	3.8668	-6.0527	0.0709	0.0001	28.6204	32.5503	32.4925	33.0642	33.7180	33.0642	1443.53	1422.55	0.0984	0.0310	0.0985	0.0300	33.1005	32.6991
14.5	7.67%	4.70%	11.12%	1.25%	1.6183	1.6615	5.2355	-8.7060	3.7676	-6.2336	0.0698	0.0001	28.6985	32.7912	32.7212	33.2929	33.9880	33.2929	1468.82	1447.72	0.0937	0.0307	0.0940	0.0298	33.3335	32.9101
15.0	7.25%	4.70%	10.59%	1.27%	1.6117	1.6681	5.2769	-8.6315	3.7625	-6.2596	0.0700	0.0002	28.5818	33.0247	32.9213	33.6359	34.1559	33.6359	1483.39	1460.94	0.0889	0.0308	0.0892	0.0298	33.5518	33.1621
15.5	6.62%	4.62%	9.89%	1.23%	1.6036	1.6762	5.1913	-8.8495	3.6411	-6.4388	0.0685	0.0002	28.4378	33.2582	33.2357	33.6931	34.3091	33.6931	1492.09	1470.16	0.0822	0.0302	0.0825	0.0293	33.7333	33.3339
16.0	6.20%	4.66%	9.37%	1.22%	1.6078	1.6720	5.0837	-9.0868	3.5093	-6.6679	0.0685	0.0003	28.5129	33.5355	33.3501	33.7789	34.4843	33.7789	1514.42	1492.37	0.0776	0.0303	0.0778	0.0294	33.9290	33.5101
16.5	5.60%	4.65%	8.75%	1.23%	1.6127	1.6671	5.0147	-9.1254	3.3879	-6.8879	0.0666	0.0004	28.5992	33.6669	33.6359	33.9789	34.6010	33.9789	1533.15	1510.53	0.0716	0.0302	0.0717	0.0294	34.0706	33.6278
17.0	4.80%	4.69%	7.90%	1.20%	1.6030	1.6768	4.9595	-25.8375	1.2430	-11.1091	0.0648	0.0005	28.4277	33.7910	33.6359	33.9932	34.6302	33.9932	1533.13	1512.75	0.0633	0.0301	0.0635	0.0295	34.1845	33.7074
17.5	3.86%	5.05%	7.24%	1.30%	1.5891	1.6907	5.1362	-53.2789	-6.0908	-19.0020	0.0666	0.0009	28.1812	33.6377	33.4072	33.8646	34.6010	33.8646	1504.80	1494.70	0.0556	0.0322	0.0555	0.0318	34.1388	33.6968
18.0	4.13%	4.59%	6.98%	1.32%	1.5957	1.6841	5.9392	-8.1899	4.1605	-5.9362	0.0635	0.0007	28.2987	33.7180	33.7074	34.2076	34.5937	34.2076	1515.12	1492.68	0.0555	0.0300	0.0556	0.0295	34.0976	33.8969
18.5	5.53%	5.02%	8.43%	1.48%	1.6030	1.6768	5.8426	-8.3693	4.2987	-5.9741	0.0739	0.0009	28.4280	33.8275	33.9932	34.2791	34.6667	34.2791	1524.10	1505.04	0.0693	0.0334	0.0698	0.0325	34.1658	34.0041
19.0	6.42%	5.42%	9.88%	1.52%	1.6148	1.6650	5.5777	-8.9267	4.0030	-6.3901	0.0788	0.0011	28.6377	33.9588	34.2076	34.3791	34.7178	34.3791	1546.84	1527.54	0.0810	0.0356	0.0815	0.0347	34.2850	34.1169
19.5	6.55%	4.85%	10.14%	1.31%	1.6093	1.6705	5.4563	-9.1420	3.8274	-6.6931	0.0697	0.0011	28.5398	34.1924	34.2076	34.5649	34.9586	34.5649	1565.03	1544.18	0.0831	0.0316	0.0834	0.0308	34.5022	34.2697
20.0	6.63%	4.68%	10.21%	1.30%	1.6034	1.6764	5.2797	-10.4942	3.3836	-7.5376	0.0677	0.0012	28.4345	34.5135	34.3791	34.7221	35.2432	34.7221	1593.17	1571.67	0.0837	0.0307	0.0842	0.0299	34.8210	34.4412
20.5	6.36%	4.98%	10.06%	1.37%	1.6089	1.6710	5.0009	-53.8336	-4.1321	-19.0774	0.0703	0.0016	28.5315	34.5572	34.3505	34.7079	35.3965	34.7079	1606.27	1593.50	0.0818	0.0325	0.0821	0.0318	34.9690	34.4771
21.0	6.56%	5.35%	10.71%	1.49%	1.6160	1.6638	4.9044	-66.0724	-9.1539	-25.2853	0.0754	0.0019	28.6591	34.4843	34.0933	34.8365	35.4184	34.8365	1604.34	1598.63	0.0864	0.0350	0.0864	0.0342	34.9533	34.4854
21.5	6.47%	5.36%	10.58%	1.50%	1.6104	1.6694	5.0837	-66.0448	-8.4455	-23.2774	0.0735	0.0021	28.5598	34.4843	34.3505	34.7793	35.3600	34.7793	1589.09	1581.66	0.0852	0.0349	0.0853	0.0343	34.8698	34.5758
22.0	6.68%	5.33%	10.85%	1.51%	1.6047	1.6752	5.0368	-66.0724	-8.6406	-23.6545	0.0736	0.0022	28.4572	34.3675	34.2076	34.9508	35.3600	34.9508	1579.34	1574.11	0.0876	0.0349	0.0877	0.0342	34.8603	34.6184
22.5	6.56%	5.34%	10.78%	1.52%	1.6103	1.6695	5.1251	-66.0724	-8.2372	-22.5431	0.0737	0.0024	28.5580	34.4478	34.4935	34.9222	35.3600	34.9222	1586.23	1579.20	0.0865	0.0350	0.0867	0.0343	34.8639	34.6659
23.0	11.22%	4.39%	13.41%	2.77%	1.6070	1.6728	7.3218	-4.9088	2.6077	-0.6140	0.0517	0.0179	28.4985	33.9004	33.8074	34.5506	34.8346	34.5506	1542.72	1527.14	0.1239	0.0353	0.1232	0.0358	34.3466	34.1250
23.5	13.14%	3.48%	16.36%	1.03%	1.6211	1.6587	6.0634	-8.3969	4.6922	-5.7270	0.0547	0.0013	28.7483	34.0829	34.2076	34.8508	35.4330	34.8508	1591.68	1574.95	0.1465	0.0235	0.1475	0.0225	34.7032	34.4616
24.0	12.08%	4.66%	15.75%	1.52%	1.6239	1.6559	5.7653	-8.6618	4.4431	-5.9504	0.0738	0.0016	28.7979	34.7762	34.6078	35.0080	35.8271	35.0080	1659.38	1638.92	0.1383	0.0322	0.1392	0.0309	35.2728	34.7588
24.5	12.25%	5.01%	16.16%	1.62%	1.6200	1.6598	5.7322	-8.7005	4.3395	-6.0431	0.0794	0.0018	28.7290	35.1411	34.7793	35.2081	36.0533	35.2081	1679.92	1658.20	0.1411	0.0345	0.1421	0.0331	35.5005	34.9681
25.0	12.65%	5.03%	16.65%	1.64%	1.6204	1.6594	5.8564	-8.6177	4.3398	-6.0223	0.0795	0.0019	28.7369	35.3235	34.9937	35.2796	36.1628	35.2796	1697.78	1675.44	0.1455	0.0347	0.1465	0.0333	35.6639	35.1180
25.5	12.91%	5.03%	17.03%	1.66%	1.6170	1.6628	5.8426	-8.6949	4.4913	-5.9023	0.0788	0.0021	28.6761	35.5352	35.2938	35.4654	36.2941	35.4654	1710.68	1688.28	0.1487	0.0347	0.1497	0.0334	35.8227	35.2640
26.0	13.33%	4.95%	17.60%	1.60%	1.6213	1.6585	5.9254	-8.6177	4.6094	-5.8578	0.0792	0.0021	28.7518	35.6884	35.4939	35.6369	36.4912	35.6369	1730.03	1705.89	0.1534	0.0342	0.1546	0.0327	35.9514	35.3960
26.5	13.98%	4.87%	18.21%	1.60%	1.6254	1.6544	5.8757	-8.6177	4.5687	-5.9262	0.0788	0.0021	28.8244	35.8271	35.5225	35.8084	36.5569	35.8084	1750.86	1727.54	0.1597	0.0338	0.1610	0.0323	36.1127	35.5262
27.0	14.79%	4.97%	18.98%	1.68%	1.6223	1.6576	5.8288	-8.8108	4.5190	-5.9954	0.0816	0.0021	28.7693	35.9438	35.7083	35.8513	36.6736	35.8513	1763.25	1738.87	0.1674	0.0348	0.1688	0.0333	36.2509	35.6532
27.5	15.68%	5.03%	19.99%	1.67%	1.6196	1.6602	5.9309	-8.7170	4.5861	-5.9521	0.0808	0.0022	28.7223	36.0898	35.6940	35.9227	36.7612	35.9227	1772.98	1749.34	0.1770	0.0349	0.1783	0.0335	36.3767	35.7717
28.0	16.58%	5.04%	20.99%	1.65%	1.6237	1.6561	5.9116	-8.6591	4.6474	-5.9223	0.0819	0.0023	28.7952	36.1993	36.0656	35.7798	36.8926	35.7798	1789.56	1764.90	0.1864	0.0350	0.1879	0.0335	36.4797	35.8605
28.5	17.50%	4.88%	21.91%	1.61%	1.6273	1.6525	5.9530	-8.7612	4.6552	-5.9622	0.0807	0.0022	28.8590	36.3233	36.1514	36.0371	36.9947	36.0371	1806.20	1780.41	0.1954	0.0341	0.1971	0.0325	36.5890	35.9718
29.0	18.63%	4.91%	22.95%	1.65%	1.6247	1.6551	5.9116	-8.8108	4.6177	-6.0424	0.0820	0.0022	28.8121	36.4547	36.2086	36.2800	37.0750	36.2800	1815.94	1792.15	0.2061	0.0345	0.2079	0.0328	36.7229	36.0889
29.5	19.82%	5.03%	24.17%	1.69%	1.6224	1.6574	5.9309	-8.8384	4.6305	-6.0484	0.0846	0.0023	28.7720	36.6444	36.2657	36.4372	37.2866	36.4372	1826.20	1803.15	0.2181	0.0353	0.2199	0.0336	36.8475	36.2067
30.0	21.02%	5.07%	25.36%	1.74%	1.6259	1.6539	5.9944	-8.8660	4.6822	-6.0233	0.0877	0.0023	28.8344	36.6736	36.4230	36.4230	37.3304	36.4230	1839.95	1815.70	0.2298	0.0360	0.2319	0.0340	36.9275	36.2854
30.5	21.91%	5.10%	26.44%	1.69%	1.6263	1.6535	6.0358	-8.9074	4.7088	-6.0427	0.0855	0.0022	28.8404	36.8561	36.4230	36.4230	37.4034	36.4230	1851.02	1825.65	0.2398	0.0357	0.2417	0.0339	37.0148	36.3670
31.0	23.07%	4.95%	27.58%	1.65%	1.6293	1.6505	6.0523	-8.9488	4.7154	-6.0766	0.0848	0.0022	28.8938	36.9072	36.6659	36.6088	37.4910	36.6088	1863.99	1838.49	0.2512	0.0349	0.2532	0.0330	37.1004	36.4478
31.5	24.50%	4.89%	28.86%	1.64%	1.6270	1.6528	6.0496	-8.9074	4.6823	-6.1615	0.0827	0.0021	28.8538	37.0750	36.6373	36.6373	37.5859	36.6373	1874.27	1850.24	0.2648	0.0344	0.2668	0.0327	37.2281	36.5589
32.0	26.13%	4.95%	30.38%	1.69%	1.6250	1.6548	6.0523	-8.9488	4.7109	-6.1688	0.0865	0.0020	28.8184	37.0823	36.7803	36.7231	37.7537	36.7231	1882.76	1858.45	0.2803	0.0352	0.2825	0.0332	37.3229	36.6491
32.5	27.64%	4.99%	31.95%	1.67%	1.6280	1.6518	6.1186	-9.0316	4.7721	-6.1543	0.0868	0.0019	28.8707	37.1845	36.8517	36.8517	37.6588	36.8517	1894.72	1870.34	0.2957	0.0353	0.2980	0.0333	37.3987	36.7173
33.0	29.05%	4.98%	33.43%	1.64%	1.6306	1.6492	6.1848	-8.9267	4.8116	-6.1721	0.0869	0.0019	28.9174	37.2575	36.9518	36.8946	37.8413	36.8946	1906.04	1880.88	0.3101	0.0352	0.3124	0.0331	37.4688	36.8020
33.5	30.33%	4.94%	34.72%	1.65%	1.6285	1.6513	6.2152	-9.0178	4.8396	-6.2093	0.0871	0.0018	28.8803	37.3669	36.9946	37.0661	37.8413	37.0661	1912.70	1886.99	0.3229	0.0350	0.3253	0.0329	37.5439	36.8680
34.0	31.65%	4.87%	36.06%	1.61%	1.6266	1.6532	6.1738	-9.0702	4.8422	-6.2582	0.0867	0.0017	28.8465	37.4618	37.1233	36.9518	37.9580	36.9518	1918.38	1892.29	0.3360	0.0345	0.3385	0.0324	37.6122	36.9418
34.5	33.44%	4.66%	37.58%	1.56%	1.6291	1.6507	6.2152	-9.1696	4.8379	-6.3428	0.0846	0.0016	28.8912	37.5859	37.0661	37.0661	38.0967	37.0661	1932.03	1907.51	0.3525	0.0332	0.3551	0.0311	37.7168	37.0156
35.0	35.00%	4.81%	39.11%	1.61%	1.6315	1.6483	6.2290	-9.2027	4.8497	-6.3651	0.0865	0.0016	28.9327	37.6077	37.2376	37.1805	38.1040	37.1805	1944.94	1920.24	0.3681	0.0343	0.3706	0.0321	37.8052	37.1028
35.5	36.52%	4.94%	40.67%	1.62%	1.6296	1.6502	6.2290	-9.3076	4.8888	-6.3935	0.0881	0.0017	28.8992	37.6588	37.3520	37.2805	38.2062	37.2805	1949.69	1924.76	0.3835	0.0349	0.3860	0.0328	37.8667	37.1756
36.0	38.09%	4.81%	42.09%	1.60%	1.6298	1.6500	6.2704	-9.3214	4.9214	-6.4208	0.0865	0.0017	28.9029	37.8413	37.3520	37.2805	38.2062	37.2805	1956.47	1930.76	0.3983	0.0342	0.4009	0.0321	37.9187	37.2346
36.5	39.45%	4.91%	43.50%	1.63%	1.6280	1.6518	6.3614	-9.3131	4.9553	-6.4409	0.0894	0.0017	28.8716	37.8413	37.3520	37.2948	38.3083	37.2948	1961.75	1935.48	0.4121	0.0350	0.4148	0.0327	37.9790	37.2966
37.0	40.81%	4.94%	44.86%	1.65%	1.6302	1.6496	6.3531	-9.3628	4.9912	-6.4616	0.0922	0.0017	28.9099	37.8778	37.4949	37.4949	38.3886	37.4949	1971.55	1945.38	0.4255	0.0353	0.4283	0.0329	38.0424	37.3535
37.5	41.84%	4.99%	46.00%	1.65%	1.6322	1.6476	6.4276	-9.3903	5.0079	-6.5002	0.0909	0.0018	28.9457	37.9580	37.6378	37.4663	38.3959	37.4663	1981.99	1956.59	0.4365	0.0355	0.4392	0.0332	38.1186	37.4259
38.0	43.03%	4.89%	47.11%	1.63%	1.6304	1.6494	6.4359	-9.5007	5.0252	-6.5238	0.0897	0.0017	28.9138	38.0602	37.5663	37.4949	38.4616	37.4949	1986.08	1958.52	0.4479	0.0349	0.4507	0.0326	38.1554	37.4692
38.5	44.16%	4.87%	48.19%	1.61%	1.6287	1.6512	6.4718	-9.4787	5.0490	-6.5858	0.0882	0.0018	28.8827	38.1332	37.7521	37.6378	38.4835	37.6378	1989.63	1963.94	0.4591	0.0346	0.4617	0.0324	38.2189	37.5191
39.0	45.38%	4.75%	49.27%	1.60%	1.6307	1.6492	6.5325	-9.5283	5.0587	-6.6331	0.0879	0.0017	28.9181	38.1697	37.7807	37.7093	38.6076	37.7093	2001.23	1974.46	0.4705	0.0340	0.4732	0.0317	38.2879	37.5788
39.5	46.81%	4.67%	50.49%	1.58%	1.6326	1.6472	6.4939	-9.6222	5.0613	-6.6904	0.0859	0.0018	28.9524	38.2792	37.8665	37.6950	38.6294	37.6950	2011.85	1984.52	0.4839	0.0334	0.4865	0.0312	38.3557	37.6527

SR100 Serial No. 60487

Effects of long-term heat exposure on self-contained self-rescuers

August 31, 2006

Time sec	Exp O2 percent	Exp CO2 percent	Ins O2 percent	Ins CO2 percent	Exp Vol liters	Ins Vol liters	Exp Pk Prs cm H2O	Ins Pk Prs cm H2O	Exp Av Prs cm H2O	Ins Av Prs cm H2O	Exp CO2 Pk liters	Ins CO2Min liters	VE Stpd liers/min	sWB EndT C	sDB EndT C	pDB EndT C	pWB EndT C	pDB EndT C	ExpH2OVapr	InsH2OVapr	uthO2TAvt	h CO2TAvt	uthO2VAvt	h CO2VAvt	sWBAvgTp C	sDBAvgTp C
40.0	48.02%	4.85%	51.68%	1.65%	1.6309	1.6490	6.5049	-9.6801	5.0837	-6.7276	0.0878	0.0018	28.9217	38.3886	37.9237	37.6378	38.6805	37.6378	2019.87	1993.20	0.4960	0.0347	0.4985	0.0325	38.4422	37.6992
40.5	49.45%	4.84%	53.05%	1.62%	1.6292	1.6506	6.5711	-9.7546	5.0995	-6.7734	0.0865	0.0019	28.8921	38.3959	38.0380	37.7521	38.8046	37.7521	2024.00	1998.23	0.5101	0.0343	0.5125	0.0323	38.5064	37.7832
41.0	50.73%	4.90%	54.26%	1.66%	1.6311	1.6487	6.5739	-9.7905	5.1215	-6.8191	0.0893	0.0019	28.9259	38.4981	38.1380	37.8522	38.7900	37.8522	2031.22	2005.69	0.5224	0.0350	0.5250	0.0328	38.5552	37.8615
41.5	51.82%	4.89%	55.30%	1.66%	1.6312	1.6486	6.6015	-9.8733	5.1428	-6.8644	0.0874	0.0020	28.9272	38.6076	38.2095	37.9951	38.8630	37.9951	2038.54	2012.01	0.5332	0.0349	0.5356	0.0328	38.6088	37.9166
42.0	53.04%	4.84%	56.48%	1.63%	1.6330	1.6468	6.6484	-9.9092	5.1759	-6.9030	0.0871	0.0020	28.9593	38.6294	38.3238	38.0380	38.8630	38.0380	2049.02	2022.14	0.5452	0.0345	0.5476	0.0324	38.6784	37.9994
42.5	54.24%	4.82%	57.62%	1.62%	1.6313	1.6485	6.7257	-9.9699	5.2046	-6.9492	0.0870	0.0021	28.9296	38.7170	38.3524	38.0666	38.9360	38.0666	2056.06	2029.81	0.5569	0.0343	0.5593	0.0322	38.7611	38.0813
43.0	55.41%	4.78%	58.73%	1.62%	1.6297	1.6501	6.7146	-10.0416	5.2365	-6.9794	0.0864	0.0020	28.9009	38.8922	38.4382	38.0952	39.0089	38.0952	2062.41	2034.78	0.5683	0.0341	0.5707	0.0320	38.8205	38.1405
43.5	56.36%	4.85%	59.66%	1.65%	1.6314	1.6484	6.7809	-10.0665	5.2760	-7.0109	0.0892	0.0021	28.9322	38.8630	38.4954	38.2095	39.0819	38.2095	2072.67	2043.59	0.5776	0.0348	0.5801	0.0325	38.8777	38.2056
44.0	57.40%	4.83%	60.69%	1.62%	1.6332	1.6466	6.8250	-10.1520	5.2998	-7.0612	0.0871	0.0022	28.9630	39.0381	38.6669	38.1523	39.1841	38.1523	2080.11	2053.14	0.5881	0.0344	0.5905	0.0323	38.9401	38.2691
44.5	58.28%	4.88%	61.59%	1.62%	1.6315	1.6483	6.8775	-10.1906	5.3267	-7.0912	0.0862	0.0022	28.9339	38.9724	38.7097	38.3524	39.1914	38.3524	2086.23	2057.92	0.5971	0.0345	0.5993	0.0325	38.9995	38.3392
45.0	59.10%	4.87%	62.36%	1.64%	1.6299	1.6499	6.9133	-10.1851	5.3651	-7.1192	0.0872	0.0022	28.9053	39.0965	38.7240	38.2095	39.1841	38.2095	2091.22	2062.72	0.6050	0.0347	0.6073	0.0325	39.0553	38.3847
45.5	59.76%	4.87%	63.06%	1.62%	1.6316	1.6482	6.9602	-10.3010	5.3929	-7.1335	0.0867	0.0023	28.9354	39.0819	38.8527	38.4954	39.3373	38.4954	2101.92	2073.23	0.6118	0.0345	0.6141	0.0325	39.1240	38.4441
46.0	60.37%	4.85%	63.60%	1.64%	1.6333	1.6465	7.0016	-10.3286	5.4170	-7.1861	0.0884	0.0022	28.9651	39.2717	38.8955	38.4954	39.3592	38.4954	2110.49	2081.58	0.6174	0.0347	0.6198	0.0325	39.1813	38.5351
46.5	60.96%	4.82%	64.20%	1.60%	1.6317	1.6481	6.9878	-10.3562	5.4383	-7.2227	0.0860	0.0023	28.9362	39.3738	38.8527	38.4239	39.4103	38.4239	2116.59	2088.42	0.6235	0.0342	0.6258	0.0321	39.2505	38.5722
47.0	61.54%	4.82%	64.69%	1.63%	1.6317	1.6481	7.0154	-10.3976	5.4647	-7.2677	0.0876	0.0023	28.9367	39.3738	38.9956	38.6383	39.4833	38.6383	2121.14	2091.73	0.6287	0.0345	0.6311	0.0322	39.2831	38.6383
47.5	62.15%	4.76%	65.25%	1.59%	1.6301	1.6497	7.1010	-10.4500	5.4876	-7.3022	0.0849	0.0023	28.9081	39.4468	39.0671	38.4954	39.4760	38.4954	2126.49	2095.89	0.6348	0.0338	0.6370	0.0318	39.3352	38.6923
48.0	62.63%	4.88%	65.74%	1.66%	1.6334	1.6464	7.0900	-10.5163	5.5092	-7.3517	0.0877	0.0024	28.9664	39.5052	39.2386	38.6097	39.5928	38.6097	2140.90	2110.76	0.6395	0.0349	0.6418	0.0327	39.4212	38.7650
48.5	63.18%	4.86%	66.26%	1.62%	1.6318	1.6481	7.1672	-10.5632	5.5371	-7.4016	0.0851	0.0024	28.9377	39.6292	39.4244	38.7097	39.6293	38.7097	2147.75	2118.43	0.6451	0.0344	0.6472	0.0324	39.5032	38.8565
49.0	63.69%	4.80%	66.68%	1.62%	1.6318	1.6480	7.1810	-10.6460	5.5612	-7.4459	0.0858	0.0024	28.9379	39.7387	39.3529	38.8527	39.7752	38.8527	2157.40	2127.78	0.6496	0.0342	0.6519	0.0321	39.5785	38.9226
49.5	64.09%	4.91%	67.11%	1.65%	1.6302	1.6497	7.2114	-10.6929	5.5802	-7.4939	0.0847	0.0025	28.9094	39.7679	39.4101	38.8384	39.7387	38.8384	2163.61	2134.14	0.6540	0.0347	0.6560	0.0328	39.6448	38.9688
50.0	64.75%	4.82%	67.64%	1.63%	1.6318	1.6480	7.2500	-10.7288	5.6043	-7.5393	0.0865	0.0025	28.9386	39.8482	39.4958	38.9241	39.7387	38.9241	2172.56	2142.13	0.6597	0.0344	0.6619	0.0323	39.6955	39.0375
50.5	65.30%	4.84%	68.13%	1.64%	1.6334	1.6464	7.2555	-10.8474	5.6307	-7.5901	0.0848	0.0025	28.9675	40.0306	39.5816	38.8955	39.8263	38.8955	2181.45	2152.08	0.6651	0.0344	0.6672	0.0324	39.7578	39.0913
51.0	66.02%	4.74%	68.75%	1.61%	1.6318	1.6480	7.3052	-10.9495	5.6539	-7.6350	0.0828	0.0025	28.9392	40.0306	39.4958	38.9241	39.8482	38.9241	2188.94	2158.06	0.6719	0.0337	0.6739	0.0318	39.8232	39.1540
51.5	66.56%	4.83%	69.28%	1.65%	1.6303	1.6496	7.2997	-10.9799	5.6779	-7.6818	0.0849	0.0025	28.9111	40.0890	39.6387	38.9527	39.8263	38.9527	2193.32	2162.40	0.6772	0.0344	0.6792	0.0324	39.8723	39.1820
52.0	67.20%	4.84%	69.88%	1.65%	1.6319	1.6479	7.3742	-11.0323	5.7079	-7.7283	0.0859	0.0026	28.9400	40.1401	39.7102	39.0671	39.8847	39.0671	2202.62	2170.30	0.6833	0.0345	0.6854	0.0324	39.9220	39.2519
52.5	67.79%	4.85%	70.42%	1.66%	1.6335	1.6463	7.4101	-11.1013	5.7327	-7.7707	0.0848	0.0025	28.9687	40.2642	39.8674	39.0671	39.9139	39.0671	2211.56	2180.06	0.6890	0.0345	0.6910	0.0325	39.9847	39.3224
53.0	68.36%	4.84%	70.93%	1.68%	1.6319	1.6479	7.4846	-11.1427	5.7639	-7.8184	0.0864	0.0026	28.9406	40.3590	39.9246	39.1385	40.0306	39.1385	2216.64	2185.04	0.6943	0.0346	0.6965	0.0326	40.0406	39.3700
53.5	68.92%	4.81%	71.48%	1.64%	1.6303	1.6495	7.4763	-11.2006	5.7878	-7.8621	0.0846	0.0026	28.9126	40.4101	39.9818	39.0671	40.0306	39.0671	2221.45	2190.54	0.7001	0.0342	0.7020	0.0323	40.1033	39.4411
54.0	69.45%	4.82%	71.97%	1.66%	1.6320	1.6479	7.5674	-11.2255	5.8176	-7.9122	0.0850	0.0026	28.9412	40.5415	40.0675	39.2814	40.0671	39.2814	2229.77	2199.31	0.7050	0.0344	0.7071	0.0324	40.1556	39.4880
54.5	69.91%	4.78%	72.40%	1.62%	1.6320	1.6478	7.5674	-11.2807	5.8461	-7.9534	0.0835	0.0026	28.9415	40.5780	40.0675	39.3529	40.1036	39.3529	2234.99	2205.31	0.7097	0.0339	0.7116	0.0320	40.2040	39.5393
55.0	70.42%	4.77%	72.82%	1.65%	1.6336	1.6463	7.5977	-11.3883	5.8698	-7.9924	0.0841	0.0025	28.9697	40.5561	40.1533	39.2957	40.2058	39.2957	2246.04	2215.08	0.7142	0.0341	0.7162	0.0321	40.2655	39.6052
55.5	70.77%	4.85%	73.22%	1.66%	1.6320	1.6478	7.6501	-11.4324	5.8859	-8.0449	0.0842	0.0026	28.9417	40.7239	40.3534	39.3529	40.2131	39.3529	2252.03	2220.79	0.7181	0.0345	0.7200	0.0325	40.3274	39.6620
56.0	71.26%	4.81%	73.62%	1.68%	1.6304	1.6494	7.6860	-11.5428	5.9215	-8.0966	0.0854	0.0025	28.9138	40.8188	40.2676	39.4672	40.2642	39.4672	2258.94	2226.34	0.7224	0.0345	0.7244	0.0325	40.3886	39.7226
56.5	71.57%	4.86%	73.99%	1.65%	1.6320	1.6478	7.7191	-11.6394	5.9427	-8.1482	0.0834	0.0026	28.9420	40.8699	40.4963	39.4244	40.3225	39.4244	2265.89	2234.49	0.7260	0.0344	0.7278	0.0326	40.4340	39.7545
57.0	72.01%	4.82%	74.36%	1.65%	1.6336	1.6462	7.7743	-11.6753	5.9782	-8.2018	0.0835	0.0026	28.9702	40.8772	40.4391	39.4672	40.3517	39.4672	2275.87	2245.04	0.7300	0.0343	0.7318	0.0324	40.5012	39.8276
57.5	72.31%	4.86%	74.63%	1.68%	1.6320	1.6478	7.8433	-11.7222	6.0155	-8.2537	0.0843	0.0026	28.9422	41.0158	40.4963	39.6387	40.3590	39.6387	2281.82	2250.29	0.7328	0.0347	0.7347	0.0327	40.5582	39.8733
58.0	72.69%	4.80%	74.96%	1.66%	1.6304	1.6494	7.8626	-11.7857	6.0393	-8.3065	0.0841	0.0025	28.9142	41.1107	40.5535	39.6387	40.4393	39.6387	2289.28	2256.64	0.7364	0.0342	0.7383	0.0323	40.6288	39.9656
58.5	73.05%	4.80%	75.31%	1.64%	1.6320	1.6478	7.9261	-11.8602	6.0761	-8.3601	0.0822	0.0024	28.9423	41.1253	40.6392	39.7102	40.5415	39.7102	2298.76	2266.25	0.7400	0.0340	0.7418	0.0322	40.6839	39.9991
59.0	73.29%	4.87%	75.56%	1.67%	1.6336	1.6462	7.9178	-12.0064	6.1061	-8.4249	0.0830	0.0025	28.9704	41.2859	40.7250	39.7531	40.5853	39.7531	2308.86	2276.89	0.7425	0.0345	0.7443	0.0327	40.7500	40.0644
59.5	73.67%	4.83%	75.89%	1.66%	1.6320	1.6478	8.0227	-12.0810	6.1449	-8.4707	0.0834	0.0025	28.9424	41.2713	40.7821	39.7817	40.6509	39.7817	2313.11	2280.41	0.7460	0.0343	0.7478	0.0324	40.7950	40.1102
60.0	73.87%	4.90%	76.09%	1.68%	1.6320	1.6478	8.0503	-12.1223	6.1707	-8.5284	0.0849	0.0025	28.9425	41.3442	40.7821	39.7102	40.6509	39.7102	2318.91	2286.91	0.7480	0.0348	0.7498	0.0329	40.8430	40.1397
60.5	74.13%	4.91%	76.31%	1.70%	1.6305	1.6494	8.1165	-12.1941	6.2060	-8.5826	0.0842	0.0025	28.9145	41.4902	40.8965	39.8103	40.6728	39.8103	2326.94	2294.54	0.7505	0.0349	0.7522	0.0330	40.9159	40.1868
61.0	74.49%	4.83%	76.62%	1.65%	1.6320	1.6478	8.2021	-12.2741	6.2525	-8.6618	0.0821	0.0024	28.9425	41.5267	40.8536	39.9246	40.6874	39.9246	2337.65	2304.44	0.7539	0.0342	0.7556	0.0324	40.9782	40.2656
61.5	74.78%	4.86%	76.88%	1.67%	1.6336	1.6462	8.2269	-12.3486	6.2924	-8.7294	0.0832	0.0024	28.9705	41.6362	41.0680	39.9246	40.8188	39.9246	2344.63	2312.33	0.7566	0.0345	0.7583	0.0326	41.0238	40.3229
62.0	75.11%	4.84%	77.16%	1.67%	1.6320	1.6478	8.2987	-12.4535	6.3331	-8.7844	0.0824	0.0024	28.9426	41.6362	41.2109	39.8531	40.7969	39.8531	2349.36	2316.93	0.7597	0.0343	0.7614	0.0325	41.0750	40.3627
62.5	75.34%	4.87%	77.37%	1.70%	1.6305	1.6494	8.3483	-12.5694	6.3718	-8.8676	0.0847	0.0023	28.9146	41.7529	41.1252	39.9818	40.8772	39.9818	2356.40	2323.64	0.7618	0.0347	0.7636	0.0328	41.1434	40.4254
63.0	75.68%	4.82%	77.64%	1.69%	1.6320	1.6478	8.4090	-12.6467	6.4056	-8.9461	0.0846	0.0024	28.9425	41.8916	41.2109	39.9961	40.9429	39.9961	2370.88	2336.54	0.7648	0.0345	0.7666	0.0325	41.2257	40.5079
63.5	76.02%	4.75%	77.90%	1.66%	1.6336	1.6462	8.4256	-12.8122	6.4207	-9.0591	0.0818	0.0024	28.9705	41.9573	41.3538	40.1533	40.9648	40.1533	2382.30	2347.77	0.7679	0.0339	0.7696	0.0321	41.2961	40.5882
64.0	76.16%	4.87%	78.06%	1.72%	1.6320	1.6478	8.5746	-12.9364	6.4373	-9.1853	0.0845	0.0025	28.9424	42.0375	41.5682	40.2104	41.0523	40.2104	2391.22	2356.99	0.7694	0.0348	0.7711	0.0329	41.3848	40.6819
64.5	76.34%	4.95%	78.27%	1.73%	1.6304	1.6494	8.6022	-13.1655	6.4474	-9.3847	0.0840	0.0026	28.9143	42.1032	41.5825	40.2676	41.0815	40.2676	2403.00	2368.02	0.7715	0.0351	0.7730	0.0334	41.4858	40.7771
65.0	76.69%	4.85%	78.48%	1.74%	1.6320	1.6478	8.6850	-13.5297	6.4543	-9.6272	0.0849	0.0026	28.9422	42.2200	41.4968	40.2104	41.1983	40.2104	2413.68	2377.35	0.7741	0.0349	0.7758	0.0330	41.5418	40.8489
65.5	76.83%	4.93%	78.67%	1.75%	1.6336	1.6462	8.7236	-13.4194	6.4444	-9.6501	0.0842	0.0028	28.9702	42.2784	41.6969	40.4391	41.2567	40.4391	2424.72	2390.06	0.7759	0.0352	0.7775	0.0334	41.6159	40.8896
66.0	76.99%	4.96%	78.82%	1.79%	1.6320	1.6478	8.7540	-13.5297	6.4536	-9.7773	0.0859	0.0029	28.9420	42.4024	41.7112	40.4963	41.3442	40.4963	2432.45	2397.40	0.7773	0.0357	0.7790	0.0338	41.6882	40.9553
66.5	77.16%	4.93%	78.92%	1.81%	1.6320	1.6478	8.7954	-13.6401	6.4610	-9.8827	0.0861	0.0030	28.9420	42.3659	41.7112	40.4963	41.3078	40.4963	2436.35	2401.37	0.7787	0.0356	0.7804	0.0337	41.7147	40.9577
67.0	77.23%	4.93%	79.08%	1.78%	1.6304	1.6494	8.4366	-12.9778	6.1512	-9.4658	0.0857	0.0031	28.9139	42.5411	42.0970	40.6678	41.3442	40.6678	2441.88	2410.87	0.7799	0.0355	0.7816	0.0336	41.8240	41.2059
67.5	77.17%	4.98%	79.12%	1.77%	1.6320	1.6478	8.1055	-12.6467	5.9520	-9.2123	0.0839	0.0033	28.9416	42.7673	42.5687	40.8536	41.4902	40.8536	2456.58	2425.75	0.7799	0.0355	0.7814	0.0338	41.9472	41.5294
68.0	77.21%	4.97%	79.13%	1.78%	1.6336	1.6463	8.1827	-12.8454	5.9875	-9.3377	0.0838	0.0034	28.9696	42.9206	42.6116	41.0108	41.4902	41.0108	2470.21	2438.85	0.7801	0.0355	0.7817	0.0337	42.0306	41.6347
68.5	77.12%	5.05%	79.08%	1.80%	1.6320	1.6479	8.2297	-13.0192	6.0291	-9.4566	0.0846	0.0036	28.9411	43.0228	42.7831	40.9965	41.5997	40.9965	2481.33	2450.10	0.7795	0.0360	0.7810	0.0342	42.1320	41.7337
69.0	77.09%	5.05%	79.00%	1.83%	1.6303	1.6495	8.3262	-13.1655	6.0788	-9.5697	0.0850	0.0037	28.9124	43.1541	42.8403	41.1252	41.6362	41.1252	2493.04	2460.97	0.7789	0.0362	0.7804	0.0344	42.2308	41.8323
			57.62%	2.83%			8.5194	-3.7497																		
			6.79%	0.83%			4.5318	-66.0724																		
			21.81%	1.49%																						

NOTE - This unit had a difficult time maintaining air flow an internal examination afterwards reveiled that the fussion of the chemical bed was less than that of other units tested as might be expected with the lower O2 production rates over greater periods of time. material clung to the internal screens after water emersion more than with other units - possibly indicated that the particles had become broken and were blocking the air channels they provide

Bag went flat at 10 min and again at 17 min and had to take external breaths to reinflate - ignored the inspired value during these periods and use end of life max at 42.5 min

SR100 Serial No. 60521

Effects of long-term high-heat expsoure on self-conatined self-rescuers

August 31, 2006

Time sec	Exp O2 percent	Exp CO2 percent	Ins O2 percent	Ins CO2 percent	Exp Vol liters	Ins Vol liters	Exp Pk Prs cm H2O	Ins Pk Prs cm H2O	Exp Av Prs cm H2O	Ins Av Prs cm H2O	xp CO2 Pk liters	ns CO2Min liters	VE Stpd liers/min	sWB EndT C	sDB EndT C	pDB EndT C	pWB EndT C	pDB EndT C	ExpH2OVapr	InsH2OVapr	uthO2TAv	th CO2TAv	uthO2VAv	th CO2VAv	sWBAvgTp C	sDBAvgTp C
0.0	0.00%	0.00%	0.00%	0.00%	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.00	0.00	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.5	23.02%	1.27%	25.56%	2.02%	1.9596	1.6482	0.6656	-0.9018	0.0963	-0.2718	0.0251	0.0042	25.5609	21.2821	22.5638	28.7193	27.5367	28.7193	847.81	833.40	0.2151	0.0120	0.2429	0.0164	22.1136	23.2028
1.0	21.09%	0.45%	22.15%	0.58%	1.6373	1.6425	0.8643	-0.8798	0.1426	-0.3278	0.0090	0.0040	29.0361	26.2815	28.2620	28.6050	26.5734	28.6050	897.16	906.36	0.2157	0.0055	0.2162	0.0052	26.3789	28.3148
1.5	18.71%	3.13%	19.96%	1.29%	1.6255	1.6544	2.6829	-1.8015	1.9287	-0.4136	0.0400	0.0025	28.8261	29.4123	29.7055	31.6350	30.1785	31.6350	1121.56	1161.28	0.1938	0.0214	0.1934	0.0221	29.8878	30.5467
2.0	18.35%	2.50%	20.06%	0.54%	1.6248	1.6550	6.2704	-3.0433	3.7626	-1.6905	0.0349	-0.0006	28.8140	29.2663	30.4201	32.9928	31.2732	32.9928	1152.40	1192.38	0.1922	0.0154	0.1920	0.0152	30.5415	31.6295
2.5	15.47%	3.77%	17.94%	1.05%	1.6207	1.6591	2.8181	-3.8491	2.0126	-2.6784	0.0593	-0.0007	28.7413	28.2665	30.6059	32.9499	30.5142	32.9499	1044.66	1111.39	0.1672	0.0251	0.1670	0.0241	29.7325	31.7139
3.0	12.99%	4.57%	16.09%	1.28%	1.6218	1.6581	2.3793	-4.0091	1.7960	-2.8227	0.0717	-0.0006	28.7604	28.1716	31.2777	33.2072	30.5799	33.2072	1036.01	1105.57	0.1457	0.0304	0.1454	0.0293	29.7538	32.1593
3.5	11.32%	4.68%	14.68%	1.26%	1.6241	1.6557	2.4538	-3.9484	1.8026	-2.8533	0.0687	-0.0006	28.8017	28.3833	31.6350	33.4644	30.9229	33.4644	1051.20	1117.68	0.1305	0.0305	0.1300	0.0297	29.9358	32.4882
4.0	10.38%	4.56%	13.74%	1.25%	1.6189	1.6609	2.5311	-4.1195	1.8109	-2.9275	0.0675	-0.0006	28.7105	28.4635	31.9923	33.7074	31.0543	33.7074	1055.76	1120.83	0.1209	0.0298	0.1206	0.0290	30.0715	32.7993
4.5	9.26%	4.55%	12.74%	1.24%	1.6126	1.6673	2.4207	-4.0919	1.7902	-2.9996	0.0661	-0.0006	28.5972	28.6752	32.4925	33.8646	31.3024	33.8646	1069.03	1131.95	0.1103	0.0297	0.1100	0.0290	30.2960	33.0822
5.0	8.71%	4.51%	12.23%	1.21%	1.6158	1.6640	2.4345	-4.2299	1.7337	-3.1568	0.0648	-0.0006	28.6545	28.8649	32.7784	34.1362	31.5651	34.1362	1085.06	1146.81	0.1050	0.0293	0.1047	0.0286	30.4729	33.2972
5.5	8.19%	4.49%	11.82%	1.20%	1.6200	1.6598	2.4097	-4.3789	1.6866	-3.2674	0.0642	-0.0006	28.7290	29.1131	33.0071	34.3220	31.6235	34.3220	1103.64	1164.66	0.1003	0.0291	0.1000	0.0285	30.6688	33.5017
6.0	7.78%	4.36%	11.50%	1.14%	1.6140	1.6658	2.4621	-4.4507	1.6673	-3.3831	0.0618	-0.0006	28.6230	29.3758	33.2072	34.2791	31.7476	34.2791	1116.22	1173.43	0.0967	0.0281	0.0964	0.0275	30.8473	33.7190
6.5	7.82%	4.36%	11.63%	1.14%	1.6139	1.6660	2.4207	-4.6852	1.5891	-3.6112	0.0616	-0.0006	28.6203	29.6677	33.4930	34.6364	32.0030	34.6364	1136.00	1190.10	0.0975	0.0281	0.0972	0.0275	31.0615	33.9295
7.0	7.93%	4.34%	11.44%	1.25%	1.6092	1.6707	2.2883	-6.6859	0.9553	-3.9598	0.0626	-0.0001	28.5368	30.1639	33.5788	34.8365	32.0322	34.8365	1145.47	1207.66	0.0966	0.0289	0.0968	0.0280	31.3053	34.0790
7.5	12.05%	4.27%	15.14%	2.00%	1.6177	1.6621	3.7453	-2.5328	2.7030	-1.0190	0.0488	0.0019	28.6890	31.7111	33.4930	34.7793	32.9517	34.7793	1321.39	1335.49	0.1375	0.0302	0.1360	0.0313	32.4837	34.0212
8.0	12.29%	3.90%	15.87%	1.09%	1.6174	1.6624	3.7453	-4.0478	2.5201	-2.6813	0.0570	-0.0007	28.6836	30.2515	33.8646	35.0652	32.2949	35.0652	1175.40	1231.27	0.1407	0.0256	0.1408	0.0250	31.5366	34.3766
8.5	11.69%	4.38%	15.64%	1.24%	1.6242	1.6556	3.2927	-4.1582	2.3613	-2.8365	0.0655	-0.0006	28.8042	30.4267	34.2076	35.1223	32.4117	35.1223	1193.62	1247.68	0.1366	0.0289	0.1367	0.0281	31.6819	34.5556
9.0	11.72%	4.46%	15.77%	1.26%	1.6203	1.6595	2.8898	-4.2851	2.2169	-2.9672	0.0656	-0.0006	28.7353	30.6529	34.2791	35.2081	32.4044	35.2081	1200.02	1252.74	0.1375	0.0293	0.1375	0.0286	31.7782	34.6457
9.5	11.82%	4.49%	15.92%	1.27%	1.6166	1.6632	2.7408	-4.3789	2.1532	-3.0384	0.0660	-0.0006	28.6694	30.8937	34.4935	35.4082	32.5285	35.4082	1208.89	1261.48	0.1387	0.0295	0.1387	0.0288	31.9228	34.8079
10.0	11.96%	4.49%	16.08%	1.29%	1.6207	1.6591	2.7519	-4.3541	2.1515	-3.0595	0.0665	-0.0006	28.7419	30.9813	34.6364	35.5654	32.6963	35.5654	1225.05	1277.71	0.1402	0.0297	0.1402	0.0289	32.0772	34.9548
10.5	11.91%	4.49%	16.06%	1.30%	1.6245	1.6553	2.8512	-4.3348	2.2235	-3.0421	0.0667	-0.0006	28.8090	31.1856	34.8937	35.4654	32.8204	35.4654	1242.86	1293.17	0.1398	0.0297	0.1398	0.0289	32.2223	35.0888
11.0	11.95%	4.48%	16.07%	1.29%	1.6206	1.6592	2.8898	-4.4231	2.2580	-3.0485	0.0662	-0.0006	28.7400	31.3097	35.1366	35.6369	32.8423	35.6369	1250.14	1298.92	0.1400	0.0296	0.1401	0.0289	32.3307	35.2174
11.5	11.84%	4.52%	15.93%	1.30%	1.6166	1.6632	2.8954	-4.3679	2.2547	-3.0736	0.0667	-0.0005	28.6693	31.4776	35.2367	35.7512	33.0247	35.7512	1258.64	1305.59	0.1388	0.0298	0.1389	0.0291	32.4523	35.3653
12.0	11.76%	4.50%	15.78%	1.30%	1.6203	1.6595	2.8760	-4.4231	2.2256	-3.1195	0.0659	-0.0006	28.7353	31.6746	35.3510	35.8513	33.0247	35.8513	1272.67	1318.87	0.1377	0.0297	0.1377	0.0290	32.5706	35.4784
12.5	11.55%	4.52%	15.55%	1.29%	1.6241	1.6557	2.8954	-4.5003	2.1905	-3.1747	0.0664	-0.0006	28.8015	31.7987	35.4654	35.9227	33.1415	35.9227	1286.42	1331.20	0.1355	0.0297	0.1355	0.0291	32.6792	35.5940
13.0	11.31%	4.53%	15.25%	1.30%	1.6198	1.6600	2.8623	-4.5749	2.1520	-3.2648	0.0657	-0.0005	28.7262	31.9300	35.5654	36.1371	33.2801	36.1371	1292.62	1336.95	0.1328	0.0298	0.1328	0.0292	32.7745	35.6423
13.5	11.04%	4.53%	14.95%	1.29%	1.6154	1.6645	2.8623	-4.6770	2.1355	-3.3530	0.0656	-0.0005	28.6467	32.0322	35.6940	36.0371	33.3166	36.0371	1300.73	1340.19	0.1300	0.0297	0.1300	0.0291	32.8496	35.6959
14.0	10.75%	4.54%	14.61%	1.31%	1.6190	1.6608	2.8623	-4.6438	2.1172	-3.3875	0.0660	-0.0006	28.7114	32.1490	35.7083	36.1371	33.3531	36.1371	1310.67	1349.58	0.1267	0.0299	0.1268	0.0292	32.9204	35.7596
14.5	10.32%	4.57%	14.18%	1.33%	1.6228	1.6570	2.9285	-4.6438	2.1480	-3.3768	0.0668	-0.0004	28.7786	32.2949	35.8655	36.0942	33.4042	36.0942	1319.91	1357.07	0.1224	0.0302	0.1225	0.0295	32.9702	35.8127
15.0	9.68%	4.53%	13.60%	1.31%	1.6176	1.6622	2.9450	-4.6438	2.1839	-3.3815	0.0650	-0.0004	28.6872	32.3679	35.8513	36.2086	33.4261	36.2086	1322.75	1358.23	0.1164	0.0298	0.1164	0.0292	33.0315	35.8714
15.5	9.47%	4.48%	13.40%	1.26%	1.6171	1.6627	2.9174	-4.7818	2.1460	-3.4595	0.0637	-0.0004	28.6785	32.4774	35.9227	36.2800	33.4991	36.2800	1337.79	1371.60	0.1143	0.0293	0.1143	0.0287	33.1739	35.9545
16.0	9.39%	4.49%	13.33%	1.28%	1.6123	1.6675	2.9285	-4.8536	2.1025	-3.5321	0.0639	-0.0003	28.5926	32.5576	35.8655	36.4372	33.6085	36.4372	1337.84	1373.14	0.1135	0.0294	0.1136	0.0288	33.2376	36.0196
16.5	9.39%	4.49%	13.37%	1.28%	1.6215	1.6583	2.9506	-4.8867	2.0910	-3.5664	0.0639	-0.0003	28.7554	32.7036	36.0371	36.4944	33.5793	36.4944	1351.69	1386.94	0.1137	0.0294	0.1138	0.0288	33.3100	36.1197
17.0	9.47%	4.50%	13.51%	1.30%	1.6169	1.6629	2.9450	-4.9060	2.0713	-3.6088	0.0645	-0.0002	28.6747	32.7693	36.1371	36.4944	33.6450	36.4944	1355.55	1388.79	0.1148	0.0296	0.1149	0.0290	33.3765	36.1992
17.5	9.66%	4.48%	13.78%	1.30%	1.6172	1.6626	2.9174	-4.9750	2.0655	-3.6423	0.0643	-0.0002	28.6801	32.8423	36.2086	36.6373	33.7545	36.6373	1358.72	1393.24	0.1170	0.0295	0.1172	0.0289	33.4281	36.2753
18.0	9.77%	4.52%	14.02%	1.32%	1.6132	1.6666	2.9726	-4.8977	2.1082	-3.6054	0.0635	-0.0002	28.6090	32.9079	36.4372	36.6088	33.7837	36.6088	1360.71	1393.85	0.1190	0.0297	0.1190	0.0292	33.4845	36.3856
18.5	9.89%	4.48%	14.24%	1.32%	1.6179	1.6619	3.0278	-4.8094	2.1789	-3.5319	0.0638	-0.0001	28.6920	32.9152	36.4230	36.5659	33.7910	36.5659	1366.95	1399.16	0.1206	0.0296	0.1207	0.0290	33.5011	36.4152
19.0	10.08%	4.46%	14.51%	1.33%	1.6225	1.6573	3.0830	-4.8536	2.2495	-3.4584	0.0637	0.0000	28.7742	32.9371	36.5516	36.7231	33.8129	36.7231	1369.09	1403.36	0.1229	0.0295	0.1230	0.0289	33.5146	36.4832
19.5	10.38%	4.44%	14.88%	1.34%	1.6185	1.6613	3.0968	-4.7818	2.3335	-3.4190	0.0637	0.0000	28.7032	32.8787	36.5659	36.6373	33.8275	36.6373	1366.84	1400.97	0.1262	0.0295	0.1263	0.0289	33.5304	36.5177
20.0	11.06%	4.41%	15.59%	1.33%	1.6153	1.6646	3.1161	-4.7763	2.3413	-3.4379	0.0639	0.0000	28.6449	32.9079	36.7231	36.8374	33.9004	36.8374	1364.88	1398.97	0.1330	0.0293	0.1332	0.0287	33.5515	36.5951
20.5	12.11%	4.46%	16.68%	1.35%	1.6207	1.6591	3.1106	-4.7542	2.3664	-3.4517	0.0645	0.0001	28.7411	33.1342	36.7088	36.9232	34.1194	36.9232	1388.08	1424.62	0.1437	0.0297	0.1439	0.0291	33.7533	36.6684
21.0	12.85%	4.58%	17.60%	1.41%	1.6252	1.6547	3.2155	-4.7432	2.4766	-3.3490	0.0667	0.0002	28.8208	33.2290	36.8374	36.9518	34.2215	36.9518	1407.29	1442.39	0.1520	0.0306	0.1523	0.0300	33.8849	36.7169
21.5	13.73%	4.49%	18.53%	1.40%	1.6221	1.6577	3.3314	-4.6576	2.6133	-3.2897	0.0657	0.0002	28.7665	33.2436	36.9232	36.9232	34.2288	36.9232	1409.13	1442.62	0.1610	0.0301	0.1613	0.0295	33.9199	36.7686
22.0	15.25%	4.46%	19.98%	1.42%	1.6200	1.6598	3.3700	-4.7322	2.6773	-3.2733	0.0673	0.0002	28.7288	33.2874	37.1233	36.9518	34.3383	36.9518	1411.17	1443.15	0.1755	0.0302	0.1761	0.0294	33.9579	36.8654
22.5	16.47%	4.59%	21.30%	1.49%	1.6243	1.6555	3.8557	-4.6990	2.9651	-3.0755	0.0693	0.0003	28.8055	33.3896	37.1376	36.9946	34.5573	36.9946	1431.61	1462.11	0.1882	0.0312	0.1889	0.0304	34.1028	36.9294
23.0	17.85%	4.40%	22.72%	1.37%	1.6250	1.6548	3.9937	-4.6990	3.0368	-3.1417	0.0680	0.0002	28.8184	33.3531	37.2805	37.0661	34.5937	37.0661	1435.56	1459.69	0.2018	0.0298	0.2028	0.0288	34.0849	36.9853
23.5	19.69%	4.40%	24.45%	1.39%	1.6286	1.6512	3.8447	-4.7101	2.9933	-3.1779	0.0681	0.0003	28.8825	33.4042	37.2376	37.0661	34.8054	37.0661	1451.68	1474.37	0.2197	0.0299	0.2207	0.0290	34.1978	37.0593
24.0	21.42%	4.46%	26.26%	1.41%	1.6265	1.6533	3.8833	-4.7266	3.0021	-3.1864	0.0699	0.0003	28.8447	33.4991	37.3520	37.2805	34.9586	37.2805	1468.19	1487.23	0.2373	0.0304	0.2384	0.0293	34.3431	37.1546
24.5	22.92%	4.43%	27.86%	1.40%	1.6246	1.6552	3.8226	-4.7542	3.0145	-3.2123	0.0704	0.0003	28.8106	33.6377	37.3520	37.1233	35.0973	37.1233	1482.29	1497.27	0.2526	0.0302	0.2539	0.0291	34.4532	37.1972
25.0	24.93%	4.32%	29.69%	1.39%	1.6278	1.6520	3.7453	-4.8094	2.9848	-3.2705	0.0690	0.0002	28.8675	33.7545	37.5663	37.4234	35.2141	37.4234	1495.76	1508.72	0.2718	0.0297	0.2731	0.0286	34.5442	37.3022
25.5	27.10%	4.40%	31.83%	1.43%	1.6306	1.6492	3.7895	-4.8094	3.0179	-3.2708	0.0727	0.0002	28.9180	33.8713	37.6950	37.3520	35.3016	37.3520	1511.59	1522.84	0.2931	0.0305	0.2946	0.0291	34.6534	37.3656
26.0	28.91%	4.54%	33.81%	1.45%	1.6288	1.6511	3.9385	-4.8094	3.0628	-3.2721	0.0746	0.0001	28.8845	34.0099	37.7093	37.3520	35.4330	37.3520	1525.62	1535.38	0.3120	0.0313	0.3136	0.0299	34.7822	37.4032
26.5	30.60%	4.50%	35.54%	1.44%	1.6270	1.6528	4.0102	-4.8205	3.0896	-3.2974	0.0741	0.0001	28.8528	34.1632	37.7521	37.3520	35.5935	37.3520	1542.32	1548.75	0.3291	0.0310	0.3307	0.0297	34.9181	37.4483
27.0	32.59%	4.32%	37.40%	1.38%	1.6295	1.6503	3.8971	-4.9060	3.0685	-3.3608	0.0722	0.0001	28.8980	34.3383	37.7807	37.3520	35.7249	37.3520	1562.04	1564.99	0.3483	0.0299	0.3499	0.0285	35.0435	37.4995
27.5	34.97%	4.21%	39.53%	1.37%	1.6318	1.6480	3.8999	-4.9640	3.0755	-3.3958	0.0717	0.0000	28.9392	34.6594	37.9237	37.5806	36.0022	37.5806	1599.34	1598.37	0.3707	0.0293	0.3725	0.0279	35.3175	37.5806
28.0	37.05%	4.38%	41.65%	1.42%	1.6300	1.6498	3.9247	-5.0026	3.1115	-3.4176	0.0738	0.0000	28.9067	36.1628	38.0666	37.5663	37.0750	37.5663	1750.83	1749.38	0.3917	0.0304	0.3935	0.0290	36.5618	37.6230
28.5	39.00%	4.36%	43.53%	1.41%	1.6300	1.6498	4.0075	-5.0164	3.1417	-3.4364	0.0749	0.0000	28.9062	38.0237	38.0666	37.7807	38.5711	37.7807	1974.59	1960.18	0.4108	0.0304	0.4127	0.0288	38.2026	37.7054
29.0	40.83%	4.45%	45.45%	1.42%	1.6281	1.6517	4.0654	-5.0412	3.1818	-3.4577	0.0746	-0.0001	28.8730	38.6878	38.1523	37.6950	39.1549	37.6950	2066.07	2040.29	0.4296	0.0307	0.4314	0.0293	38.8246	37.7782
29.5	42.12%	4.62%	46.98%	1.47%	1.6302	1.6496	4.0903	-5.0992	3.2132	-3.4830	0.0762	0.0001	28.9105	38.9360	38.2095	37.6378	39.3008	37.6378	2093.11	2065.97	0.4438	0.0318	0.4455	0.0304	38.9979	37.8172
30.0	44.15%	4.25%	48.75%	1.35%	1.6323	1.6475	4.1206	-5.1847	3.2364	-3.5344	0.0722	0.0000	28.9473	39.0089	38.2095	37.8665	39.4176	37.8665	2108.66	2080.93	0.4627	0.0294	0.4645	0.0280	39.0975	37.8932
30.5	45.95%	4.20%	50.41%	1.32%	1.6305	1.6493	4.1179	-5.2096	3.2311	-3.5955	0.0693	-0.0001	28.9161	39.1549	38.3524	37.8522	39.5198	37.8522	2118.49	2090.66	0.4802	0.0289	0.4818	0.0276	39.1902	37.9392
31.0	48.02%	4.16%	52.29%	1.31%	1.6289	1.6509	4.0213	-5.2841	3.2410	-3.6513	0.0701	-0.0001	28.8869	39.2717	38.4954	37.6950	39.5344	37.6950	2124.97	2097.53	0.4999	0.0286	0.5015	0.0273	39.2619	37.9889
31.5	49.95%	4.21%	54.10%	1.32%	1.6309	1.6489	4.1179	-5.3337	3.2676	-3.6921	0.0694	-0.0001	28.9224	39.3373	38.5668	37.9951	39.5198	37.9951	2136.83	2107.79	0.5187	0.0289	0.5203	0.0277	39.3279	38.0681
32.0	51.76%	4.29%	55.88%	1.34%	1.6328	1.6470	4.1206	-5.4055	3.2999	-3.7403	0.0713	-0.0001	28.9562	39.4176	38.6669	37.7521	39.6511	37.7521	2149.34	2120.03	0.5366	0.0294	0.5382	0.0281	39.4040	38.1144
32.5	53.53%	4.31%	57.59%	1.36%	1.6311	1.6487	4.1041	-5.4303	3.3192	-3.7839	0.0714	-0.0001	28.9265	39.5563	38.6383	37.9237	39.7022	37.9237	2157.52	2128.76	0.5540	0.0296	0.5556	0.0283	39.4913	38.1838
33.0	55.27%	4.28%	59.23%	1.36%	1.6295	1.6503	4.1648	-5.4717	3.3621	-3.8205	0.0716	0.0000	28.8980	39.6220	38.8384	37.9808	39.7971	37.9808	2164.29	2134.47	0.5709	0.0296	0.5725	0.0282	39.5535	38.2312
33.5	56.87%	4.31%	60.80%	1.36%	1.6314	1.6485	4.2007	-5.5131	3.4099	-3.8575	0.0717	0.0000	28.9307	39.7022	38.8527	38.0666	39.8117	38.0666	2174.21	2145.01	0.5868	0.0297	0.5884	0.0284	39.6198	38.2949
34.0	58.27%	4.38%	62.23%	1.39%	1.6331	1.6467	4.2862	-5.6042	3.4549	-3.8894	0.0730	0.0000	28.9622	39.7679	38.7812	38.0952	39.8263	38.0952	2181.73	2151.47	0.6009	0.0302	0.6025	0.0288	39.6547	38.3369
34.5	59.49%	4.41%	63.50%	1.37%	1.6319	1.6479	4.4214	-5.6649	3.5088	-3.9365	0.0720	0.0000	28.9403	34.2288	38.9241	38.1380	35.5789	38.1380	1554.80	1541.56	0.6135	0.0302	0.6149	0.0289	34.9662	38.3912
35.0	60.58%	4.27%	64.49%	1.34%	1.6325	1.6474	4.3938	-5.7063	3.5433	-3.9664	0.0712	0.0000	28.9501	33.7545	38.8527	38.0666	34.7032	38.0666	1435.76	1474.44	0.6238	0.0294	0.6254	0.0280	34.3808	38.3252
35.5	61.70%	4.26%	65.59%	1.33%	1.6311	1.6488	4.4407	-5.7698	3.5673	-4.0292	0.0717	0.0000	28.9253	33.8421	38.8955	37.9808	34.6302	37.9808	1431.45	1476.92	0.6349	0.0293	0.6365	0.0279	34.4189	38.3599
36.0	62.68%	4.32%	66.54%	1.36%	1.6326	1.6472	4.4490	-5.8581	3.5959	-4.0828	0.0727	0.0000	28.9525	33.9004	39.0671	38.2095	34.6667	38.2095	1433.03	1481.10	0.6445	0.0298	0.6461	0.0284	34.4581	38.4495
36.5	63.99%	4.13%	67.64%	1.31%	1.6341	1.6457	4.4849	-5.9353	3.6251	-4.1303	0.0697	0.0000	28.9791	33.9296	39.1814	38.2095	34.6886	38.2095	1439.77	1486.51	0.6566	0.0285	0.6581	0.0272	34.4995	38.4885
37.0	65.12%	4.14%	68.67%	1.30%	1.6327	1.6471	4.5042	-6.0374	3.6469	-4.1948	0.0685	0.0000	28.9541	34.0464	39.2100	38.2095	34.7762	38.2095	1443.54	1491.57	0.6675	0.0285	0.6689	0.0272	34.5652	38.5551
37.5	66.32%	4.14%	69.75%	1.31%	1.6313	1.6485	4.5180	-6.0678	3.6839	-4.2490	0.0687	0.0000	28.9296	34.0756	39.2957	38.2667	34.8054	38.2667	1447.28	1494.98	0.6789	0.0285	0.6804	0.0272	34.6179	38.6302
38.0	67.50%	4.19%	70.87%	1.34%	1.6328	1.6470	4.5594	-6.1064	3.7241	-4.3100	0.0706	0.0001	28.9560	34.1924	39.4244	38.4239	34.8857	38.4239	1456.03	1503.50	0.6904	0.0290	0.6919	0.0276	34.6917	38.7058
38.5	68.64%	4.21%	71.97%	1.33%	1.6342	1.6456	4.6284	-6.2113	3.7624	-4.3698	0.0702	0.0001	28.9818	34.3091	39.5816	38.4382	34.8930	38.4382	1462.07	1508.98	0.7016	0.0290	0.7030	0.0277	34.7378	38.7712
39.0	69.67%	4.29%	72.99%	1.32%	1.6329	1.6470	4.6422	-6.2858	3.7999	-4.4265	0.0679	0.0001	28.9573	34.2653	39.6387	38.4239	35.0681	38.4239	1469.70	1517.43	0.7121	0.0291	0.7133	0.0280	34.8325	38.8433
39.5	70.79%	4.21%	74.00%	1.31%	1.6315	1.6483	4.6946	-6.3879	3.8404	-4.4871	0.0690	0.0001	28.9330	34.4843	39.6959	38.4954	35.1557	38.4954	1484.87	1533.50	0.7226	0.0288	0.7240	0.0276	34.9936	38.9278

Time sec	Exp O2 percent	Exp CO2 percent	Ins O2 percent	Ins CO2 percent	Exp Vol liters	Ins Vol liters	Exp Pk Prs cm H2O	Ins Pk Prs cm H2O	Exp Av Prs cm H2O	Ins Av Prs cm H2O	Exp CO2 Pk liters	Ins CO2Min liters	VE Stpd liers/min	sWB EndT C	sDB EndT C	pDB EndT C	pWB EndT C	pDB EndT C	ExpH2OVapr	InsH2OVapr	uthO2TAvt	h CO2TAv	uthO2VAvt	h CO2VAv	sWBAvgTp C	sDBAvgTp C
40.0	71.71%	4.23%	74.88%	1.32%	1.6329	1.6469	4.7526	-6.4514	3.8814	-4.5476	0.0685	0.0000	28.9581	34.7032	39.7817	38.4954	35.5060	38.4954	1510.05	1557.00	0.7317	0.0290	0.7330	0.0278	35.1943	39.0150
40.5	72.72%	4.12%	75.76%	1.30%	1.6329	1.6469	4.7940	-6.5480	3.9242	-4.6129	0.0697	0.0000	28.9584	34.7762	39.9246	38.6383	35.5789	38.6383	1528.00	1570.79	0.7410	0.0284	0.7424	0.0271	35.3208	39.0857
41.0	73.53%	4.21%	76.63%	1.30%	1.6343	1.6455	4.8160	-6.6528	3.9613	-4.6678	0.0688	0.0000	28.9833	35.0681	40.0961	38.7812	35.8271	38.7812	1555.39	1593.91	0.7495	0.0287	0.7508	0.0275	35.5238	39.2274
41.5	74.41%	4.19%	77.44%	1.30%	1.6329	1.6469	4.8906	-6.6859	4.0079	-4.7464	0.0676	0.0000	28.9584	35.3600	40.2104	38.9241	36.0898	38.9241	1590.69	1623.54	0.7580	0.0287	0.7593	0.0275	35.8023	39.3770
42.0	75.44%	4.10%	78.31%	1.29%	1.6315	1.6483	4.9595	-6.8074	4.0481	-4.8087	0.0678	0.0000	28.9336	35.5060	40.4391	38.8955	36.3525	38.8955	1621.07	1644.73	0.7674	0.0282	0.7688	0.0269	36.0105	39.5312
42.5	76.25%	4.18%	79.13%	1.30%	1.6329	1.6469	5.0285	-6.9067	4.0903	-4.8819	0.0674	-0.0001	28.9584	35.7614	40.4963	39.1385	36.5277	39.1385	1646.30	1668.72	0.7757	0.0285	0.7769	0.0274	36.2076	39.6263
43.0	77.13%	4.14%	79.94%	1.29%	1.6343	1.6455	5.1362	-7.0281	4.1551	-4.9419	0.0677	-0.0001	28.9832	36.0606	40.6678	39.0099	36.7320	39.0099	1676.57	1693.02	0.7841	0.0283	0.7853	0.0271	36.4033	39.7083
43.5	77.67%	4.27%	80.54%	1.32%	1.6329	1.6469	5.2217	-7.0999	4.2121	-5.0113	0.0687	0.0000	28.9583	36.1993	40.8536	39.2100	36.8926	39.2100	1703.31	1716.24	0.7899	0.0291	0.7911	0.0280	36.6114	39.7879
44.0	78.28%	4.19%	81.10%	1.30%	1.6329	1.6469	5.2493	-7.1689	4.2488	-5.0915	0.0676	-0.0001	28.9587	35.8709	40.8536	39.2814	36.4547	39.2814	1649.89	1666.48	0.7957	0.0286	0.7969	0.0274	36.2239	39.8578
44.5	78.97%	4.13%	81.69%	1.30%	1.6318	1.6480	5.3569	-7.2931	4.3007	-5.1728	0.0680	-0.0001	28.9385	35.0389	41.0680	39.2386	35.1557	39.2386	1493.29	1537.42	0.8020	0.0284	0.8033	0.0271	35.1874	39.9333
45.0	79.67%	4.13%	82.34%	1.28%	1.6332	1.6466	5.4287	-7.4172	4.3519	-5.2502	0.0677	-0.0001	28.9635	35.0681	41.2824	39.2814	35.0681	39.2814	1492.49	1543.97	0.8088	0.0282	0.8100	0.0270	35.2415	39.9976
45.5	80.31%	4.17%	82.96%	1.31%	1.6346	1.6453	5.4783	-7.5138	4.4017	-5.3342	0.0682	-0.0001	28.9874	35.2141	41.2967	39.3529	35.1849	39.3529	1501.76	1555.24	0.8151	0.0286	0.8163	0.0274	35.3407	40.0961
46.0	81.05%	4.08%	83.60%	1.26%	1.6332	1.6466	5.5391	-7.6104	4.4494	-5.4107	0.0656	-0.0001	28.9638	35.2870	41.4253	39.4244	35.3235	39.4244	1512.37	1566.05	0.8221	0.0278	0.8233	0.0267	35.4584	40.2050
46.5	81.60%	4.15%	84.12%	1.31%	1.6319	1.6479	5.6439	-7.6794	4.5022	-5.4782	0.0683	-0.0001	28.9402	35.3892	41.5825	39.4101	35.3600	39.4101	1520.43	1572.28	0.8273	0.0285	0.8286	0.0273	35.5330	40.2831
47.0	82.03%	4.28%	84.62%	1.33%	1.6332	1.6466	5.7184	-7.8036	4.5557	-5.5596	0.0689	-0.0001	28.9641	35.4695	41.6397	39.4958	35.4695	39.4958	1529.47	1582.45	0.8321	0.0293	0.8332	0.0281	35.6190	40.3634
47.5	82.61%	4.17%	85.09%	1.31%	1.6346	1.6452	5.7653	-7.9222	4.6065	-5.6277	0.0686	-0.0001	28.9878	35.5935	41.7540	39.5244	35.5060	39.5244	1537.23	1589.67	0.8373	0.0286	0.8385	0.0274	35.6812	40.4484
48.0	83.02%	4.18%	85.46%	1.34%	1.6333	1.6466	5.8702	-7.9968	4.6557	-5.6952	0.0698	0.0000	28.9643	35.6884	41.7826	39.6387	35.5060	39.6387	1543.57	1594.47	0.8411	0.0289	0.8424	0.0276	35.7460	40.5429
48.5	83.35%	4.21%	85.80%	1.35%	1.6319	1.6479	5.9088	-8.0989	4.7022	-5.7683	0.0692	0.0000	28.9407	35.7979	41.9827	39.6387	35.5935	39.6387	1549.77	1600.53	0.8445	0.0291	0.8457	0.0278	35.8189	40.6230
49.0	83.57%	4.32%	86.09%	1.36%	1.6333	1.6466	5.9944	-8.2175	4.7497	-5.8342	0.0687	0.0000	28.9643	35.9073	42.0685	39.8531	35.6154	39.8531	1560.44	1610.29	0.8472	0.0295	0.8483	0.0284	35.9007	40.7044
49.5	83.90%	4.23%	86.34%	1.34%	1.6346	1.6452	6.0634	-8.3196	4.7969	-5.9101	0.0685	0.0001	28.9879	35.9730	42.2114	39.8674	35.7103	39.8674	1571.23	1619.15	0.8500	0.0290	0.8512	0.0279	35.9785	40.8101
50.0	84.18%	4.20%	86.59%	1.33%	1.6333	1.6466	6.1462	-8.3831	4.8474	-5.9803	0.0683	0.0000	28.9642	36.0898	42.3543	39.8531	35.7979	39.8531	1579.82	1628.37	0.8527	0.0288	0.8538	0.0277	36.0760	40.8885
50.5	84.37%	4.20%	86.72%	1.36%	1.6332	1.6466	6.2152	-8.4383	4.8845	-6.0502	0.0693	0.0001	28.9640	36.2722	42.4258	39.9246	35.9803	39.9246	1602.20	1649.98	0.8542	0.0291	0.8554	0.0278	36.2659	40.9918
51.0	84.49%	4.22%	86.86%	1.35%	1.6319	1.6480	6.2510	-8.6177	4.9194	-6.1322	0.0683	0.0000	28.9395	36.5569	42.5544	39.9818	36.2941	39.9818	1636.16	1682.20	0.8556	0.0290	0.8567	0.0279	36.5480	41.0816
51.5	84.60%	4.25%	86.98%	1.36%	1.6332	1.6467	6.2704	-8.7005	4.9530	-6.2257	0.0678	0.0001	28.9626	36.8926	42.5687	40.1390	36.5642	40.1390	1669.60	1719.83	0.8569	0.0292	0.8579	0.0281	36.8418	41.1309
52.0	84.74%	4.25%	87.09%	1.35%	1.6345	1.6453	6.3725	-8.7943	5.0067	-6.3032	0.0670	0.0001	28.9859	37.2575	42.6687	39.9818	36.8780	39.9818	1715.25	1759.61	0.8582	0.0291	0.8592	0.0280	37.1528	41.2121
52.5	84.82%	4.25%	87.14%	1.36%	1.6331	1.6467	6.4359	-8.8936	5.0546	-6.3783	0.0673	0.0001	28.9610	37.6588	42.7831	40.2104	37.1480	40.2104	1765.67	1798.49	0.8589	0.0291	0.8598	0.0280	37.4792	41.3165
53.0	84.92%	4.23%	87.19%	1.38%	1.6316	1.6482	6.5049	-8.9819	5.1068	-6.4629	0.0684	0.0002	28.9357	37.9872	43.0689	40.3248	37.4910	40.3248	1802.75	1830.18	0.8595	0.0292	0.8606	0.0280	37.7490	41.4271
53.5	84.92%	4.30%	87.21%	1.42%	1.6330	1.6468	6.5877	-9.1282	5.1613	-6.5394	0.0694	0.0002	28.9593	38.2427	43.0689	40.3534	37.7683	40.3534	1841.37	1862.74	0.8596	0.0297	0.8606	0.0286	38.0008	41.5472
54.0	85.07%	4.22%	87.27%	1.41%	1.6343	1.6455	6.6926	-9.2137	5.2118	-6.6261	0.0696	0.0002	28.9834	38.0164	43.2404	40.5535	37.5202	40.5535	1816.93	1836.39	0.8605	0.0294	0.8617	0.0282	37.7979	41.6347
54.5	85.02%	4.29%	87.25%	1.44%	1.6332	1.6466	6.7395	-9.3903	5.2706	-6.7042	0.0689	0.0002	28.9631	37.0020	43.3548	40.4963	36.3817	40.4963	1664.99	1699.01	0.8603	0.0298	0.8613	0.0287	36.7685	41.7274
55.0	85.00%	4.30%	87.19%	1.46%	1.6318	1.6480	6.8030	-9.4566	5.3287	-6.7915	0.0704	0.0003	28.9390	37.0239	43.5263	40.5535	36.4401	40.5535	1665.73	1695.76	0.8598	0.0300	0.8609	0.0288	36.7654	41.8025
55.5	85.01%	4.26%	87.15%	1.46%	1.6332	1.6467	6.9189	-9.6111	5.3971	-6.8803	0.0700	0.0003	28.9626	37.1480	43.4977	40.6392	36.5277	40.6392	1682.78	1713.39	0.8597	0.0298	0.8608	0.0286	36.9049	41.8812
56.0	84.90%	4.35%	87.09%	1.47%	1.6331	1.6467	6.9740	-9.7215	5.4543	-6.9664	0.0689	0.0004	28.9623	37.4034	43.7836	40.7107	36.5277	40.7107	1694.24	1727.10	0.8590	0.0301	0.8600	0.0291	37.0231	41.9550
56.5	85.00%	4.24%	87.06%	1.46%	1.6345	1.6453	7.1451	-9.8540	5.5229	-7.0602	0.0692	0.0004	28.9861	37.4618	43.6978	40.7821	36.6444	40.7821	1710.55	1741.37	0.8592	0.0297	0.8603	0.0285	37.1341	42.0305
57.0	84.79%	4.40%	86.94%	1.50%	1.6331	1.6467	7.2362	-9.9561	5.5875	-7.1429	0.0690	0.0004	28.9618	37.6588	43.9265	40.9251	36.7831	40.9251	1724.47	1754.70	0.8578	0.0305	0.8587	0.0295	37.2611	42.1150
57.5	84.81%	4.33%	86.85%	1.52%	1.6317	1.6481	7.3218	-10.0747	5.6719	-7.2572	0.0699	0.0005	28.9373	37.7537	43.9265	41.0108	36.8196	41.0108	1735.21	1765.00	0.8573	0.0304	0.8583	0.0293	37.3622	42.1840
			87.27%	2.00%			7.2362	-2.5328																		
			11.44%	0.54%			2.2883	-9.9561																		
			47.90%	1.33%																						

SR100 Serial No. 60558

Effects of long-term heat exposure on self-conatined self-rescuers

August 31, 2006

Time sec	Exp O2 percent	Exp CO2 percent	Ins O2 percent	Ins CO2 percent	Exp Vol liters	Ins Vol liters	Exp Pk Prs cm H2O	Ins Pk Prs cm H2O	Exp Av Prs cm H2O	Ins Av Prs cm H2O	Exp CO2 Pk liters	Ins CO2Min liters	VE Stpd liers/min	sWB EndT C	sDB EndT C	pDB EndT C	pWB EndT C	pDB EndT C	ExpH2OVapr	InsH2OVapr	uthO2TAv	th CO2TAv	uthO2VAv	th CO2VAv	sWBAvgTp C	sDBAvgTp C
0.0	0.00%	0.00%	0.00%	0.00%	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.00	0.00	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.0	21.53%	0.30%	22.16%	0.30%	1.7931	1.6408	2.3490	-1.7683	0.1668	-0.2533	0.0048	0.0016	27.2163	25.2122	26.6992	29.8056	28.7044	29.8056	985.12	971.89	0.2082	0.0027	0.2185	0.0030	25.8227	27.0552
2.0	18.96%	2.76%	20.84%	0.89%	1.6174	1.6530	4.4145	-2.7466	2.7639	-1.1216	0.0370	0.0008	28.6835	29.8501	32.3496	34.2076	31.8753	34.2076	1205.52	1181.62	0.2000	0.0181	0.1990	0.0182	30.7616	33.1741
3.0	16.21%	4.33%	19.40%	1.20%	1.6213	1.6491	2.8377	-3.7669	1.9127	-2.6694	0.0675	0.0001	28.7529	30.3164	32.8419	34.7476	32.5220	34.7476	1245.37	1233.49	0.1784	0.0288	0.1780	0.0277	31.3729	33.7398
4.0	13.10%	4.93%	16.50%	1.38%	1.6151	1.6553	2.5311	-3.8712	1.7855	-2.8313	0.0747	0.0001	28.6416	31.0624	33.5406	35.1287	32.9112	35.1287	1283.07	1272.88	0.1482	0.0326	0.1480	0.0316	31.9175	34.3053
5.0	10.97%	4.88%	14.40%	1.38%	1.6169	1.6535	2.5863	-4.0122	1.6827	-3.0193	0.0723	0.0001	28.6735	31.8084	34.2394	35.6369	33.2842	35.6369	1331.17	1322.89	0.1271	0.0322	0.1269	0.0313	32.4802	34.8152
6.0	9.59%	5.09%	12.85%	1.96%	1.6087	1.6617	2.5250	-3.7853	1.8000	-2.4744	0.0686	0.0024	28.5290	32.3598	34.9699	36.0180	33.6410	36.0180	1365.16	1357.17	0.1129	0.0353	0.1122	0.0353	32.9585	35.3213
7.0	13.86%	3.90%	17.30%	0.95%	1.6151	1.6553	5.0761	-3.3315	3.2108	-1.7609	0.0531	0.0002	28.6426	32.5868	35.0969	36.2721	33.8194	36.2721	1384.53	1375.41	0.1557	0.0246	0.1558	0.0242	33.1178	35.5605
8.0	11.21%	4.85%	14.93%	1.41%	1.6126	1.6578	3.4571	-3.9080	2.1421	-2.7071	0.0713	0.0001	28.5977	33.2842	35.7004	36.6215	34.2248	36.6215	1436.65	1432.21	0.1308	0.0321	0.1307	0.0313	33.7454	36.0601
9.0	10.74%	4.84%	14.64%	1.39%	1.6165	1.6539	2.7457	-3.9999	2.0040	-2.8536	0.0706	0.0001	28.6666	33.8518	36.1450	36.9391	34.5329	36.9391	1478.16	1475.37	0.1270	0.0319	0.1269	0.0311	34.1656	36.4523
10.0	10.28%	4.80%	14.35%	1.37%	1.6111	1.6593	3.0033	-4.0183	2.0661	-2.8392	0.0690	0.0001	28.5721	34.2897	36.5579	37.1296	34.8411	37.1296	1507.91	1506.05	0.1233	0.0315	0.1231	0.0308	34.5324	36.7789
11.0	9.99%	4.72%	14.00%	1.33%	1.6154	1.6550	3.3161	-4.0674	2.1066	-2.8758	0.0674	0.0001	28.6479	34.7113	37.0343	37.3837	35.1005	37.3837	1542.74	1543.38	0.1201	0.0309	0.1200	0.0302	34.8698	37.0816
12.0	9.80%	4.75%	13.70%	1.33%	1.6100	1.6604	3.3222	-4.2330	2.0231	-3.0199	0.0680	0.0001	28.5522	35.1167	37.3837	37.6696	35.4249	37.6696	1569.25	1571.09	0.1176	0.0311	0.1175	0.0304	35.2016	37.3972
13.0	9.35%	4.76%	13.11%	1.34%	1.6117	1.6587	2.7864	-4.2851	2.0334	-3.1276	0.0686	0.0001	28.5812	35.3600	37.6735	37.8879	35.5607	37.8879	1595.34	1596.97	0.1123	0.0312	0.1123	0.0305	35.4483	37.6591
14.0	8.59%	4.80%	12.24%	1.34%	1.6130	1.6574	2.7948	-4.3127	2.0445	-3.1715	0.0680	0.0001	28.6058	35.7006	37.9872	37.9554	35.7492	37.9554	1617.66	1619.00	0.1042	0.0314	0.1041	0.0307	35.6555	37.8798
15.0	7.57%	4.75%	11.12%	1.29%	1.6047	1.6657	2.7089	-4.5396	1.9103	-3.3677	0.0664	0.0001	28.4586	36.0249	38.2730	38.1460	35.8790	38.1460	1633.71	1638.50	0.0935	0.0308	0.0934	0.0302	35.9201	38.0928
16.0	8.41%	4.49%	11.00%	2.05%	1.6007	1.6697	3.4080	-3.4603	2.2729	-2.1164	0.0579	0.0076	28.3872	35.7817	37.9872	38.0825	35.8790	38.0825	1626.05	1621.37	0.0975	0.0326	0.0971	0.0327	35.7852	37.9506
17.0	10.54%	4.23%	13.77%	1.13%	1.6110	1.6594	5.6034	-4.0367	3.2840	-2.5715	0.0577	0.0001	28.5691	35.7006	37.9237	38.0507	35.8628	38.0507	1628.17	1630.29	0.1215	0.0272	0.1216	0.0268	35.7551	37.8170
18.0	8.44%	4.82%	12.11%	1.38%	1.6126	1.6578	3.1321	-4.4292	2.2859	-3.2026	0.0680	0.0001	28.5986	36.3493	38.5271	38.4318	36.1384	38.4318	1674.98	1678.90	0.1027	0.0316	0.1027	0.0310	36.2242	38.3496
19.0	7.93%	4.77%	11.68%	1.34%	1.6056	1.6648	3.0094	-4.6254	2.0624	-3.4484	0.0667	0.0002	28.4731	36.7385	38.9082	38.6542	36.3979	38.6542	1695.09	1701.71	0.0980	0.0311	0.0980	0.0306	36.5203	38.6856
20.0	7.94%	4.78%	11.78%	1.36%	1.6115	1.6589	2.9604	-4.7972	1.9542	-3.5664	0.0664	0.0002	28.5785	37.1277	39.2894	38.8447	36.5601	38.8447	1728.88	1735.84	0.0986	0.0312	0.0986	0.0307	36.7807	38.9355
21.0	8.21%	4.77%	12.19%	1.38%	1.6063	1.6641	2.9910	-4.8707	1.8508	-3.6873	0.0667	0.0005	28.4859	37.3223	39.5752	39.0671	36.7547	39.0671	1746.44	1754.03	0.1020	0.0313	0.1020	0.0308	37.0058	39.1751
22.0	8.51%	4.73%	12.73%	1.41%	1.6128	1.6576	2.7580	-4.8953	1.8488	-3.6955	0.0661	0.0006	28.6019	37.4683	39.7976	39.0988	36.8682	39.0988	1769.98	1777.62	0.1062	0.0312	0.1062	0.0307	37.1533	39.2990
23.0	9.64%	4.74%	14.05%	1.42%	1.6093	1.6611	2.8623	-4.8401	1.9245	-3.6481	0.0666	0.0007	28.5400	37.6791	39.9564	39.1941	36.9980	39.1941	1783.61	1789.99	0.1184	0.0314	0.1184	0.0308	37.3007	39.4364
24.0	10.99%	4.75%	15.62%	1.47%	1.6163	1.6541	2.9849	-4.7542	2.1516	-3.4959	0.0674	0.0008	28.6639	37.7926	39.8928	39.3211	37.1115	39.3211	1803.90	1811.12	0.1330	0.0317	0.1331	0.0311	37.4177	39.5283
25.0	13.13%	4.85%	17.88%	1.54%	1.6143	1.6562	3.2057	-4.9443	2.3038	-3.5817	0.0698	0.0009	28.6272	37.9062	40.1787	39.4799	37.2575	39.4799	1817.53	1821.97	0.1549	0.0326	0.1551	0.0320	37.5425	39.6836
26.0	15.55%	4.83%	20.37%	1.56%	1.6184	1.6520	3.2141	-4.7059	2.3992	-3.4242	0.0712	0.0009	28.7002	38.1150	40.3534	39.5316	37.3487	39.5316	1834.22	1841.97	0.1791	0.0327	0.1796	0.0319	37.6833	39.8418
27.0	18.10%	4.88%	22.99%	1.59%	1.6216	1.6488	3.4755	-4.6438	2.5545	-3.3551	0.0733	0.0010	28.7568	38.2629	40.4963	39.6705	37.4845	39.6705	1856.38	1862.65	0.2048	0.0332	0.2055	0.0323	37.8318	39.9719
28.0	21.46%	4.94%	26.31%	1.66%	1.6198	1.6506	3.9293	-4.6929	2.6894	-3.3038	0.0769	0.0008	28.7264	38.4738	40.6233	39.8293	37.6467	39.8293	1872.56	1880.38	0.2379	0.0341	0.2388	0.0330	38.0051	40.1390
29.0	24.53%	4.84%	29.46%	1.57%	1.6238	1.6466	4.3463	-4.6132	3.0643	-3.1514	0.0760	0.0008	28.7971	38.6684	40.9092	40.0516	37.8575	40.0516	1898.19	1906.85	0.2688	0.0332	0.2700	0.0321	38.2029	40.3751
30.0	28.49%	4.80%	33.37%	1.50%	1.6222	1.6483	3.9784	-4.7420	3.1347	-3.2021	0.0771	0.0007	28.7673	38.7981	41.0680	40.2422	37.9548	40.2422	1915.81	1922.22	0.3078	0.0328	0.3093	0.0315	38.3573	40.5508
31.0	31.67%	4.74%	36.56%	1.49%	1.6254	1.6450	4.1807	-4.7665	3.1585	-3.2647	0.0780	0.0006	28.8244	38.9927	41.2586	40.3693	38.1332	40.3693	1935.86	1942.57	0.3395	0.0326	0.3411	0.0312	38.4981	40.6803
32.0	35.33%	4.66%	39.96%	1.48%	1.6236	1.6468	4.2543	-4.8707	3.1636	-3.3486	0.0774	0.0006	28.7926	39.1549	41.3856	40.4963	38.2305	40.4963	1947.61	1955.65	0.3748	0.0321	0.3765	0.0307	38.6293	40.8135
33.0	39.02%	4.74%	43.59%	1.48%	1.6264	1.6440	4.4015	-4.9505	3.2140	-3.4016	0.0783	0.0005	28.8423	39.2522	41.5762	40.5916	38.2791	40.5916	1960.68	1967.90	0.4114	0.0326	0.4130	0.0311	38.7084	40.9137
34.0	41.94%	4.75%	46.60%	1.47%	1.6246	1.6458	4.3524	-5.0302	3.2741	-3.4633	0.0779	0.0006	28.8105	39.3171	41.5762	40.5598	38.3116	40.5598	1965.56	1972.97	0.4411	0.0325	0.4427	0.0311	38.7712	40.9827
35.0	44.69%	4.64%	49.26%	1.43%	1.6270	1.6434	4.2666	-5.1406	3.3015	-3.5302	0.0764	0.0005	28.8525	39.4630	41.6397	40.6869	38.4413	40.6869	1978.60	1987.06	0.4681	0.0318	0.4697	0.0304	38.8636	41.0586
36.0	47.72%	4.53%	51.99%	1.40%	1.6252	1.6452	4.2053	-5.2326	3.3271	-3.6279	0.0733	0.0005	28.8210	39.5603	41.8303	40.7186	38.5062	40.7186	1989.69	1997.99	0.4971	0.0309	0.4986	0.0297	38.9758	41.1802
37.0	50.95%	4.61%	55.02%	1.43%	1.6274	1.6430	4.3647	-5.3184	3.3842	-3.7274	0.0738	0.0005	28.8606	39.7387	41.9891	40.8774	38.5548	40.8774	2004.27	2014.14	0.5284	0.0314	0.5298	0.0302	39.0901	41.3048
38.0	53.90%	4.65%	57.88%	1.43%	1.6257	1.6447	4.3770	-5.4717	3.4410	-3.8142	0.0740	0.0006	28.8302	39.9009	42.1796	41.0045	38.7008	41.0045	2015.93	2025.70	0.5575	0.0316	0.5589	0.0304	39.2073	41.4384
39.0	56.48%	4.64%	60.41%	1.40%	1.6268	1.6436	4.3524	-5.5200	3.5103	-3.8958	0.0719	0.0006	28.8500	40.0306	42.3543	41.0680	38.7170	41.0680	2030.72	2039.56	0.5833	0.0313	0.5845	0.0302	39.3128	41.5546
40.0	58.70%	4.69%	62.61%	1.43%	1.6279	1.6425	4.4506	-5.6373	3.5878	-3.9637	0.0757	0.0005	28.8685	40.1604	42.4020	41.0998	38.7981	41.0998	2040.79	2050.46	0.6051	0.0319	0.6066	0.0306	39.3906	41.6221
41.0	60.50%	4.62%	64.44%	1.38%	1.6261	1.6443	4.5671	-5.7661	3.6676	-4.0535	0.0727	0.0005	28.8378	40.2739	42.5290	41.1315	38.9441	41.1315	2052.40	2061.76	0.6234	0.0312	0.6247	0.0300	39.5026	41.7370
42.0	62.19%	4.53%	65.98%	1.36%	1.6280	1.6424	4.6161	-5.8949	3.7340	-4.1564	0.0721	0.0004	28.8711	40.4199	42.8148	41.2903	39.0089	41.2903	2069.92	2079.64	0.6395	0.0307	0.6409	0.0294	39.6302	41.8661
43.0	63.72%	4.56%	67.45%	1.37%	1.6263	1.6441	4.6836	-6.0543	3.8005	-4.2651	0.0713	0.0004	28.8404	40.5496	42.9419	41.3538	39.0414	41.3538	2079.75	2090.34	0.6546	0.0308	0.6559	0.0297	39.7404	42.0053
44.0	65.47%	4.49%	69.03%	1.34%	1.6281	1.6423	4.7326	-6.2076	3.8729	-4.3825	0.0713	0.0003	28.8731	40.7604	43.1325	41.4809	39.1873	41.4809	2099.68	2111.43	0.6712	0.0304	0.6725	0.0292	39.8927	42.1582
45.0	67.01%	4.52%	70.45%	1.36%	1.6264	1.6440	4.8185	-6.3303	3.9510	-4.4913	0.0713	0.0003	28.8426	40.9064	43.1960	41.5444	39.3171	41.5444	2115.34	2127.83	0.6860	0.0305	0.6873	0.0294	40.0349	42.2452
46.0	68.68%	4.49%	71.96%	1.35%	1.6282	1.6422	4.8982	-6.5020	4.0228	-4.6080	0.0709	0.0003	28.8747	41.1334	43.3865	41.7667	39.3982	41.7667	2136.63	2149.79	0.7020	0.0304	0.7032	0.0292	40.1936	42.4112
47.0	70.22%	4.50%	73.43%	1.34%	1.6265	1.6439	5.0147	-6.6246	4.1024	-4.7160	0.0704	0.0003	28.8445	41.3280	43.5771	41.8620	39.5765	41.8620	2151.52	2166.85	0.7171	0.0303	0.7182	0.0292	40.3519	42.5956
48.0	71.66%	4.49%	74.75%	1.37%	1.6283	1.6421	5.1435	-6.7963	4.1786	-4.8334	0.0716	0.0003	28.8758	41.6362	43.8947	41.9255	39.6901	41.9255	2180.18	2196.38	0.7308	0.0305	0.7320	0.0293	40.5660	42.8017
49.0	72.92%	4.49%	75.94%	1.37%	1.6266	1.6439	5.2294	-6.9312	4.2463	-4.9547	0.0713	0.0004	28.8454	41.8470	44.1806	42.2114	39.8685	42.2114	2203.65	2219.61	0.7431	0.0305	0.7443	0.0293	40.7661	42.9954
50.0	74.02%	4.52%	76.97%	1.37%	1.6274	1.6430	5.3321	-7.0930	4.3225	-5.0697	0.0703	0.0003	28.8611	42.0558	44.3910	42.2829	39.9759	42.2829	2226.37	2242.82	0.7539	0.0305	0.7550	0.0294	40.9397	43.1804
51.0	75.17%	4.43%	77.98%	1.35%	1.6283	1.6421	5.4501	-7.2256	4.4020	-5.1819	0.0693	0.0003	28.8767	42.2524	44.5299	42.4020	40.0955	42.4020	2243.95	2261.21	0.7647	0.0300	0.7658	0.0289	41.0739	43.3206
52.0	76.16%	4.54%	78.92%	1.39%	1.6266	1.6438	5.5667	-7.4034	4.4749	-5.3080	0.0708	0.0004	28.8463	42.4308	44.6570	42.5608	40.2090	42.5608	2263.24	2281.20	0.7743	0.0307	0.7754	0.0296	41.2456	43.4853
53.0	77.08%	4.60%	79.80%	1.43%	1.6283	1.6421	5.6770	-7.5568	4.5618	-5.4224	0.0725	0.0004	28.8770	42.6416	45.0064	42.6243	40.3063	42.6243	2284.99	2303.63	0.7833	0.0313	0.7844	0.0302	41.4046	43.6827
54.0	77.51%	4.64%	80.26%	1.46%	1.6275	1.6429	5.8012	-7.6518	4.6441	-5.5199	0.0729	0.0005	28.8616	42.8585	45.2485	42.8903	40.4685	42.8903	2304.82	2324.89	0.7878	0.0316	0.7889	0.0305	41.5775	43.8666
55.0	77.67%	4.65%	80.44%	1.47%	1.6266	1.6438	5.8978	-7.7959	4.7152	-5.6232	0.0728	0.0005	28.8461	42.9984	45.3557	43.0054	40.5820	43.0054	2321.50	2341.09	0.7895	0.0317	0.7905	0.0306	41.7109	44.0069
56.0	77.78%	4.63%	80.48%	1.49%	1.6283	1.6421	6.0205	-7.9308	4.7797	-5.7218	0.0736	0.0006	28.8763	43.2093	45.5780	43.0054	40.6793	43.0054	2342.07	2362.36	0.7902	0.0317	0.7913	0.0306	41.8513	44.1374
57.0	77.76%	4.63%	80.42%	1.51%	1.6265	1.6439	6.1186	-8.1209	4.8534	-5.8287	0.0734	0.0007	28.8452	43.4039	45.7369	43.1960	40.7604	43.1960	2358.37	2378.36	0.7898	0.0319	0.7909	0.0307	41.9923	44.2914
58.0	77.57%	4.71%	80.26%	1.52%	1.6283	1.6422	6.2290	-8.2558	4.9404	-5.9443	0.0731	0.0008	28.8755	43.5012	45.9592	43.2277	40.8577	43.2277	2374.74	2395.46	0.7882	0.0322	0.7891	0.0311	42.1062	44.4398
59.0	77.31%	4.70%	79.95%	1.54%	1.6265	1.6439	6.3516	-8.4398	5.0277	-6.0706	0.0727	0.0009	28.8442	43.6309	46.0862	43.3230	40.9550	43.3230	2386.31	2407.43	0.7854	0.0323	0.7863	0.0312	42.2132	44.5372
60.0	77.01%	4.72%	79.56%	1.60%	1.6273	1.6431	6.4980	-8.6039	5.1070	-6.1774	0.0736	0.0009	28.8591	43.7890	46.1775	43.4620	41.0158	43.4620	2400.61	2421.82	0.7819	0.0327	0.7829	0.0316	42.3148	44.6690
61.0	76.85%	4.74%	79.32%	1.62%	1.6282	1.6422	6.6214	-8.7648	5.2032	-6.3185	0.0739	0.0011	28.8742	43.9552	46.4038	43.5771	41.1334	43.5771	2419.85	2441.28	0.7800	0.0328	0.7809	0.0318	42.4511	44.8213
62.0	76.80%	4.79%	79.20%	1.64%	1.6264	1.6440	6.7809	-9.0224	5.2996	-6.5246	0.0735	0.0012	28.8426	44.1499	46.4991	43.6724	41.2145	43.6724	2431.57	2453.98	0.7792	0.0331	0.7800	0.0322	42.5625	44.9221
63.0	76.66%	4.86%	79.03%	1.69%	1.6281	1.6423	6.9526	-9.3045	5.3485	-6.7997	0.0750	0.0014	28.8735	44.2310	46.6579	43.8947	41.2794	43.8947	2448.17	2470.32	0.7776	0.0338	0.7785	0.0328	42.6650	45.0405
64.0	76.54%	4.87%	78.86%	1.70%	1.6263	1.6441	7.1795	-9.6602	5.4139	-7.1107	0.0752	0.0016	28.8417	44.3283	46.8167	43.8312	41.3605	43.8312	2457.42	2480.76	0.7761	0.0339	0.7770	0.0328	42.7607	45.1348
65.0	76.36%	4.91%	78.63%	1.72%	1.6281	1.6423	7.4248	-10.0343	5.4937	-7.4313	0.0748	0.0018	28.8728	44.4256	46.8485	43.9265	41.4415	43.9265	2472.31	2495.12	0.7741	0.0341	0.7749	0.0331	42.8441	45.2076
			80.48%	2.05%			7.1795	-3.3315																		
			11.00%	0.95%			2.5250	-9.6602																		
			45.30%	1.45%																						

data interval set for once per min rather than the 2 per min used on other test runs

SR100 Serial No. 60659

Effects of long-term heat exposure on self-contained self-rescuers

August 31, 2006

Time sec	Exp O2 percent	Exp CO2 percent	Ins O2 percent	Ins CO2 percent	Exp Vol liters	Ins Vol liters	Exp Pk Prs cm H2O	Ins Pk Prs cm H2O	Exp Av Prs cm H2O	Ins Av Prs cm H2O	Exp CO2 Pk liters	Ins CO2Min liters	VE Stpd liers/min	sWB EndT C	sDB EndT C	pDB EndT C	pWB EndT C	pDB EndT C	ExpH2OVapr	InsH2OVapr	uthO2TAv	th CO2TAv	uthO2VAv	th CO2VAv	sWBAvgTp C	sDBAvgTp C
0.0	0.00%	0.00%	0.00%	0.00%	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.00	0.00	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.5	22.47%	0.31%	23.56%	0.47%	1.9635	1.6494	0.8422	-1.0674	0.1541	-0.2314	0.0054	0.0012	25.6169	22.1578	22.7354	28.7193	28.0330	28.7193	905.02	874.85	0.2059	0.0029	0.2302	0.0039	22.6399	23.2869
1.0	21.25%	0.17%	21.87%	0.29%	1.6382	1.6463	0.8643	-1.1778	0.1792	-0.2541	0.0035	0.0018	29.0526	27.4783	29.1767	29.2339	27.5367	29.2339	984.98	957.83	0.2152	0.0024	0.2156	0.0023	27.2572	29.1493
1.5	19.40%	1.97%	19.94%	1.17%	1.6279	1.6566	4.5456	-2.0222	2.7849	-0.3254	0.0253	0.0035	28.8695	28.5000	30.9204	32.2067	30.1056	32.2067	1081.62	1066.11	0.1970	0.0153	0.1967	0.0157	29.0974	31.3856
2.0	18.60%	2.25%	19.84%	0.75%	1.6305	1.6540	3.8447	-3.0874	2.7725	-1.8772	0.0340	0.0002	28.9151	28.9379	31.6922	33.6931	31.2440	33.6931	1144.99	1124.71	0.1923	0.0153	0.1922	0.0150	30.0041	32.6025
2.5	15.19%	3.96%	17.48%	1.28%	1.6262	1.6583	2.6139	-3.7332	2.1198	-2.6454	0.0663	-0.0001	28.8397	29.2663	31.8494	33.7074	31.6746	33.7074	1169.53	1160.16	0.1635	0.0274	0.1634	0.0262	30.4280	32.6844
3.0	12.37%	4.86%	15.32%	1.55%	1.6197	1.6648	2.4980	-3.8601	1.9106	-2.8034	0.0792	-0.0001	28.7245	29.8428	32.4354	34.0933	32.0030	34.0933	1200.46	1188.07	0.1387	0.0334	0.1384	0.0321	30.8630	33.1618
3.5	10.73%	4.92%	13.89%	1.52%	1.6212	1.6633	2.7105	-3.9264	1.8313	-2.9066	0.0766	-0.0001	28.7509	30.2150	32.9928	34.4935	32.1855	34.4935	1223.36	1210.87	0.1234	0.0333	0.1231	0.0322	31.1729	33.6095
4.0	9.47%	5.46%	12.42%	1.70%	1.6187	1.6658	2.7381	-3.4986	2.0651	-1.8667	0.0743	0.0009	28.7059	30.6894	33.4215	34.7079	32.4044	34.7079	1245.12	1232.36	0.1100	0.0362	0.1094	0.0358	31.4854	34.0087
4.5	13.54%	4.11%	17.26%	0.86%	1.6278	1.6567	5.7102	-1.7959	3.7277	-0.6418	0.0488	0.0004	28.8675	30.6602	33.5788	34.7793	32.2949	34.7793	1251.95	1231.36	0.1545	0.0244	0.1540	0.0249	31.4249	34.1057
5.0	12.91%	3.30%	15.17%	1.06%	1.6239	1.6606	3.2900	-3.6918	2.4120	-2.5854	0.0530	-0.0001	28.7981	31.2367	34.1362	35.1366	32.7693	35.1366	1279.69	1270.32	0.1402	0.0226	0.1404	0.0218	31.9241	34.5595
5.5	9.96%	4.58%	13.14%	1.45%	1.6159	1.6686	3.0499	-3.7608	2.3163	-2.6447	0.0695	-0.0002	28.6562	31.5067	34.6078	35.4654	32.9955	35.4654	1295.91	1286.04	0.1158	0.0310	0.1155	0.0302	32.2023	34.9005
6.0	8.94%	4.70%	12.43%	1.45%	1.6182	1.6663	2.6967	-3.9126	2.1400	-2.8195	0.0702	-0.0001	28.6969	31.8206	34.9222	35.6369	33.1707	35.6369	1314.94	1306.44	0.1072	0.0315	0.1069	0.0308	32.4346	35.1918
6.5	8.59%	4.72%	12.14%	1.46%	1.6225	1.6620	2.6084	-4.0036	1.9797	-2.9649	0.0712	-0.0001	28.7743	32.0906	35.2367	35.8655	33.3166	35.8655	1338.73	1330.18	0.1040	0.0317	0.1037	0.0309	32.6735	35.4535
7.0	8.15%	4.64%	11.81%	1.42%	1.6169	1.6676	2.6277	-4.0367	1.9476	-3.0349	0.0691	-0.0001	28.6747	32.4409	35.6369	36.0656	33.4991	36.0656	1352.05	1344.28	0.1001	0.0311	0.0998	0.0303	32.8958	35.7122
7.5	8.11%	4.61%	11.80%	1.39%	1.6113	1.6732	2.6084	-4.1913	1.8934	-3.1298	0.0679	-0.0001	28.5755	32.7328	35.9799	36.2086	33.6669	36.2086	1364.48	1358.39	0.0998	0.0307	0.0995	0.0300	33.1101	35.9289
8.0	8.13%	4.58%	11.83%	1.39%	1.6166	1.6679	2.6001	-4.2023	1.8892	-3.1805	0.0675	-0.0001	28.6684	32.9152	36.1371	36.4230	33.7910	36.4230	1386.45	1380.28	0.1001	0.0305	0.0998	0.0298	33.3155	36.1775
8.5	8.16%	4.55%	11.86%	1.39%	1.6165	1.6680	2.6001	-4.2575	1.8929	-3.2135	0.0680	-0.0001	28.6671	33.0977	36.5659	36.5659	34.0099	36.5659	1403.39	1396.62	0.1003	0.0304	0.1001	0.0297	33.5007	36.3787
9.0	7.79%	4.81%	11.68%	1.47%	1.6209	1.6636	2.7077	-4.3017	1.9083	-3.2616	0.0722	-0.0001	28.7448	33.3750	36.6659	36.7231	34.1632	36.7231	1429.65	1421.36	0.0974	0.0323	0.0973	0.0314	33.7304	36.6131
9.5	7.95%	4.63%	11.67%	1.48%	1.6160	1.6686	2.6277	-4.3127	1.8929	-3.3315	0.0729	-0.0001	28.6577	33.6450	36.9946	36.9946	34.2653	36.9946	1439.02	1432.90	0.0981	0.0316	0.0981	0.0305	33.9160	36.8657
10.0	7.94%	4.64%	11.68%	1.47%	1.6108	1.6738	2.7077	-4.4010	1.9751	-3.3189	0.0722	-0.0001	28.5652	33.8129	37.2948	37.1233	34.3967	37.1233	1448.15	1442.71	0.0981	0.0315	0.0981	0.0305	34.0756	37.0431
10.5	7.88%	4.62%	11.63%	1.46%	1.6158	1.6687	2.7519	-4.3541	2.0324	-3.3176	0.0714	-0.0001	28.6547	34.0099	37.4234	37.2090	34.5937	37.2090	1466.35	1462.60	0.0976	0.0313	0.0976	0.0304	34.2352	37.1803
11.0	7.76%	4.63%	11.44%	1.49%	1.6209	1.6636	2.7188	-4.4783	1.9889	-3.3994	0.0726	-0.0001	28.7457	34.1632	37.6378	37.2948	34.6594	37.2948	1484.74	1483.05	0.0959	0.0316	0.0960	0.0306	34.4002	37.3395
11.5	7.61%	4.64%	11.27%	1.48%	1.6151	1.6694	2.6967	-4.6300	1.9564	-3.5189	0.0726	-0.0001	28.6424	34.3748	37.9237	37.4234	34.7762	37.4234	1494.31	1491.53	0.0943	0.0316	0.0944	0.0306	34.5494	37.5104
12.0	7.39%	4.67%	11.00%	1.48%	1.6090	1.6755	2.8181	-4.6107	1.9976	-3.5267	0.0723	-0.0001	28.5338	34.5427	37.9808	37.6378	34.9805	37.6378	1502.40	1500.53	0.0919	0.0317	0.0920	0.0307	34.7029	37.6651
12.5	7.01%	4.63%	10.56%	1.48%	1.6135	1.6710	2.9174	-4.4921	2.0476	-3.5226	0.0719	-0.0001	28.6137	34.7397	38.1380	37.7807	35.0681	37.7807	1520.77	1518.95	0.0877	0.0315	0.0878	0.0305	34.8496	37.8087
13.0	6.61%	4.60%	10.11%	1.44%	1.6181	1.6664	3.3921	-4.7873	1.9095	-3.8544	0.0704	-0.0001	28.6956	34.8346	38.3810	37.8665	35.1265	37.8665	1536.98	1535.84	0.0836	0.0311	0.0836	0.0302	34.9790	37.9441
13.5	6.39%	4.67%	9.79%	1.47%	1.6115	1.6731	3.2210	-15.2131	0.7766	-6.1370	0.0722	-0.0001	28.5780	35.0316	38.4239	37.8522	35.2141	37.8522	1540.61	1541.74	0.0808	0.0317	0.0809	0.0307	35.1003	38.0495
14.0	5.61%	5.25%	9.28%	1.53%	1.6099	1.6746	2.4897	-61.6433	-8.9884	-20.4449	0.0756	0.0000	28.5497	34.7032	37.9237	37.8522	35.2870	37.8522	1528.15	1540.83	0.0746	0.0346	0.0744	0.0339	35.0911	37.9586
14.5	4.04%	6.39%	8.67%	1.75%	1.5980	1.6865	3.0830	-67.0107	-19.0033	-31.5539	0.0824	0.0005	28.3397	34.2507	37.4663	37.6378	35.3016	37.6378	1502.62	1516.97	0.0642	0.0412	0.0635	0.0407	34.9225	37.5893
15.0	2.71%	6.92%	7.96%	1.82%	1.5982	1.6863	2.9588	-67.0107	-21.1274	-32.7838	0.0840	0.0006	28.3433	34.1559	36.9946	37.4949	35.2141	37.4949	1498.83	1513.83	0.0543	0.0440	0.0534	0.0437	34.8480	37.3077
15.5	4.11%	5.35%	6.73%	2.53%	1.6080	1.6765	3.2376	-30.8269	-4.1103	-9.3611	0.0746	0.0077	28.5161	34.8930	37.9237	37.6950	35.3308	37.6950	1541.39	1545.68	0.0548	0.0396	0.0542	0.0394	35.1116	37.7298
16.0	11.02%	4.89%	13.70%	2.49%	1.5928	1.6917	4.7112	-3.2503	2.1884	-0.5944	0.0564	0.0078	28.2475	34.4478	36.8517	36.9232	34.8127	36.9232	1490.64	1488.41	0.1247	0.0360	0.1236	0.0369	34.5926	36.8610
16.5	12.23%	3.90%	15.38%	1.16%	1.6265	1.6580	4.9375	-4.3237	3.1934	-2.8939	0.0599	-0.0001	28.8449	35.1265	38.1523	37.6378	35.2724	37.6378	1566.87	1562.56	0.1374	0.0261	0.1381	0.0253	35.1037	37.7391
17.0	10.38%	4.70%	13.87%	1.58%	1.6205	1.6640	4.7250	-4.3817	2.7720	-3.0677	0.0761	-0.0001	28.7378	35.5060	38.9956	38.0666	35.5060	38.0666	1588.75	1586.21	0.1207	0.0326	0.1213	0.0314	35.4556	38.3811
17.5	9.68%	4.82%	13.43%	1.59%	1.6146	1.6700	4.2531	-4.4893	2.7580	-3.1037	0.0775	-0.0001	28.6329	35.7395	39.4101	38.4382	35.6811	38.4382	1599.96	1598.62	0.1150	0.0332	0.1155	0.0320	35.6618	38.7209
18.0	9.55%	4.87%	13.33%	1.59%	1.6188	1.6657	3.2348	-4.6025	2.5437	-3.2700	0.0781	-0.0001	28.7082	36.0168	39.6387	38.5668	35.8709	38.5668	1625.78	1624.12	0.1138	0.0335	0.1144	0.0323	35.8872	39.0313
18.5	9.57%	4.85%	13.41%	1.57%	1.6235	1.6610	3.1051	-4.6107	2.4442	-3.3531	0.0777	-0.0001	28.7909	36.2066	39.9818	38.9527	36.0606	38.9527	1646.86	1645.62	0.1143	0.0333	0.1149	0.0321	36.0594	39.2547
19.0	9.63%	4.83%	13.48%	1.58%	1.6189	1.6656	3.2348	-4.6163	2.4926	-3.3761	0.0772	-0.0001	28.7096	36.4547	39.9961	39.1385	36.1628	39.1385	1663.94	1662.08	0.1150	0.0332	0.1156	0.0321	36.2564	39.4181
19.5	9.72%	4.84%	13.58%	1.60%	1.6190	1.6655	3.2210	-4.6714	2.4598	-3.4377	0.0781	-0.0001	28.7113	36.6736	40.3534	39.1385	36.2722	39.1385	1675.08	1674.37	0.1159	0.0334	0.1165	0.0322	36.3885	39.6364
20.0	9.85%	4.85%	13.83%	1.61%	1.6147	1.6699	3.2376	-4.5776	2.4461	-3.4080	0.0778	-0.0001	28.6344	36.9072	41.1252	39.6387	36.4109	39.6387	1688.06	1684.60	0.1178	0.0335	0.1184	0.0323	36.5664	40.0221
20.5	9.94%	4.89%	13.99%	1.62%	1.6195	1.6650	3.2624	-4.6025	2.4805	-3.3908	0.0768	0.0000	28.7208	37.0750	41.2109	39.4958	36.6006	39.4958	1707.51	1703.24	0.1192	0.0336	0.1197	0.0325	36.6967	40.1646
21.0	10.04%	4.82%	14.17%	1.62%	1.6242	1.6603	3.3811	-4.5555	2.5563	-3.3347	0.0770	0.0000	28.8033	37.1699	41.2967	39.6959	36.6736	39.6959	1723.74	1720.71	0.1205	0.0333	0.1211	0.0322	36.8120	40.2688
21.5	10.20%	4.82%	14.45%	1.61%	1.6199	1.6646	3.3176	-4.5197	2.6432	-3.2607	0.0757	-0.0001	28.7270	37.2939	41.4253	39.7817	36.7101	39.7817	1733.23	1728.69	0.1228	0.0332	0.1233	0.0322	36.9267	40.3743
22.0	10.53%	4.80%	14.84%	1.63%	1.6160	1.6685	4.0654	-4.4672	2.9236	-3.0729	0.0764	0.0001	28.6591	37.4034	41.5254	39.8103	36.9072	39.8103	1740.48	1736.68	0.1263	0.0332	0.1269	0.0322	37.0370	40.4727
22.5	11.35%	4.65%	15.79%	1.51%	1.6214	1.6631	4.2834	-4.5197	3.0178	-3.1328	0.0758	0.0000	28.7538	37.5494	41.7826	39.9246	37.0020	39.9246	1755.33	1752.31	0.1347	0.0321	0.1357	0.0308	37.1365	40.6190
23.0	12.37%	4.72%	16.76%	1.59%	1.6264	1.6581	4.2972	-4.5224	2.9997	-3.1246	0.0778	0.0000	28.8424	37.6077	41.9255	40.0961	37.0531	40.0961	1773.90	1770.64	0.1445	0.0329	0.1456	0.0315	37.2632	40.7952
23.5	13.17%	4.74%	17.83%	1.52%	1.6232	1.6613	4.1041	-4.5473	3.0285	-3.1484	0.0781	0.0001	28.7864	37.8048	42.0685	40.2819	37.1115	40.2819	1781.04	1776.50	0.1538	0.0327	0.1550	0.0313	37.3424	40.8427
24.0	14.02%	4.64%	18.68%	1.52%	1.6205	1.6640	4.1648	-4.6218	3.0200	-3.1887	0.0772	0.0001	28.7377	37.9289	42.2114	40.2676	37.2575	40.2676	1789.74	1786.54	0.1622	0.0322	0.1635	0.0308	37.4583	40.9431
24.5	15.29%	4.70%	19.80%	1.63%	1.6251	1.6594	4.2834	-4.6714	3.0028	-3.2137	0.0805	0.0000	28.8193	38.0237	42.2829	40.2104	37.3669	40.2104	1808.00	1804.61	0.1740	0.0332	0.1754	0.0317	37.5799	41.0897
25.0	16.41%	4.79%	21.08%	1.62%	1.6259	1.6586	4.1593	-4.6163	3.0372	-3.2240	0.0830	0.0001	28.8334	38.1332	42.4972	40.3534	37.3669	40.3534	1818.92	1814.88	0.1857	0.0337	0.1874	0.0320	37.6660	41.1868
25.5	17.50%	4.75%	22.34%	1.56%	1.6297	1.6548	4.1317	-4.5997	3.0473	-3.2504	0.0814	0.0001	28.9011	38.2500	42.5544	40.4963	37.5202	40.4963	1832.71	1828.42	0.1975	0.0332	0.1992	0.0316	37.7506	41.2817
26.0	19.05%	4.68%	23.69%	1.62%	1.6272	1.6574	4.3524	-4.6990	3.0391	-3.3012	0.0823	0.0000	28.8560	38.3156	42.6402	40.8536	37.6223	40.8536	1841.64	1838.66	0.2118	0.0332	0.2137	0.0315	37.8695	41.4167
26.5	20.62%	4.84%	25.37%	1.67%	1.6252	1.6594	4.0213	-4.6880	3.0549	-3.3172	0.0865	0.0000	28.8205	38.4543	42.8403	40.7821	37.6369	40.7821	1849.89	1847.62	0.2279	0.0345	0.2300	0.0325	37.9736	41.5489
27.0	22.02%	4.85%	26.88%	1.66%	1.6287	1.6559	4.1041	-4.7680	3.0860	-3.3155	0.0858	0.0000	28.8827	38.5346	42.9260	40.8536	37.8048	40.8536	1866.56	1863.15	0.2424	0.0344	0.2445	0.0325	38.0761	41.6560
27.5	23.60%	4.63%	28.37%	1.60%	1.6318	1.6528	4.0765	-4.7763	3.0937	-3.3632	0.0844	0.0000	28.9376	38.7170	43.0689	40.9537	37.8121	40.9537	1879.62	1875.88	0.2575	0.0331	0.2598	0.0312	38.1599	41.7608
28.0	25.44%	4.70%	30.05%	1.69%	1.6296	1.6549	4.2283	-4.8370	3.0896	-3.4053	0.0879	0.0000	28.8997	38.7900	43.1404	41.0680	37.9143	41.0680	1886.69	1883.93	0.2750	0.0341	0.2775	0.0320	38.2578	41.8960
28.5	27.37%	4.81%	32.01%	1.72%	1.6278	1.6568	4.1096	-4.8536	3.1211	-3.4152	0.0909	0.0000	28.8669	38.8922	43.2404	41.1252	38.0456	41.1252	1896.55	1894.48	0.2943	0.0349	0.2969	0.0326	38.3690	42.0119
29.0	29.03%	4.81%	33.80%	1.68%	1.6307	1.6539	4.1455	-4.8646	3.1555	-3.4193	0.0895	0.0000	28.9183	38.9360	43.2833	41.2109	38.1332	41.2109	1909.75	1906.68	0.3115	0.0346	0.3141	0.0324	38.4418	42.0630
29.5	30.45%	4.78%	35.28%	1.68%	1.6332	1.6513	4.2200	-4.9308	3.1791	-3.4489	0.0919	0.0000	28.9635	39.0673	43.4119	41.3538	38.1916	41.3538	1921.95	1918.23	0.3258	0.0346	0.3287	0.0323	38.5178	42.1536
30.0	32.00%	4.68%	36.81%	1.63%	1.6312	1.6533	4.2145	-4.9750	3.1889	-3.4931	0.0882	0.0000	28.9277	39.1549	43.7121	41.4253	38.1697	41.4253	1928.68	1925.66	0.3414	0.0337	0.3441	0.0315	38.6048	42.2580
30.5	34.01%	4.52%	38.56%	1.60%	1.6294	1.6551	4.1317	-5.0192	3.1867	-3.5482	0.0862	-0.0001	28.8958	39.2717	43.6978	41.5254	38.3375	41.5254	1935.79	1932.94	0.3602	0.0328	0.3628	0.0306	38.6907	42.3767
31.0	35.97%	4.65%	40.44%	1.65%	1.6319	1.6526	4.2145	-5.1130	3.2073	-3.5772	0.0879	-0.0001	28.9401	39.3373	43.9265	41.6397	38.4251	41.6397	1949.28	1945.78	0.3794	0.0337	0.3821	0.0315	38.7778	42.4809
31.5	37.68%	4.70%	42.09%	1.66%	1.6321	1.6524	4.2007	-5.0716	3.2303	-3.5962	0.0889	0.0000	28.9444	39.4468	43.9265	41.6397	38.4251	41.6397	1955.68	1953.60	0.3962	0.0340	0.3989	0.0318	38.8412	42.5415
32.0	39.20%	4.88%	43.74%	1.71%	1.6343	1.6502	4.2972	-5.0964	3.2655	-3.6107	0.0929	0.0000	28.9829	39.5636	43.9265	41.6397	38.5127	41.6397	1968.15	1964.59	0.4119	0.0353	0.4147	0.0329	38.9138	42.6240
32.5	40.63%	4.85%	45.21%	1.70%	1.6325	1.6520	4.3248	-5.1820	3.3071	-3.6283	0.0939	0.0000	28.9506	39.5928	44.2123	41.7112	38.5711	41.7112	1973.08	1969.61	0.4263	0.0352	0.4292	0.0327	38.9741	42.6813
33.0	41.93%	4.74%	46.50%	1.66%	1.6307	1.6538	4.3635	-5.2178	3.3212	-3.6690	0.0912	-0.0001	28.9196	39.6803	44.1552	41.7540	38.6586	41.7540	1978.06	1974.65	0.4392	0.0344	0.4421	0.0320	39.0318	42.7234
33.5	43.00%	4.76%	47.63%	1.66%	1.6328	1.6517	4.3524	-5.2786	3.3372	-3.7074	0.0913	0.0000	28.9559	39.7022	44.3552	41.9255	38.6076	41.9255	1988.88	1985.60	0.4503	0.0345	0.4532	0.0321	39.1066	42.8203
34.0	44.34%	4.69%	48.86%	1.64%	1.6348	1.6498	4.3635	-5.3613	3.3547	-3.7471	0.0902	-0.0001	28.9912	39.8263	44.3267	41.9255	38.7170	41.9255	2000.11	1995.95	0.4632	0.0340	0.4660	0.0316	39.1781	42.9241
34.5	45.79%	4.59%	50.16%	1.61%	1.6330	1.6515	4.3524	-5.3337	3.3745	-3.7944	0.0884	-0.0001	28.9600	39.8847	44.5696	42.0685	38.7535	42.0685	2004.40	2003.43	0.4770	0.0333	0.4797	0.0310	39.2632	43.0394
35.0	47.44%	4.49%	51.60%	1.59%	1.6313	1.6532	4.2752	-5.4276	3.3818	-3.8422	0.0877	-0.0001	28.9300	40.0306	44.7269	42.0970	38.8338	42.0970	2013.04	2010.12	0.4925	0.0327	0.4952	0.0304	39.3409	43.1466
35.5	49.10%	4.59%	53.15%	1.60%	1.6333	1.6512	4.3938	-5.4855	3.3998	-3.8866	0.0863	0.0000	28.9651	40.1036	44.8555	42.2114	38.9360	42.2114	2024.88	2021.13	0.5088	0.0331	0.5112	0.0309	39.4151	43.2406
36.0	50.64%	4.70%	54.63%	1.65%	1.6352	1.6493	4.2972	-5.5490	3.4290	-3.9236	0.0892	0.0000	28.9984	40.2642	44.8984	42.3257	39.0089	42.3257	2035.07	2033.48	0.5238	0.0340	0.5264	0.0318	39.4989	43.3311
36.5	52.28%	4.67%	56.17%	1.65%	1.6335	1.6510	4.3524	-5.5683	3.4536	-3.9683	0.0886	0.0000	28.9688	40.3225	44.9984	42.3543	38.9724	42.3543	2043.57	2040.78	0.5397	0.0338	0.5423	0.0316	39.5789	43.4293
37.0	53.52%	4.71%	57.44%	1.64%	1.6336	1.6509	4.4214	-5.6373	3.4833	-3.9985	0.0887	0.0000	28.9704	40.4685	45.1413	42.4972	39.1184	42.4972	2052.65	2052.07	0.5523	0.0339	0.5548	0.0318	39.6702	43.5179
37.5	55.04%	4.63%	58.81%	1.65%	1.6320	1.6525	4.4407	-5.6704	3.5143	-4.0347	0.0892	0.0000	28.9418	40.5853	45.1842	42.4972	39.1841	42.4972	2061.53	2058.96	0.5666	0.0337	0.5693	0.0314	39.7473	43.6213
38.0	56.18%	4.72%	60.03%	1.65%	1.6338	1.6507	4.5180	-5.6787	3.5452	-4.0735	0.0888	0.0000	28.9736	40.5780	45.3557	42.5687	39.3008	42.5687	2072.16	2069.83	0.5785	0.0341	0.5810	0.0319	39.8185	43.6989
38.5	57.39%	4.65%	61.18%	1.64%	1.6355	1.6490	4.4959	-5.7698	3.5811	-4.1046	0.0886	0.0000	29.0045	40.7312	45.5272	42.7259	39.3008	42.7259	2083.29	2080.36	0.5903	0.0337	0.5928	0.0314	39.8869	43.7736
39.0	58.25%	4.73%	62.13%	1.66%	1.6339	1.6506	4.5732	-5.8167	3.6189	-4.1324	0.0889	0.0000	28.9755	40.7969	45.5701	42.5687	39.3738	42.5687	2088.26	2086.79	0.5994	0.0342	0.6019	0.0319	39.9565	43.8472
39.5	58.95%	4.76%	62.92%	1.63%	1.6323	1.6523	4.6394	-5.8801	3.6489	-4.1697	0.0888	-0.0001	28.9466	40.9064	45.6987	42.7831	39.4176	42.7831	2097.78	2094.96	0.6069	0.0341	0.6093	0.0320	40.0399	43.9339

SR100 Serial No. 60659

Effects of long-term heat exposure on self-contained self-rescuers

August 31, 2006

Time sec	Exp O2 percent	Exp CO2 percent	Ins O2 percent	Ins CO2 percent	Exp Vol liters	Ins Vol liters	Exp Pk Prs cm H2O	Ins Pk Prs cm H2O	Exp Av Prs cm H2O	Ins Av Prs cm H2O	xp CO2 Pk liters	ns CO2Min liters	VE Stpd liers/min	sWB EndT C	sDB EndT C	pDB EndT C	pWB EndT C	pDB EndT C	ExpH2OVapr	InsH2OVapr	uthO2TAv	th CO2TAv	uthO2VAv	th CO2VAv	sWBAvgTp C	sDBAvgTp C
40.0	59.53%	4.74%	63.50%	1.66%	1.6340	1.6506	4.6698	-5.8719	3.6792	-4.2110	0.0899	0.0000	28.9767	41.0158	45.7845	42.7831	39.4468	42.7831	2108.77	2106.92	0.6126	0.0343	0.6152	0.0320	40.1203	44.0243
40.5	60.30%	4.57%	64.16%	1.60%	1.6356	1.6489	4.6836	-5.9574	3.7091	-4.2444	0.0880	-0.0001	29.0065	41.0815	45.8702	42.8403	39.5344	42.8403	2119.24	2117.22	0.6196	0.0332	0.6223	0.0309	40.1884	44.1110
41.0	60.86%	4.58%	64.69%	1.59%	1.6340	1.6505	4.6836	-6.0374	3.7290	-4.2863	0.0876	-0.0001	28.9775	41.1983	46.0703	43.0689	39.5563	43.0689	2124.44	2124.71	0.6252	0.0331	0.6278	0.0308	40.2679	44.2076
41.5	61.53%	4.52%	65.27%	1.58%	1.6324	1.6522	4.7498	-6.1009	3.7586	-4.3361	0.0866	-0.0001	28.9486	41.2275	46.1561	43.0118	39.6511	43.0118	2133.47	2132.15	0.6314	0.0327	0.6340	0.0305	40.3508	44.3335
42.0	62.10%	4.55%	65.79%	1.60%	1.6340	1.6505	4.7526	-6.1616	3.7903	-4.3791	0.0888	-0.0001	28.9782	41.4172	46.3562	42.9975	39.7752	42.9975	2147.67	2146.81	0.6368	0.0331	0.6395	0.0308	40.4499	44.4314
42.5	62.57%	4.62%	66.27%	1.61%	1.6341	1.6505	4.7664	-6.1892	3.8172	-4.4214	0.0888	-0.0001	28.9785	41.4902	46.4277	43.3548	39.8482	43.3548	2157.65	2156.89	0.6417	0.0335	0.6442	0.0311	40.5328	44.5354
43.0	63.37%	4.53%	66.98%	1.56%	1.6357	1.6488	4.8050	-6.2775	3.8430	-4.4696	0.0869	-0.0001	29.0078	41.6362	46.5563	43.2976	39.8847	43.2976	2171.82	2170.67	0.6493	0.0327	0.6517	0.0305	40.6288	44.6616
43.5	64.08%	4.53%	67.58%	1.57%	1.6341	1.6504	4.7940	-6.2858	3.8841	-4.5230	0.0868	-0.0001	28.9792	41.7091	46.7850	43.4977	39.9577	43.4977	2178.72	2179.07	0.6559	0.0327	0.6583	0.0305	40.7145	44.7654
44.0	64.64%	4.62%	68.16%	1.60%	1.6325	1.6520	4.8492	-6.4431	3.9159	-4.5659	0.0869	-0.0001	28.9507	41.8405	46.8421	43.4119	40.0306	43.4119	2188.49	2188.18	0.6616	0.0333	0.6640	0.0311	40.8065	44.8822
44.5	65.44%	4.52%	68.83%	1.58%	1.6341	1.6504	4.9457	-6.4790	3.9535	-4.6162	0.0863	-0.0001	28.9800	41.9646	46.9994	43.6406	40.1401	43.6406	2201.28	2202.04	0.6690	0.0327	0.6714	0.0305	40.9025	45.0108
45.0	66.08%	4.55%	69.46%	1.58%	1.6358	1.6487	4.9154	-6.5535	3.9854	-4.6819	0.0867	-0.0001	29.0090	42.1032	47.1280	43.6406	40.1766	43.6406	2214.63	2215.78	0.6753	0.0329	0.6777	0.0306	40.9927	45.1059
45.5	66.93%	4.47%	70.15%	1.57%	1.6342	1.6503	4.9457	-6.6032	4.0138	-4.7307	0.0859	-0.0001	28.9806	42.0740	47.3567	43.9265	40.2131	43.9265	2221.15	2221.36	0.6830	0.0324	0.6854	0.0302	41.0583	45.2081
46.0	67.66%	4.54%	70.86%	1.58%	1.6326	1.6519	4.9927	-6.6970	4.0477	-4.7877	0.0864	-0.0001	28.9525	42.2200	47.3567	43.9265	40.2642	43.9265	2230.33	2231.60	0.6903	0.0328	0.6926	0.0306	41.1568	45.3234
46.5	68.47%	4.54%	71.60%	1.55%	1.6342	1.6503	5.0423	-6.7273	4.0934	-4.8487	0.0839	-0.0001	28.9815	42.3659	47.5711	43.9265	40.3225	43.9265	2241.71	2243.16	0.6983	0.0325	0.7004	0.0305	41.2340	45.4365
47.0	69.15%	4.59%	72.24%	1.60%	1.6358	1.6487	5.0810	-6.8184	4.1312	-4.9049	0.0861	-0.0001	29.0102	42.4827	47.7568	44.0408	40.4393	44.0408	2256.23	2258.51	0.7047	0.0331	0.7069	0.0309	41.3386	45.5676
47.5	69.99%	4.50%	72.97%	1.57%	1.6343	1.6503	5.1251	-6.8929	4.1708	-4.9543	0.0852	-0.0001	28.9820	42.6579	47.7854	44.0694	40.5780	44.0694	2267.16	2269.71	0.7126	0.0325	0.7148	0.0304	41.4470	45.7161
48.0	70.56%	4.51%	73.54%	1.56%	1.6343	1.6502	5.1527	-6.9619	4.2038	-5.0095	0.0849	-0.0001	28.9823	42.6944	48.2142	44.2838	40.5415	44.2838	2277.15	2281.19	0.7184	0.0325	0.7205	0.0304	41.5363	45.8186
48.5	71.23%	4.47%	74.13%	1.56%	1.6327	1.6518	5.2024	-7.0281	4.2462	-5.0644	0.0839	-0.0001	28.9542	42.8622	48.2142	44.3267	40.7312	44.3267	2290.38	2293.52	0.7247	0.0322	0.7268	0.0302	41.6492	45.9479
49.0	71.86%	4.46%	74.73%	1.55%	1.6343	1.6502	5.2493	-7.0999	4.2844	-5.1199	0.0836	-0.0001	28.9827	42.9133	48.3571	44.4982	40.7969	44.4982	2304.92	2307.22	0.7309	0.0321	0.7329	0.0300	41.7413	46.0773
49.5	72.42%	4.47%	75.23%	1.57%	1.6359	1.6486	5.3017	-7.1716	4.3240	-5.1774	0.0852	-0.0001	29.0110	43.0665	48.5572	44.5553	40.9064	44.5553	2318.83	2323.14	0.7361	0.0324	0.7382	0.0302	41.8472	46.2052
50.0	72.96%	4.50%	75.77%	1.57%	1.6343	1.6502	5.3873	-7.2517	4.3555	-5.2351	0.0843	-0.0001	28.9829	43.2417	48.7859	44.7840	40.9429	44.7840	2327.80	2332.61	0.7415	0.0324	0.7436	0.0304	41.9404	46.3344
50.5	73.48%	4.49%	76.22%	1.60%	1.6327	1.6518	5.4452	-7.3482	4.3991	-5.2913	0.0862	-0.0001	28.9548	43.3001	48.8431	44.7269	41.0523	44.7269	2341.42	2345.13	0.7463	0.0327	0.7485	0.0305	42.0493	46.4314
51.0	73.91%	4.59%	76.70%	1.60%	1.6343	1.6502	5.4977	-7.4034	4.4335	-5.3486	0.0846	-0.0001	28.9830	43.4606	48.8574	44.7840	41.1253	44.7840	2359.03	2359.98	0.7511	0.0329	0.7531	0.0310	42.1482	46.5659
51.5	74.48%	4.53%	77.19%	1.59%	1.6359	1.6486	5.5446	-7.4917	4.4684	-5.4056	0.0843	-0.0001	29.0113	43.5336	49.1289	44.8412	41.1691	44.8412	2369.63	2374.10	0.7563	0.0326	0.7583	0.0306	42.2400	46.6874
52.0	74.95%	4.54%	77.60%	1.63%	1.6343	1.6502	5.5943	-7.5690	4.5114	-5.4615	0.0870	-0.0001	28.9832	43.7160	49.2861	44.9984	41.2713	44.9984	2379.66	2385.05	0.7606	0.0330	0.7627	0.0308	42.3398	46.7997
52.5	75.38%	4.52%	78.00%	1.60%	1.6327	1.6518	5.6550	-7.6794	4.5554	-5.5137	0.0845	-0.0001	28.9550	43.8255	49.4148	45.1270	41.3151	45.1270	2390.89	2393.12	0.7649	0.0327	0.7669	0.0306	42.4196	46.9011
53.0	75.68%	4.63%	78.36%	1.61%	1.6343	1.6502	5.7598	-7.7484	4.5947	-5.5742	0.0828	-0.0001	28.9831	43.8985	49.5720	45.0699	41.4172	45.0699	2404.57	2409.06	0.7684	0.0330	0.7702	0.0312	42.5191	46.9962
53.5	76.16%	4.48%	78.69%	1.62%	1.6343	1.6502	5.8150	-7.8036	4.6376	-5.6214	0.0843	-0.0001	28.9831	44.0444	49.5720	45.1413	41.4537	45.1413	2417.27	2419.76	0.7723	0.0325	0.7743	0.0305	42.6012	47.1050
54.0	76.43%	4.52%	78.95%	1.63%	1.6359	1.6486	5.7985	-7.8560	4.6777	-5.6806	0.0854	-0.0001	29.0112	44.1466	49.6435	45.3557	41.5194	45.3557	2429.52	2435.53	0.7748	0.0329	0.7769	0.0308	42.6998	47.2087
54.5	76.56%	4.64%	79.19%	1.62%	1.6343	1.6502	5.8840	-7.9416	4.7219	-5.7336	0.0840	-0.0001	28.9830	44.2999	49.8578	45.4272	41.5997	45.4272	2437.75	2442.71	0.7770	0.0332	0.7788	0.0313	42.7729	47.3077
55.0	76.81%	4.56%	79.36%	1.63%	1.6327	1.6518	5.9640	-7.9995	4.7654	-5.7879	0.0848	-0.0001	28.9546	44.2926	49.9293	45.5844	41.6070	45.5844	2447.34	2452.13	0.7790	0.0329	0.7809	0.0310	42.8588	47.3933
55.5	76.89%	4.57%	79.41%	1.67%	1.6343	1.6502	6.0358	-8.0519	4.8137	-5.8369	0.0867	-0.0001	28.9827	44.3729	50.1437	45.6416	41.7091	45.6416	2453.87	2458.84	0.7794	0.0334	0.7815	0.0312	42.8943	47.4592
56.0	76.83%	4.61%	79.43%	1.64%	1.6359	1.6486	6.0965	-8.1651	4.8486	-5.8990	0.0848	-0.0001	29.0110	44.3801	50.1580	45.5844	41.7529	45.5844	2458.45	2465.30	0.7794	0.0332	0.7813	0.0312	42.9241	47.4921
56.5	76.84%	4.57%	79.38%	1.66%	1.6343	1.6502	6.1186	-8.2589	4.8883	-5.9627	0.0851	-0.0001	28.9826	44.5553	50.2866	45.5701	41.7821	45.5701	2465.83	2469.56	0.7792	0.0331	0.7811	0.0311	42.9784	47.5897
57.0	76.82%	4.53%	79.34%	1.63%	1.6327	1.6519	6.1848	-8.3307	4.9386	-6.0168	0.0836	-0.0001	28.9539	44.6137	50.2723	45.7559	41.8405	45.7559	2475.22	2479.51	0.7790	0.0328	0.7808	0.0308	43.0659	47.6649
57.5	76.74%	4.60%	79.26%	1.66%	1.6342	1.6503	6.2428	-8.4659	4.9879	-6.0829	0.0848	-0.0001	28.9819	44.7377	50.4295	45.6416	41.8186	45.6416	2488.57	2496.05	0.7782	0.0332	0.7800	0.0313	43.1680	47.7691
58.0	76.82%	4.52%	79.24%	1.67%	1.6358	1.6487	6.2952	-8.4962	5.0321	-6.1541	0.0843	-0.0001	29.0101	44.8472	50.6153	45.8131	41.9573	45.8131	2503.89	2511.03	0.7784	0.0329	0.7803	0.0309	43.2582	47.8643
58.5	76.70%	4.65%	79.15%	1.72%	1.6342	1.6503	6.3807	-8.5763	5.0816	-6.2158	0.0855	-0.0001	28.9813	44.9932	50.6439	45.8560	42.0375	45.8560	2514.87	2521.20	0.7774	0.0338	0.7792	0.0318	43.3504	47.9703
59.0	76.73%	4.58%	79.12%	1.70%	1.6326	1.6519	6.4497	-8.7060	5.1261	-6.2983	0.0862	-0.0001	28.9524	45.0516	50.8440	45.9846	42.1032	45.9846	2524.29	2531.61	0.7773	0.0334	0.7792	0.0314	43.4416	48.0557
59.5	76.76%	4.53%	79.07%	1.71%	1.6342	1.6503	6.5187	-8.8384	5.1855	-6.3621	0.0848	-0.0001	28.9807	45.1391	50.7868	46.0703	42.1105	46.0703	2535.56	2542.46	0.7773	0.0332	0.7791	0.0312	43.4999	48.1062
60.0	76.65%	4.62%	78.99%	1.74%	1.6342	1.6504	6.5739	-8.8936	5.2302	-6.4205	0.0866	-0.0001	28.9805	45.2486	50.9298	45.9989	42.2200	45.9989	2544.37	2550.96	0.7764	0.0338	0.7782	0.0318	43.5606	48.1691
60.5	76.63%	4.62%	78.93%	1.73%	1.6358	1.6487	6.7146	-9.0482	5.2900	-6.5021	0.0848	-0.0001	29.0090	45.2851	51.0727	46.2133	42.2784	46.2133	2557.92	2565.03	0.7761	0.0336	0.7778	0.0317	43.6447	48.2726
61.0	76.58%	4.65%	78.88%	1.73%	1.6341	1.6504	6.7809	-9.1834	5.3466	-6.5787	0.0842	-0.0001	28.9800	45.4675	51.3585	46.1418	42.3659	46.1418	2566.55	2575.84	0.7757	0.0337	0.7773	0.0319	43.7391	48.3688
61.5	76.54%	4.64%	78.75%	1.78%	1.6325	1.6520	6.8692	-9.2358	5.4076	-6.6640	0.0857	-0.0001	28.9508	45.5186	51.3585	46.4419	42.3951	46.4419	2577.12	2585.09	0.7747	0.0340	0.7765	0.0321	43.8246	48.4721
62.0	76.50%	4.63%	78.68%	1.77%	1.6341	1.6504	6.9740	-9.3628	5.4673	-6.7498	0.0863	-0.0001	28.9794	45.5770	51.2871	46.4991	42.4389	46.4991	2587.72	2598.07	0.7742	0.0339	0.7759	0.0320	43.8985	48.5529
62.5	76.41%	4.69%	78.60%	1.81%	1.6357	1.6488	7.0348	-9.5338	5.5125	-6.8696	0.0874	-0.0001	29.0081	45.7230	51.5300	46.4419	42.4827	46.4419	2601.91	2611.78	0.7733	0.0345	0.7751	0.0325	43.9760	48.6293
63.0	76.37%	4.69%	78.53%	1.78%	1.6341	1.6504	7.1258	-9.6663	5.5427	-7.0294	0.0848	0.0000	28.9788	45.7959	51.5729	46.4991	42.5849	46.4991	2609.87	2620.05	0.7729	0.0341	0.7745	0.0323	44.0552	48.7338
63.5	76.31%	4.69%	78.42%	1.81%	1.6324	1.6521	7.2445	-9.8540	5.5796	-7.1921	0.0863	0.0000	28.9494	45.8689	51.6444	46.6135	42.6579	46.6135	2619.15	2629.54	0.7720	0.0344	0.7737	0.0325	44.1384	48.8076
64.0	76.21%	4.70%	78.28%	1.83%	1.6340	1.6505	7.3742	-9.9975	5.6238	-7.3799	0.0864	0.0000	28.9781	45.9419	51.5729	46.7135	42.6944	46.7135	2629.96	2641.39	0.7708	0.0345	0.7724	0.0326	44.1992	48.8441
			79.43%	2.53%			7.3742	-1.7959																		
			6.73%	0.75%			2.4897	-67.0107																		
			44.57%	1.60%																						

Bag went flat at 29 min and had to take external breaths to reinflate - ignored the inspired value at 29 min use end of life max at 64 min

SR100 Serial No. 60661

Effects of long-term heat expsoure on self-conatined self-rescuers

August 31, 2006

Time sec	Exp O2 percent	Exp CO2 percent	Ins O2 percent	Ins CO2 percent	Exp Vol liters	Ins Vol liters	Exp Pk Prs cm H2O	Ins Pk Prs cm H2O	Exp Av Prs cm H2O	Ins Av Prs cm H2O	xp CO2 Pk liters	ns CO2Min liters	VE Stpd liers/min	sWB EndT C	sDB EndT C	pDB EndT C	pWB EndT C	pDB EndT C	ExpH2OVapr	InsH2OVapr	uthO2TAv	th CO2TAv	uthO2VAv	th CO2VAv	WBAvgTp C	sDBAvgTp C
0.0	0.00%	0.00%	0.00%	0.00%	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.00	0.00	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.5	22.32%	1.38%	22.55%	1.12%	1.9579	1.6447	4.2531	-14.5563	2.1201	-0.9471	0.0202	0.0002	25.5435	24.1720	26.2227	33.8074	31.2732	33.8074	1010.89	1032.87	0.2036	0.0094	0.2243	0.0125	25.3441	27.4665
1.0	21.45%	0.64%	21.87%	0.12%	1.6334	1.6417	5.2245	-2.8777	3.4101	-1.2091	0.0114	-0.0006	28.9669	29.7261	33.2357	34.5506	31.5651	34.5506	1170.92	1177.03	0.2167	0.0040	0.2166	0.0038	30.7300	33.9392
1.5	20.93%	1.20%	21.42%	0.31%	1.6241	1.6510	3.6487	-6.6446	1.6694	-4.7101	0.0251	-0.0007	28.8016	26.1647	31.9923	33.9932	29.4123	33.9932	867.24	962.96	0.2113	0.0083	0.2117	0.0075	28.2395	33.0665
2.0	17.03%	3.50%	18.55%	1.01%	1.6255	1.6496	3.8888	-6.9509	2.4298	-5.1414	0.0612	-0.0006	28.8261	28.1497	33.0071	35.0652	31.4192	35.0652	1037.94	1122.00	0.1776	0.0239	0.1779	0.0226	30.2477	33.9199
2.5	12.52%	4.89%	14.58%	1.40%	1.6195	1.6556	3.5246	-11.4049	1.5945	-6.6834	0.0797	-0.0005	28.7200	28.5000	33.1357	35.0652	31.4922	35.0652	1050.78	1127.92	0.1354	0.0329	0.1355	0.0314	30.3820	34.0569
3.0	13.11%	5.46%	15.39%	3.09%	1.6041	1.6710	4.3414	-3.0102	2.9218	-0.6490	0.0603	0.0162	28.4476	31.8570	33.9218	35.1223	32.7328	35.1223	1279.85	1305.71	0.1434	0.0417	0.1425	0.0428	32.3594	34.4568
3.5	14.86%	3.45%	17.12%	0.87%	1.6203	1.6548	4.6008	-5.9547	3.5053	-3.7611	0.0511	-0.0006	28.7353	29.5947	33.8503	35.4939	32.4044	35.4939	1175.22	1211.24	0.1594	0.0222	0.1599	0.0216	31.3347	34.6278
4.0	12.23%	4.39%	15.12%	1.22%	1.6184	1.6567	3.7867	-6.0650	2.9223	-4.2262	0.0687	-0.0006	28.7010	29.0839	33.8503	35.5654	32.0030	35.5654	1098.70	1167.18	0.1367	0.0292	0.1368	0.0281	30.9076	34.6045
4.5	10.79%	4.69%	14.08%	1.31%	1.6209	1.6542	3.7784	-6.1451	2.7895	-4.3769	0.0728	-0.0006	28.7457	29.2590	34.0933	35.4654	32.1198	35.4654	1112.69	1181.26	0.1243	0.0312	0.1243	0.0300	31.0600	34.7445
5.0	9.90%	4.75%	13.40%	1.31%	1.6158	1.6593	3.8695	-6.2168	2.7715	-4.4534	0.0726	-0.0005	28.6542	29.5947	34.4220	35.5654	32.2584	35.5654	1127.13	1194.34	0.1165	0.0314	0.1165	0.0303	31.2689	34.9393
5.5	9.66%	4.58%	13.19%	1.24%	1.6105	1.6646	3.8557	-6.3106	2.7501	-4.5447	0.0691	-0.0006	28.5610	29.7845	34.6650	35.6369	32.2365	35.6369	1131.38	1198.87	0.1142	0.0300	0.1142	0.0291	31.3840	35.0956
6.0	9.60%	4.58%	13.20%	1.23%	1.6149	1.6602	3.8143	-6.3134	2.7583	-4.6272	0.0693	-0.0005	28.6386	29.9961	34.8508	35.9227	32.2949	35.9227	1146.40	1212.15	0.1138	0.0300	0.1140	0.0291	31.5239	35.3005
6.5	9.68%	4.53%	13.30%	1.23%	1.6195	1.6556	3.8336	-6.5866	2.7554	-4.7211	0.0694	-0.0006	28.7203	30.2515	35.1223	35.8655	32.3825	35.8655	1161.86	1226.67	0.1147	0.0298	0.1149	0.0288	31.6604	35.4423
7.0	9.71%	4.55%	13.36%	1.24%	1.6151	1.6600	3.8419	-6.5756	2.7452	-4.8130	0.0687	-0.0005	28.6420	30.4705	35.4225	36.0656	32.5139	36.0656	1171.17	1234.98	0.1152	0.0299	0.1153	0.0289	31.8087	35.6190
7.5	9.77%	4.54%	13.48%	1.24%	1.6107	1.6644	3.8557	-6.6749	2.7343	-4.8749	0.0684	-0.0005	28.5638	30.6310	35.6369	36.2086	32.6744	36.2086	1179.97	1242.95	0.1161	0.0298	0.1162	0.0289	31.9485	35.7692
8.0	9.83%	4.58%	13.59%	1.25%	1.6153	1.6598	3.8419	-6.7411	2.7200	-4.9604	0.0684	-0.0005	28.6452	30.8353	35.7083	36.2800	32.7328	36.2800	1196.16	1258.26	0.1170	0.0301	0.1171	0.0292	32.0840	35.8800
8.5	9.91%	4.57%	13.70%	1.24%	1.6199	1.6552	3.9330	-6.7853	2.7842	-4.9445	0.0682	-0.0005	28.7271	30.9521	35.8084	36.3801	32.8495	36.3801	1212.29	1272.74	0.1180	0.0299	0.1181	0.0290	32.2175	36.0352
9.0	10.08%	4.50%	13.87%	1.24%	1.6156	1.6595	3.9385	-6.7411	2.8091	-4.9805	0.0687	-0.0005	28.6512	31.1637	36.1371	36.4230	32.9882	36.4230	1218.17	1277.23	0.1196	0.0296	0.1198	0.0287	32.3176	36.1682
9.5	10.00%	4.51%	13.85%	1.25%	1.6156	1.6595	4.0075	-6.7963	2.8654	-4.9838	0.0678	-0.0005	28.6517	31.2732	36.2800	36.4944	33.0247	36.4944	1227.25	1285.47	0.1191	0.0297	0.1192	0.0288	32.4195	36.2955
10.0	10.01%	4.52%	13.90%	1.25%	1.6113	1.6638	4.1206	-6.7853	2.9361	-4.9874	0.0672	-0.0005	28.5745	31.3608	36.3801	36.6088	33.0831	36.6088	1233.82	1291.33	0.1195	0.0296	0.1196	0.0288	32.5288	36.4055
10.5	9.99%	4.48%	13.85%	1.25%	1.6155	1.6596	4.2145	-6.8929	2.9862	-4.9960	0.0674	-0.0005	28.6498	31.4192	36.4944	36.7088	33.1342	36.7088	1247.91	1303.39	0.1190	0.0295	0.1192	0.0286	32.6269	36.4928
11.0	10.02%	4.49%	13.85%	1.24%	1.6199	1.6552	4.1758	-6.8515	2.9939	-5.0617	0.0676	-0.0006	28.7278	31.6527	36.6659	36.7231	33.2290	36.7231	1261.36	1315.86	0.1191	0.0295	0.1193	0.0287	32.7287	36.5913
11.5	9.89%	4.53%	13.69%	1.24%	1.6154	1.6597	4.2558	-6.9067	3.0248	-5.0714	0.0669	-0.0005	28.6482	31.7841	36.7803	36.9946	33.4626	36.9946	1275.76	1324.66	0.1178	0.0296	0.1179	0.0288	32.8669	36.7111
12.0	9.88%	4.54%	13.62%	1.27%	1.6107	1.6644	4.2310	-6.9950	3.0206	-5.1776	0.0682	-0.0005	28.5641	31.9738	36.8374	37.0089	33.6961	37.0089	1293.92	1338.91	0.1173	0.0299	0.1175	0.0290	33.0606	36.8461
12.5	9.81%	4.56%	13.53%	1.27%	1.6151	1.6600	4.2420	-7.0585	3.0808	-5.2085	0.0686	-0.0004	28.6422	32.1490	37.1376	36.9946	33.9734	36.9946	1322.26	1361.21	0.1165	0.0301	0.1167	0.0292	33.2556	36.9729
13.0	9.64%	4.56%	13.32%	1.26%	1.6194	1.6557	4.3193	-7.0502	3.0811	-5.2770	0.0677	-0.0004	28.7180	32.3825	37.2948	37.2376	34.2799	37.2376	1353.51	1384.26	0.1146	0.0299	0.1148	0.0291	33.4534	37.0903
13.5	9.46%	4.56%	13.09%	1.26%	1.6144	1.6607	4.3110	-7.2655	3.0078	-5.4429	0.0677	-0.0004	28.6306	32.6233	37.4234	37.2805	34.4843	37.2805	1374.66	1400.10	0.1126	0.0299	0.1128	0.0291	33.6538	37.1966
14.0	9.21%	4.61%	12.78%	1.30%	1.6092	1.6659	4.2310	-7.3372	2.9070	-5.6641	0.0680	-0.0003	28.5379	32.8787	37.6378	37.4091	34.7178	37.4091	1405.98	1422.42	0.1098	0.0304	0.1100	0.0296	33.9186	37.3271
14.5	9.06%	4.61%	12.65%	1.30%	1.6134	1.6617	4.2007	-7.5966	2.7427	-5.9653	0.0685	-0.0003	28.6125	33.3896	37.6378	37.4949	35.2505	37.4949	1475.18	1476.47	0.1083	0.0304	0.1085	0.0296	34.3871	37.4599
15.0	8.99%	4.63%	12.60%	1.30%	1.6133	1.6618	4.0627	-10.3424	2.1895	-6.9977	0.0680	-0.0002	28.6106	33.1342	37.6378	37.4949	34.8492	37.4949	1433.35	1443.88	0.1077	0.0304	0.1079	0.0296	34.1043	37.5026
15.5	8.88%	4.76%	11.32%	2.37%	1.6182	1.6569	3.9330	-26.6985	-1.4988	-9.1875	0.0698	0.0118	28.6970	33.1123	37.1233	37.4663	34.1632	37.4663	1377.58	1417.36	0.1007	0.0364	0.1010	0.0356	33.7875	37.2500
16.0	12.80%	4.70%	16.41%	2.01%	1.6020	1.6731	5.8150	-4.2989	4.2199	-0.6379	0.0531	0.0062	28.4107	33.3896	35.9227	36.6373	33.9369	36.6373	1414.82	1412.73	0.1475	0.0325	0.1461	0.0335	33.7065	36.2598
16.5	14.09%	3.75%	17.33%	0.97%	1.6235	1.6517	5.1472	-7.1606	4.0409	-4.9065	0.0543	-0.0002	28.7905	31.9154	36.7231	36.9518	33.4918	36.9518	1308.73	1337.68	0.1566	0.0242	0.1571	0.0236	32.9216	36.6864
17.0	12.58%	4.54%	16.15%	1.37%	1.6189	1.6562	4.7112	-7.1965	3.6944	-4.9676	0.0694	-0.0001	28.7097	32.4409	37.1376	37.3520	33.7180	37.3520	1317.35	1365.67	0.1433	0.0305	0.1436	0.0295	33.2806	37.0529
17.5	12.22%	4.68%	15.93%	1.41%	1.6144	1.6607	4.7829	-7.2048	3.6725	-5.0383	0.0718	0.0001	28.6294	32.5868	37.2948	37.2948	33.7837	37.2948	1325.89	1370.81	0.1403	0.0314	0.1407	0.0304	33.3827	37.1649
18.0	12.25%	4.71%	15.97%	1.44%	1.6183	1.6569	4.8906	-7.2103	3.6270	-5.1283	0.0728	0.0001	28.6983	32.6963	37.3520	37.3520	33.7180	37.3520	1334.45	1377.62	0.1406	0.0318	0.1411	0.0307	33.4380	37.2991
18.5	12.36%	4.74%	16.15%	1.44%	1.6222	1.6529	4.8933	-7.2820	3.5927	-5.1796	0.0728	0.0003	28.7686	32.7328	37.6950	37.4663	33.8129	37.4663	1341.81	1385.97	0.1420	0.0319	0.1426	0.0309	33.5000	37.3967
19.0	12.43%	4.77%	16.32%	1.45%	1.6185	1.6566	4.8906	-7.3758	3.6000	-5.2091	0.0724	0.0004	28.7027	32.8423	37.8522	37.4234	33.8640	37.4234	1342.75	1386.79	0.1433	0.0321	0.1438	0.0311	33.5546	37.5019
19.5	12.56%	4.75%	16.51%	1.48%	1.6149	1.6602	4.9485	-7.3041	3.6424	-5.2034	0.0731	0.0004	28.6382	32.8787	37.8093	37.6378	33.9296	37.6378	1342.94	1386.69	0.1448	0.0321	0.1454	0.0311	33.5952	37.5788
20.0	12.78%	4.73%	16.83%	1.46%	1.6189	1.6562	5.0147	-7.2793	3.7072	-5.1805	0.0718	0.0005	28.7097	32.8058	37.9237	37.6378	33.9734	37.6378	1348.65	1390.67	0.1475	0.0319	0.1480	0.0310	33.6090	37.6308
20.5	12.96%	4.75%	17.09%	1.49%	1.6192	1.6560	5.0699	-7.2931	3.7914	-5.1188	0.0723	0.0006	28.7142	32.8787	37.9237	37.7093	34.0829	37.7093	1355.34	1397.38	0.1497	0.0322	0.1503	0.0312	33.6808	37.7069
21.0	13.36%	4.71%	17.53%	1.50%	1.6231	1.6520	5.0920	-7.2931	3.9178	-5.0591	0.0726	0.0006	28.7838	32.9955	37.9808	37.6950	34.2215	37.6950	1368.00	1408.56	0.1538	0.0321	0.1544	0.0310	33.7621	37.7745
21.5	13.98%	4.68%	18.18%	1.49%	1.6199	1.6553	5.0699	-7.2793	4.0018	-5.0504	0.0725	0.0007	28.7265	33.0612	38.2095	37.8522	34.3383	37.8522	1380.61	1417.46	0.1601	0.0319	0.1608	0.0308	33.8787	37.8444
22.0	14.86%	4.72%	19.08%	1.52%	1.6172	1.6579	5.0147	-7.3041	3.9771	-5.0901	0.0732	0.0008	28.6798	33.1999	38.2095	37.8093	34.5718	37.8093	1399.34	1432.58	0.1689	0.0323	0.1697	0.0312	34.0509	37.9441
22.5	15.84%	4.75%	20.01%	1.58%	1.6213	1.6538	5.0837	-7.3207	4.0746	-5.0597	0.0756	0.0009	28.7529	33.4261	38.4239	37.9237	34.7762	37.9237	1428.00	1454.02	0.1783	0.0328	0.1793	0.0316	34.2210	38.0215
23.0	16.80%	4.82%	21.14%	1.56%	1.6250	1.6501	5.0368	-7.3372	4.0942	-5.0563	0.0761	0.0009	28.8186	33.5501	38.5525	37.9237	34.9221	37.9237	1449.13	1470.33	0.1887	0.0331	0.1897	0.0319	34.3434	38.0759
23.5	18.03%	4.70%	22.31%	1.57%	1.6225	1.6526	5.0699	-7.3620	4.0892	-5.1197	0.0767	0.0009	28.7733	33.6085	38.6383	38.0666	35.0681	38.0666	1459.52	1477.70	0.2005	0.0327	0.2017	0.0313	34.4391	38.1442
24.0	19.38%	4.75%	23.61%	1.61%	1.6204	1.6547	5.0368	-7.5249	4.0939	-5.1540	0.0774	0.0010	28.7359	33.7545	38.6097	38.0380	35.1849	38.0380	1474.47	1488.50	0.2138	0.0331	0.2150	0.0318	34.5576	38.1915
24.5	20.77%	4.78%	25.05%	1.62%	1.6239	1.6512	5.0699	-7.4310	4.1237	-5.1728	0.0798	0.0010	28.7992	33.8275	38.8527	38.2095	35.3600	38.2095	1490.91	1502.69	0.2277	0.0335	0.2291	0.0320	34.6691	38.2965
25.0	22.07%	4.85%	26.52%	1.62%	1.6270	1.6481	5.1582	-7.5249	4.1609	-5.1752	0.0798	0.0010	28.8539	33.9588	38.8955	38.2667	35.4184	38.2667	1507.53	1515.66	0.2416	0.0338	0.2430	0.0324	34.7680	38.3711
25.5	23.69%	4.69%	28.01%	1.60%	1.6249	1.6502	5.1527	-7.6104	4.1483	-5.2304	0.0784	0.0009	28.8159	34.0829	38.9956	38.2810	35.6154	38.2810	1521.14	1526.94	0.2570	0.0330	0.2585	0.0315	34.9035	38.5078
26.0	25.50%	4.67%	29.74%	1.62%	1.6230	1.6521	5.3017	-7.6021	4.2239	-5.2947	0.0803	0.0009	28.7828	34.1924	39.0671	38.3810	35.7395	38.3810	1534.31	1539.19	0.2745	0.0331	0.2762	0.0315	35.0361	38.5898
26.5	27.38%	4.63%	31.55%	1.61%	1.6260	1.6491	5.2217	-7.6518	4.2301	-5.2856	0.0814	0.0010	28.8356	34.4843	39.2100	38.4239	35.9438	38.4239	1563.72	1564.07	0.2927	0.0330	0.2946	0.0312	35.2312	38.6452
27.0	28.97%	4.77%	33.30%	1.64%	1.6286	1.6465	5.2686	-7.6684	4.2394	-5.3283	0.0828	0.0009	28.8813	34.7762	39.2386	38.4382	36.1774	38.4382	1600.53	1595.52	0.3095	0.0338	0.3114	0.0321	35.4803	38.6942
27.5	30.71%	4.73%	35.00%	1.63%	1.6266	1.6485	5.2631	-7.7898	4.2644	-5.3498	0.0814	0.0009	28.8466	35.2870	39.2814	38.4954	36.6006	38.4954	1649.93	1639.83	0.3267	0.0335	0.3285	0.0318	35.8653	38.7268
28.0	32.32%	4.63%	36.54%	1.61%	1.6268	1.6483	5.3183	-7.7622	4.2767	-5.3987	0.0820	0.0009	28.8501	36.3452	39.2814	38.4954	37.4034	38.4954	1766.23	1752.99	0.3423	0.0330	0.3443	0.0312	36.7784	38.7804
28.5	34.08%	4.74%	38.28%	1.65%	1.6248	1.6503	5.3569	-7.8119	4.2948	-5.4336	0.0825	0.0009	28.8145	37.7537	39.3529	38.6097	38.3667	38.6097	1920.87	1901.25	0.3598	0.0337	0.3618	0.0319	37.9521	38.8545
29.0	36.05%	4.63%	40.10%	1.66%	1.6271	1.6480	5.3321	-7.8312	4.3225	-5.4689	0.0852	0.0010	28.8556	38.4981	39.4958	38.6383	38.8995	38.6383	2013.86	1988.43	0.3784	0.0334	0.3807	0.0314	38.5937	38.9264
29.5	37.75%	4.68%	41.85%	1.63%	1.6294	1.6457	5.4232	-7.9222	4.3543	-5.4999	0.0830	0.0010	28.8952	38.0164	39.5816	38.7812	39.1841	38.7812	2058.73	1960.98	0.3959	0.0334	0.3980	0.0315	38.3639	38.9894
30.0	39.35%	4.79%	43.54%	1.64%	1.6280	1.6471	5.4287	-7.9416	4.3785	-5.5416	0.0841	0.0010	28.8713	33.6815	39.7817	38.8527	34.9586	38.8527	1441.96	1462.38	0.4124	0.0339	0.4145	0.0322	34.4212	39.0942
30.5	41.07%	4.77%	45.19%	1.64%	1.6267	1.6484	5.5115	-8.0216	4.4200	-5.5871	0.0832	0.0009	28.8488	33.5793	39.8103	38.8384	34.7762	38.8384	1411.34	1445.88	0.4293	0.0338	0.4313	0.0321	34.2879	39.0956
31.0	42.83%	4.64%	46.87%	1.61%	1.6288	1.6463	5.5115	-8.0933	4.4508	-5.6403	0.0837	0.0008	28.8848	33.6450	39.5673	38.7812	34.6667	38.7812	1409.45	1451.62	0.4463	0.0331	0.4485	0.0312	34.3019	38.9746
31.5	44.58%	4.61%	48.52%	1.59%	1.6307	1.6445	5.5667	-8.1099	4.4650	-5.6946	0.0824	0.0008	28.9181	33.6669	39.4672	38.7812	34.5427	38.7812	1408.85	1453.40	0.4634	0.0329	0.4655	0.0310	34.3006	38.9620
32.0	46.39%	4.64%	50.25%	1.60%	1.6291	1.6460	5.5943	-8.2175	4.4863	-5.7469	0.0824	0.0008	28.8902	33.7180	39.4244	38.7812	34.5573	38.7812	1410.86	1456.58	0.4811	0.0330	0.4832	0.0312	34.3407	38.9637
32.5	48.30%	4.60%	52.04%	1.59%	1.6276	1.6475	5.6329	-8.2644	4.5142	-5.7960	0.0809	0.0008	28.8641	33.7253	39.5816	38.7812	34.6594	38.7812	1410.93	1456.60	0.4997	0.0327	0.5017	0.0309	34.3593	39.0049
33.0	50.09%	4.60%	53.75%	1.60%	1.6294	1.6457	5.6632	-8.3555	4.5408	-5.8483	0.0817	0.0008	28.8964	33.7910	39.5673	38.7812	34.6302	38.7812	1418.20	1462.74	0.5171	0.0328	0.5192	0.0310	34.4105	39.0771
33.5	51.56%	4.64%	55.21%	1.60%	1.6295	1.6456	5.7046	-8.4107	4.5667	-5.8897	0.0822	0.0009	28.8984	33.8640	39.6387	38.7812	34.6667	38.7812	1424.66	1470.27	0.5319	0.0330	0.5339	0.0312	34.4823	39.1222
34.0	53.28%	4.61%	56.82%	1.61%	1.6312	1.6439	5.7543	-8.4962	4.6053	-5.9319	0.0829	0.0008	28.9283	33.9588	39.8674	39.1242	34.8346	39.1242	1433.84	1478.89	0.5484	0.0330	0.5505	0.0311	34.5674	39.2665
34.5	54.76%	4.71%	58.38%	1.59%	1.6297	1.6454	5.7598	-8.5211	4.6388	-5.9764	0.0811	0.0008	28.9018	34.0829	39.9246	39.0671	34.9586	39.0671	1445.29	1490.21	0.5639	0.0332	0.5657	0.0315	34.7017	39.4205
35.0	56.48%	4.57%	59.95%	1.56%	1.6283	1.6468	5.8426	-8.5845	4.6785	-6.0239	0.0797	0.0008	28.8761	34.2215	39.9818	39.1242	35.0973	39.1242	1459.14	1501.58	0.5802	0.0323	0.5821	0.0306	34.8197	39.4784
35.5	58.05%	4.51%	61.44%	1.52%	1.6299	1.6452	5.9116	-8.6177	4.7176	-6.0655	0.0777	0.0008	28.9051	34.3383	40.0675	39.2100	35.3235	39.2100	1481.30	1520.14	0.5956	0.0318	0.5974	0.0302	34.9737	39.5346
36.0	59.23%	4.67%	62.71%	1.58%	1.6315	1.6436	5.9751	-8.6839	4.7606	-6.1109	0.0806	0.0008	28.9328	34.6010	40.3820	39.1814	35.5060	39.1814	1508.49	1543.03	0.6079	0.0329	0.6097	0.0312	35.1643	39.5983
36.5	60.58%	4.55%	63.97%	1.55%	1.6300	1.6451	5.9944	-8.8246	4.7915	-6.1667	0.0813	0.0008	28.9065	34.7762	40.4248	39.2814	35.8344	39.2814	1538.40	1563.55	0.6207	0.0323	0.6227	0.0305	35.3565	39.6535
37.0	61.64%	4.63%	65.04%	1.57%	1.6285	1.6466	6.0413	-8.7943	4.8275	-6.2230	0.0802	0.0008	28.8806	35.0097	40.4391	39.3529	35.9730	39.3529	1560.10	1580.67	0.6316	0.0327	0.6334	0.0310	35.5241	39.7394
37.5	63.09%	4.42%	66.31%	1.48%	1.6301	1.6450	6.0772	-8.9212	4.8582	-6.2892	0.0762	0.0007	28.9081	35.0681	40.6392	39.4244	36.1628	39.4244	1582.11	1598.80	0.6453	0.0311	0.6470	0.0295	35.6766	39.8360
38.0	64.32%	4.41%	67.43%	1.50%	1.6316	1.6435	6.0855	-8.9709	4.8854	-6.3528	0.0779	0.0007	28.9351	35.2724	40.7821	39.5244	36.1774	39.5244	1599.48	1613.66	0.6569	0.0312	0.6588	0.0295	35.8008	39.9302
38.5	65.41%	4.56%	68.52%	1.53%	1.6302	1.6449	6.1462	-9.0868	4.9283	-6.4119	0.0778	0.0007	28.9094	35.3965	40.9251	39.5673	36.3817	39.5673	1615.57	1627.06	0.6680	0.0320	0.6696	0.0304	35.9332	40.0030
39.0	66.44%	4.56%	69.51%	1.52%	1.6302	1.6449	6.2290	-9.1420	4.9625	-6.4647	0.0778	0.0007	28.9100	35.5425	40.8536	39.6387	36.5277	39.6387	1632.54	1642.99	0.6781	0.0320	0.6797	0.0304	36.0712	40.0613
39.5	67.69%	4.50%	70.64%	1.51%	1.6288	1.6463	6.2510	-9.2358	5.0010	-6.5279	0.0780	0.0007	28.8846	35.7687	40.8393	39.6959	36.6444	39.6959	1653.45	1659.66	0.6899	0.0317	0.6917	0.0300	36.2317	40.1533

SR100 Serial No. 60661

Effects of long-term heat expsoure on self-conatined self-rescuers

August 31, 2006

Time sec	Exp O2 percent	Exp CO2 percent	Ins O2 percent	Ins CO2 percent	Exp Vol liters	Ins Vol liters	Exp Pk Prs cm H2O	Ins Pk Prs cm H2O	Exp Av Prs cm H2O	Ins Av Prs cm H2O	xp CO2 Pk liters	ns CO2Min liters	VE Stpd liers/min	sWB EndT C	sDB EndT C	pDB EndT C	pWB EndT C	pDB EndT C	ExpH2OVapr	InsH2OVapr	uthO2TAv	th CO2TAv	uthO2VAv	th CO2VAv	sWBAvgTp C	sDBAvgTp C
40.0	68.79%	4.53%	71.70%	1.52%	1.6303	1.6449	6.3117	-9.3628	5.0395	-6.5904	0.0771	0.0008	28.9110	36.0168	41.0680	39.8531	36.8561	39.8531	1681.88	1686.77	0.7008	0.0318	0.7024	0.0302	36.4496	40.2376
40.5	69.87%	4.49%	72.70%	1.51%	1.6317	1.6434	6.3725	-9.4124	5.0786	-6.6513	0.0790	0.0007	28.9368	36.4693	41.2967	39.8674	37.1699	39.8674	1729.45	1728.55	0.7111	0.0317	0.7129	0.0300	36.7815	40.3285
41.0	70.79%	4.55%	73.64%	1.50%	1.6302	1.6449	6.4221	-9.5421	5.1147	-6.7101	0.0765	0.0006	28.9102	37.5859	41.2824	40.0675	38.0237	40.0675	1844.73	1842.41	0.7206	0.0318	0.7221	0.0303	37.6847	40.4264
41.5	71.85%	4.45%	74.59%	1.48%	1.6284	1.6467	6.5380	-9.5559	5.1618	-6.7760	0.0766	0.0006	28.8788	39.4176	41.4682	39.9246	39.4176	39.9246	2069.89	2055.62	0.7305	0.0313	0.7322	0.0297	39.2911	40.5398
42.0	72.83%	4.38%	75.48%	1.47%	1.6298	1.6453	6.5187	-9.7077	5.1976	-6.8386	0.0771	0.0005	28.9027	40.4685	41.4968	40.0675	40.2131	40.0675	2211.79	2185.75	0.7398	0.0309	0.7416	0.0292	40.2135	40.6361
42.5	73.60%	4.47%	76.30%	1.46%	1.6313	1.6438	6.6043	-9.7546	5.2371	-6.9127	0.0765	0.0005	28.9297	40.8772	41.6969	40.2104	40.5561	40.2104	2265.42	2236.67	0.7479	0.0312	0.7495	0.0296	40.5666	40.7585
43.0	74.53%	4.39%	77.13%	1.45%	1.6297	1.6454	6.6843	-9.8457	5.2830	-6.9893	0.0756	0.0005	28.9019	41.0888	41.8541	40.2104	40.6874	40.2104	2289.54	2258.91	0.7567	0.0307	0.7583	0.0292	40.7454	40.8505
43.5	75.43%	4.37%	77.92%	1.46%	1.6282	1.6469	6.7367	-9.9423	5.3217	-7.0624	0.0768	0.0004	28.8744	41.3151	42.0399	40.3248	40.7896	40.3248	2308.74	2274.50	0.7650	0.0308	0.7668	0.0291	40.8807	40.9611
44.0	76.31%	4.36%	78.74%	1.44%	1.6298	1.6453	6.8085	-10.0527	5.3741	-7.1407	0.0755	0.0003	28.9023	41.4537	42.2114	40.4963	40.9794	40.4963	2327.04	2294.62	0.7737	0.0306	0.7753	0.0290	41.0159	41.0664
44.5	77.10%	4.40%	79.51%	1.43%	1.6313	1.6438	6.8802	-10.1410	5.4197	-7.2183	0.0750	0.0003	28.9301	41.5778	42.2114	40.5535	40.9648	40.5535	2344.11	2310.49	0.7815	0.0307	0.7831	0.0291	41.1219	41.1749
45.0	77.95%	4.36%	80.30%	1.42%	1.6298	1.6453	6.9602	-10.2596	5.4791	-7.2950	0.0748	0.0003	28.9026	41.7091	42.3543	40.6392	41.0523	40.6392	2355.86	2321.95	0.7897	0.0305	0.7913	0.0289	41.2281	41.2878
45.5	78.64%	4.39%	80.97%	1.43%	1.6282	1.6469	7.0348	-10.4280	5.5270	-7.3761	0.0751	0.0003	28.8754	41.8697	42.6116	40.7250	41.1399	40.7250	2364.23	2330.50	0.7965	0.0307	0.7980	0.0291	41.3110	41.3718
46.0	79.27%	4.39%	81.59%	1.39%	1.6298	1.6453	7.0844	-10.5080	5.5694	-7.4615	0.0738	0.0002	28.9030	41.9281	42.7116	40.7107	41.1983	40.7107	2379.57	2346.07	0.8029	0.0304	0.8043	0.0289	41.4141	41.4812
46.5	79.88%	4.36%	82.10%	1.43%	1.6298	1.6453	7.1534	-10.6874	5.6192	-7.5327	0.0762	0.0002	28.9032	42.1105	42.7831	40.7821	41.1983	40.7821	2387.60	2352.28	0.8083	0.0306	0.8099	0.0290	41.4657	41.5620
47.0	80.52%	4.38%	82.71%	1.42%	1.6314	1.6437	7.2445	-10.6598	5.6758	-7.6115	0.0753	0.0003	28.9307	42.1616	42.8974	40.8393	41.2859	40.8393	2401.76	2367.33	0.8146	0.0306	0.8162	0.0290	41.5645	41.6707
47.5	81.11%	4.36%	83.27%	1.41%	1.6298	1.6453	7.3190	-10.8667	5.7284	-7.7032	0.0750	0.0002	28.9035	42.3295	42.9975	40.9965	41.3078	40.9965	2406.09	2372.44	0.8204	0.0304	0.8219	0.0288	41.6243	41.7593
48.0	81.70%	4.34%	83.79%	1.40%	1.6283	1.6468	7.3990	-10.9688	5.7813	-7.7839	0.0739	0.0002	28.8761	42.4535	43.0689	41.1252	41.3734	41.1252	2416.92	2382.38	0.8260	0.0302	0.8275	0.0287	41.7152	41.8398
48.5	82.16%	4.37%	84.25%	1.39%	1.6298	1.6453	7.4846	-11.0323	5.8360	-7.8685	0.0734	0.0002	28.9035	42.6579	43.3548	41.0680	41.4172	41.0680	2431.36	2396.68	0.8307	0.0303	0.8320	0.0288	41.8079	41.9457
			77.92%	3.09%			6.7367	-3.0102																		
			11.32%	0.87%			3.5246	-26.6985																		
			33.64%	1.48%																						

Bag went flat at 15 min and had to take external breaths to reinflate - ignored the inspired value at 15 min use end of life max at 43.5 min

SR100 Serial No. 60636

Effects of long-term heat exposure on self-contained self-rescuers

August 31, 2006

Time sec	Exp O2 percent	Exp CO2 percent	Ins O2 percent	Ins CO2 percent	Exp Vol liters	Ins Vol liters	Exp Pk Prs cm H2O	Ins Pk Prs cm H2O	Exp Av Prs cm H2O	Ins Av Prs cm H2O	Exp CO2 Pk liters	Ins CO2Min liters	VE Stpd liers/min	sWB EndT C	sDB EndT C	pDB EndT C	pWB EndT C	pDB EndT C	ExpH2OVapr	InsH2OVapr	uthO2TAv	th CO2TAv	uthO2VAv	th CO2VAv	sWBAvgTp C	sDBAvgTp C
0.0	0.00%	0.00%	0.00%	0.00%	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.00	0.00	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.5	21.13%	0.09%	21.33%	0.09%	1.9747	1.6589	0.9305	-0.6590	0.1411	-0.1146	0.0011	0.0006	25.7632	21.5740	21.5920	27.1186	27.0989	27.1186	864.06	859.49	0.1932	0.0008	0.2123	0.0009	22.1671	22.1794
1.0	21.06%	0.15%	21.26%	0.23%	1.6475	1.6558	0.5994	-0.7473	0.1902	-0.3050	0.0028	0.0014	29.2176	26.5442	26.7184	26.8899	26.6902	26.8899	957.88	949.48	0.2114	0.0020	0.2116	0.0019	26.5201	26.5997
1.5	18.86%	2.45%	19.35%	1.36%	1.6372	1.6661	2.9312	-34.2405	-3.4716	-25.2301	0.0294	0.0029	29.0344	26.7121	26.4182	29.1338	28.7555	29.1338	1022.35	1030.47	0.1915	0.0188	0.1910	0.0191	27.7417	27.6774
2.0	17.64%	3.16%	18.81%	0.78%	1.6362	1.6671	5.0285	-3.2778	2.8820	-0.8013	0.0386	0.0009	29.0170	28.9379	28.6336	31.0633	30.7989	31.0633	1157.36	1166.55	0.1825	0.0196	0.1822	0.0197	29.8478	29.5711
2.5	16.43%	3.45%	18.34%	0.90%	1.6323	1.6711	4.0213	-2.6459	2.8597	-1.2335	0.0445	0.0003	28.9465	28.4417	28.9480	31.2920	31.0105	31.2920	1140.63	1159.61	0.1743	0.0219	0.1739	0.0217	29.9270	30.1585
3.0	15.28%	3.42%	17.48%	0.91%	1.6350	1.6684	2.3517	-3.9401	1.8002	-2.7994	0.0456	-0.0001	28.9951	27.3689	28.9909	31.3491	30.8718	31.3491	1082.37	1111.14	0.1644	0.0218	0.1638	0.0217	29.3849	30.1886
3.5	12.93%	4.40%	15.76%	1.19%	1.6371	1.6663	2.2772	-4.0367	1.6759	-2.9431	0.0590	0.0000	29.0316	27.3324	29.1195	31.5206	31.0689	31.5206	1100.82	1118.63	0.1441	0.0282	0.1434	0.0280	29.4872	30.3536
4.0	11.47%	4.52%	14.52%	1.24%	1.6318	1.6716	2.2827	-4.1195	1.6489	-3.0209	0.0609	-0.0001	28.9380	27.4783	29.3482	31.7779	31.3097	31.7779	1119.14	1123.32	0.1305	0.0290	0.1299	0.0288	29.6336	30.6143
4.5	10.49%	4.58%	13.64%	1.26%	1.6261	1.6772	2.2993	-4.1582	1.6521	-3.0674	0.0605	0.0000	28.8381	27.7119	29.9771	32.1495	31.5943	32.1495	1131.86	1130.82	0.1211	0.0294	0.1206	0.0292	29.8384	30.9986
5.0	9.47%	4.53%	12.79%	1.25%	1.6287	1.6747	2.3241	-4.2575	1.6638	-3.1688	0.0603	0.0000	28.8828	28.0622	30.4201	32.2781	31.6746	32.2781	1140.61	1143.57	0.1118	0.0292	0.1113	0.0289	30.0267	31.3320
5.5	8.97%	4.50%	12.35%	1.22%	1.6327	1.6707	2.2772	-4.4452	1.5958	-3.3238	0.0587	-0.0001	28.9537	28.4708	30.6059	32.4354	31.5068	32.4354	1141.06	1160.65	0.1071	0.0287	0.1066	0.0286	30.2138	31.5020
6.0	10.53%	4.67%	13.62%	2.15%	1.6164	1.6870	3.0968	-2.3396	2.3044	-1.1150	0.0528	0.0047	28.6650	30.2150	31.1348	32.6355	32.0395	32.6355	1224.90	1237.53	0.1214	0.0334	0.1208	0.0341	31.1852	31.7678
6.5	12.72%	3.60%	15.53%	0.99%	1.6291	1.6743	2.9726	-3.9815	2.2528	-2.6982	0.0476	0.0000	28.8905	28.9963	31.1205	32.8927	31.7403	32.8927	1158.05	1183.83	0.1413	0.0231	0.1413	0.0229	30.5749	31.9463
7.0	11.11%	4.29%	14.62%	1.22%	1.6312	1.6722	2.6829	-4.0367	2.1353	-2.7553	0.0569	-0.0001	28.9275	29.3393	31.6350	33.0642	31.7841	33.0642	1170.93	1198.24	0.1291	0.0277	0.1286	0.0275	30.7672	32.2370
7.5	10.67%	4.51%	14.35%	1.27%	1.6307	1.6727	2.5173	-4.1195	2.0326	-2.8435	0.0591	0.0000	28.9184	29.4852	31.8494	33.1357	31.9300	33.1357	1180.64	1210.77	0.1256	0.0290	0.1251	0.0289	30.9425	32.4513
8.0	10.22%	4.57%	14.05%	1.30%	1.6345	1.6688	2.5421	-4.0809	2.0514	-2.8424	0.0606	0.0000	28.9864	29.9012	32.0923	33.3501	32.0030	33.3501	1197.42	1228.47	0.1218	0.0295	0.1213	0.0294	31.1308	32.6423
8.5	9.97%	4.44%	13.84%	1.27%	1.6297	1.6737	2.5449	-4.1333	2.1093	-2.8273	0.0592	0.0000	28.9007	30.0326	32.3496	33.4215	32.1490	33.4215	1207.14	1238.64	0.1195	0.0287	0.1191	0.0285	31.3086	32.8397
9.0	9.77%	4.46%	13.73%	1.27%	1.6251	1.6783	2.5973	-4.1140	2.1440	-2.8310	0.0584	0.0000	28.8193	30.2807	32.7212	33.6359	32.2365	33.6359	1215.38	1246.89	0.1180	0.0288	0.1175	0.0287	31.4674	33.0512
9.5	9.83%	4.44%	13.78%	1.26%	1.6296	1.6738	2.6415	-4.2851	2.1208	-2.9251	0.0585	0.0000	28.8985	30.5434	33.4215	33.9932	32.3314	33.9932	1221.95	1254.35	0.1185	0.0286	0.1181	0.0285	31.6179	33.6297
10.0	9.85%	4.45%	13.81%	1.28%	1.6339	1.6694	2.6084	-4.1582	2.1374	-2.8591	0.0591	0.0000	28.9762	30.6894	33.9789	34.4935	32.4701	34.4935	1231.98	1264.44	0.1187	0.0288	0.1183	0.0286	31.7514	33.9839
10.5	9.88%	4.43%	13.87%	1.26%	1.6295	1.6738	2.6553	-4.1747	2.1691	-2.8836	0.0580	0.0000	28.8983	30.8718	33.9932	34.5649	32.4774	34.5649	1236.10	1269.17	0.1192	0.0285	0.1187	0.0284	31.8626	34.1501
11.0	9.86%	4.42%	13.81%	1.27%	1.6251	1.6783	2.7960	-4.1913	2.2427	-2.8532	0.0579	0.0000	28.8194	31.0689	34.2076	34.7221	32.5868	34.7221	1245.24	1278.28	0.1188	0.0285	0.1183	0.0284	32.0135	34.2977
11.5	9.87%	4.40%	13.91%	1.20%	1.6295	1.6739	3.1244	-4.2437	2.2707	-2.9095	0.0589	0.0000	28.8971	31.1637	34.3505	34.8508	32.6963	34.8508	1257.72	1290.05	0.1192	0.0283	0.1189	0.0280	32.1228	34.4500
12.0	9.80%	4.41%	13.68%	1.25%	1.6338	1.6695	2.8402	-4.3348	2.1062	-3.0546	0.0580	0.0000	28.9740	31.4776	34.4935	34.9508	32.8787	34.9508	1278.06	1311.36	0.1178	0.0284	0.1174	0.0283	32.3229	34.6028
12.5	9.66%	4.42%	13.46%	1.26%	1.6292	1.6741	2.7795	-4.3679	2.0937	-3.1040	0.0583	0.0001	28.8926	31.6016	34.8508	35.0652	32.9882	35.0652	1287.76	1319.87	0.1160	0.0285	0.1156	0.0284	32.4734	34.7902
13.0	9.55%	4.43%	13.31%	1.26%	1.6288	1.6745	2.8347	-4.3955	2.0750	-3.1543	0.0586	0.0001	28.8855	31.7476	34.8508	34.9937	33.1342	34.9937	1300.11	1331.30	0.1146	0.0286	0.1143	0.0284	32.6063	34.9075
13.5	9.35%	4.46%	13.06%	1.26%	1.6238	1.6796	2.7739	-4.4341	2.0363	-3.2210	0.0589	0.0001	28.7959	31.9154	34.8937	35.2938	33.1707	35.2938	1306.16	1337.18	0.1124	0.0288	0.1121	0.0286	32.7119	34.9651
14.0	9.10%	4.50%	12.79%	1.27%	1.6278	1.6755	2.7657	-4.4369	2.0094	-3.2934	0.0589	0.0001	28.8682	32.0030	34.9222	35.2081	33.1707	35.2081	1321.19	1351.17	0.1098	0.0289	0.1095	0.0288	32.8209	35.0139
14.5	8.82%	4.55%	12.47%	1.29%	1.6322	1.6711	2.7629	-4.5335	1.9903	-3.3753	0.0595	0.0002	28.9459	32.2073	34.9508	35.1795	33.3458	35.1795	1337.86	1366.76	0.1068	0.0293	0.1065	0.0292	32.9229	34.9614
15.0	8.45%	4.57%	12.09%	1.30%	1.6267	1.6766	2.7105	-4.6438	1.9921	-3.4254	0.0595	0.0003	28.8489	32.3314	35.0652	35.1366	33.3531	35.1366	1346.47	1374.79	0.1030	0.0294	0.1027	0.0293	33.0339	34.9253
15.5	8.06%	4.46%	11.66%	1.27%	1.6206	1.6828	2.6636	-4.7984	1.9412	-3.5302	0.0580	0.0003	28.7390	32.5285	35.0652	35.1223	33.5210	35.1223	1352.78	1378.41	0.0989	0.0287	0.0986	0.0286	33.1298	34.9999
16.0	7.82%	4.50%	11.44%	1.26%	1.6251	1.6783	2.6001	-4.9474	1.8669	-3.6520	0.0591	0.0004	28.8193	32.6963	35.2796	35.2081	33.5720	35.2081	1367.30	1393.75	0.0965	0.0290	0.0963	0.0288	33.2488	35.0721
16.5	7.71%	4.50%	11.35%	1.27%	1.6302	1.6732	2.6084	-4.9860	1.8424	-3.7245	0.0582	0.0004	28.9097	32.8204	35.5225	35.4082	33.6669	35.4082	1384.43	1409.80	0.0955	0.0289	0.0953	0.0288	33.3912	35.2752
17.0	7.65%	4.50%	11.30%	1.29%	1.6246	1.6788	2.6001	-5.0992	1.7986	-3.8431	0.0590	0.0005	28.8101	32.9882	35.6369	35.4225	33.7910	35.4225	1391.19	1414.44	0.0950	0.0291	0.0948	0.0289	33.5023	35.4147
17.5	7.70%	4.52%	11.48%	1.30%	1.6195	1.6839	2.5090	-5.2510	1.6751	-3.9973	0.0589	0.0006	28.7196	33.0247	35.6940	35.6940	33.7545	35.6940	1392.32	1416.46	0.0961	0.0292	0.0959	0.0291	33.5797	35.5200
18.0	7.87%	4.53%	11.73%	1.31%	1.6253	1.6781	2.3793	-5.3337	1.5242	-4.2200	0.0582	0.0007	28.8224	33.1707	35.7798	35.7083	33.8640	35.7083	1403.25	1427.57	0.0982	0.0292	0.0980	0.0292	33.6498	35.6081
18.5	7.99%	4.56%	11.91%	1.34%	1.6256	1.6777	2.3931	-5.7339	1.3035	-4.6005	0.0593	0.0008	28.8290	33.2436	35.9942	35.5654	33.9004	35.5654	1408.15	1430.56	0.0998	0.0296	0.0995	0.0295	33.6871	35.6850
19.0	8.20%	4.57%	12.19%	1.36%	1.6312	1.6721	2.3103	-8.4079	0.8035	-5.4992	0.0596	0.0009	28.9280	33.2874	36.0371	35.8084	33.9880	35.8084	1416.95	1441.28	0.1022	0.0298	0.1020	0.0297	33.7523	35.7611
19.5	10.71%	4.62%	12.79%	3.18%	1.6113	1.6921	3.3728	-2.8501	2.2604	-0.6028	0.0497	0.0175	28.5740	33.4626	34.6364	35.4225	33.7545	35.4225	1416.00	1429.12	0.1186	0.0382	0.1175	0.0390	33.6625	34.9416
20.0	13.48%	4.01%	17.39%	1.09%	1.6299	1.6734	4.6505	-4.1361	3.4036	-2.4917	0.0499	0.0009	28.9048	32.4117	35.2367	35.5797	33.4918	35.5797	1357.04	1376.01	0.1544	0.0255	0.1544	0.0255	33.0818	35.2690
20.5	12.74%	4.27%	16.65%	1.30%	1.6329	1.6705	3.5935	-4.5197	2.7980	-3.0284	0.0571	0.0010	28.9579	32.8423	35.7083	35.7798	33.7545	35.7798	1382.30	1412.26	0.1470	0.0281	0.1469	0.0279	33.4495	35.6011
21.0	12.50%	4.52%	16.63%	1.41%	1.6365	1.6669	3.6129	-4.6107	2.7971	-3.0478	0.0605	0.0012	29.0213	33.1123	35.9227	35.7512	33.8129	35.7512	1401.57	1428.47	0.1457	0.0299	0.1456	0.0297	33.5905	35.7319
21.5	12.57%	4.58%	16.84%	1.42%	1.6327	1.6706	3.6901	-4.6025	2.8156	-3.0595	0.0618	0.0014	28.9550	33.1707	35.9942	35.8513	33.9369	35.8513	1406.03	1432.48	0.1471	0.0303	0.1470	0.0300	33.6776	35.8567
22.0	12.78%	4.59%	17.12%	1.44%	1.6293	1.6741	3.5687	-4.6438	2.8211	-3.0786	0.0611	0.0014	28.8939	33.2290	36.1514	35.9227	33.9296	35.9227	1405.22	1431.69	0.1496	0.0303	0.1495	0.0301	33.7152	35.9569
22.5	13.12%	4.56%	17.55%	1.43%	1.6334	1.6700	3.6073	-4.6852	2.8277	-3.0979	0.0605	0.0016	28.9665	33.2801	36.2800	35.9942	33.9734	35.9942	1409.22	1437.94	0.1534	0.0301	0.1534	0.0299	33.7529	36.0369
23.0	13.70%	4.47%	18.16%	1.42%	1.6374	1.6660	3.5466	-4.7101	2.8262	-3.1238	0.0594	0.0016	29.0374	33.2874	36.3801	36.0371	33.9880	36.0371	1415.66	1444.56	0.1594	0.0296	0.1593	0.0294	33.7904	36.0948
23.5	14.52%	4.52%	18.95%	1.47%	1.6344	1.6690	3.5108	-4.6990	2.7928	-3.1534	0.0610	0.0017	28.9844	33.3531	36.4944	35.9942	34.0099	35.9942	1416.80	1445.11	0.1674	0.0302	0.1674	0.0299	33.8323	36.1720
24.0	15.56%	4.60%	20.06%	1.50%	1.6319	1.6714	3.5466	-4.7211	2.8320	-3.1616	0.0630	0.0017	28.9404	33.4042	36.6088	36.2086	34.1340	36.2086	1417.19	1447.59	0.1780	0.0308	0.1781	0.0305	33.8824	36.2210
24.5	16.58%	4.63%	21.22%	1.47%	1.6360	1.6673	3.6211	-4.7680	2.8596	-3.1681	0.0625	0.0018	29.0130	33.4261	36.6373	36.2086	34.0829	36.2086	1420.66	1450.87	0.1889	0.0307	0.1890	0.0305	33.8890	36.2777
25.0	17.42%	4.54%	22.14%	1.44%	1.6365	1.6668	3.5935	-4.7404	2.8688	-3.1984	0.0620	0.0018	29.0219	33.4626	36.7088	36.1371	34.0464	36.1371	1422.53	1451.95	0.1976	0.0302	0.1978	0.0299	33.9041	36.3328
25.5	18.84%	4.49%	23.44%	1.45%	1.6401	1.6633	3.5135	-4.8205	2.8472	-3.2341	0.0602	0.0017	29.0851	33.4918	36.7803	36.2086	34.0756	36.2086	1425.80	1458.67	0.2113	0.0299	0.2114	0.0297	33.9443	36.3844
26.0	20.39%	4.56%	24.98%	1.48%	1.6378	1.6655	3.5659	-4.8646	2.8717	-3.2433	0.0633	0.0018	29.0453	33.4991	36.8517	36.3515	34.1559	36.3515	1428.19	1461.37	0.2266	0.0305	0.2269	0.0302	33.9949	36.4369
26.5	21.69%	4.65%	26.48%	1.47%	1.6358	1.6675	3.6349	-4.8094	2.9056	-3.2710	0.0647	0.0017	29.0097	33.6085	36.8374	36.3229	34.2215	36.3229	1430.36	1463.52	0.2405	0.0310	0.2408	0.0306	34.0423	36.5105
27.0	23.08%	4.51%	27.91%	1.40%	1.6390	1.6643	3.6625	-4.8646	2.9199	-3.2936	0.0601	0.0017	29.0669	33.5720	36.9946	36.3515	34.1924	36.3515	1433.51	1467.58	0.2548	0.0298	0.2549	0.0295	34.0560	36.5301
27.5	24.81%	4.35%	29.48%	1.37%	1.6419	1.6614	3.6239	-4.9198	2.9231	-3.3406	0.0602	0.0015	29.1180	33.6085	37.0661	36.4944	34.1924	36.4944	1435.66	1468.61	0.2710	0.0289	0.2714	0.0286	34.0604	36.6361
28.0	26.71%	4.32%	31.32%	1.32%	1.6400	1.6634	3.6763	-5.0026	2.9555	-3.3599	0.0566	0.0015	29.0830	33.6815	36.9946	36.6373	34.3018	36.6373	1433.09	1469.61	0.2900	0.0283	0.2901	0.0282	34.0952	36.6979
28.5	28.30%	4.46%	32.94%	1.38%	1.6382	1.6651	3.7343	-4.9971	2.9973	-3.3724	0.0597	0.0014	29.0519	33.6377	37.1233	36.7231	34.3091	36.7231	1434.80	1470.72	0.3059	0.0294	0.3062	0.0292	34.1254	36.7367
29.0	29.68%	4.56%	34.48%	1.43%	1.6408	1.6625	3.8005	-5.0026	3.0243	-3.4023	0.0646	0.0015	29.0985	33.6450	37.2805	36.6373	34.2653	36.6373	1438.71	1476.18	0.3202	0.0304	0.3208	0.0300	34.1591	36.7748
29.5	31.34%	4.37%	36.14%	1.30%	1.6433	1.6601	3.8116	-5.0523	3.0386	-3.4457	0.0573	0.0014	29.1415	33.6961	37.2948	36.6659	34.3675	36.6659	1440.68	1478.80	0.3373	0.0285	0.3374	0.0284	34.1711	36.8231
30.0	33.11%	4.18%	37.76%	1.27%	1.6414	1.6620	3.7867	-5.1544	3.0427	-3.4964	0.0563	0.0012	29.1084	33.6815	37.4234	36.6373	34.3748	36.6373	1440.14	1477.88	0.3541	0.0275	0.3544	0.0273	34.1948	36.9239
30.5	34.78%	4.23%	39.32%	1.31%	1.6417	1.6617	3.8419	-5.2096	3.0741	-3.5328	0.0583	0.0012	29.1134	33.7545	37.4949	36.7803	34.3748	36.7803	1443.41	1481.30	0.3701	0.0280	0.3705	0.0277	34.2301	36.9690
31.0	36.70%	4.30%	41.23%	1.28%	1.6401	1.6633	3.8447	-5.2178	3.1174	-3.5500	0.0562	0.0012	29.0851	33.7837	37.4663	36.8946	34.3967	36.8946	1443.97	1483.68	0.3895	0.0280	0.3897	0.0279	34.2698	37.0071
31.5	38.34%	4.37%	42.79%	1.32%	1.6423	1.6611	3.9247	-5.3061	3.1489	-3.5956	0.0590	0.0013	29.1240	33.8640	37.6378	36.8517	34.4478	36.8517	1450.88	1489.97	0.4053	0.0287	0.4057	0.0284	34.3209	37.0871
32.0	39.83%	4.35%	44.24%	1.32%	1.6443	1.6591	3.9992	-5.2951	3.1831	-3.6372	0.0586	0.0013	29.1596	33.9004	37.5806	36.9518	34.5135	36.9518	1458.10	1496.30	0.4200	0.0286	0.4203	0.0284	34.3704	37.1487
32.5	41.20%	4.42%	45.72%	1.33%	1.6426	1.6608	4.0351	-5.3613	3.2256	-3.6663	0.0596	0.0013	29.1296	33.9734	37.9237	36.9946	34.5937	36.9946	1461.75	1499.45	0.4343	0.0290	0.4346	0.0288	34.4224	37.2168
33.0	42.47%	4.36%	47.02%	1.33%	1.6410	1.6624	4.0875	-5.4276	3.2498	-3.7075	0.0593	0.0013	29.1009	34.0172	37.8093	36.9518	34.5427	36.9518	1463.38	1499.99	0.4471	0.0287	0.4475	0.0284	34.4488	37.2699
33.5	43.94%	4.22%	48.42%	1.27%	1.6429	1.6604	4.0627	-5.4717	3.2735	-3.7588	0.0567	0.0012	29.1355	34.0464	37.7807	37.0661	34.5573	37.0661	1462.12	1500.42	0.4615	0.0277	0.4618	0.0275	34.4470	37.3294
34.0	45.27%	4.25%	49.70%	1.28%	1.6448	1.6586	4.1096	-5.5600	3.2923	-3.8127	0.0567	0.0012	29.1683	34.0756	37.9237	37.0661	34.6010	37.0661	1465.99	1504.64	0.4746	0.0278	0.4749	0.0276	34.4792	37.3917
34.5	46.79%	4.16%	51.10%	1.22%	1.6431	1.6602	4.1179	-5.6235	3.3100	-3.8737	0.0537	0.0012	29.1396	34.1194	38.2095	37.2090	34.5937	37.2090	1471.77	1508.19	0.4893	0.0270	0.4894	0.0269	34.5446	37.5236
35.0	48.32%	4.23%	52.46%	1.29%	1.6416	1.6617	4.1206	-5.7035	3.3429	-3.9259	0.0580	0.0012	29.1123	34.1924	38.2095	37.3520	34.7762	37.3520	1478.49	1517.48	0.5035	0.0279	0.5039	0.0276	34.6515	37.6135
35.5	49.94%	4.26%	53.99%	1.29%	1.6434	1.6599	4.1317	-5.7339	3.3719	-3.9815	0.0576	0.0011	29.1444	34.3748	38.2810	37.4949	34.8492	37.4949	1486.33	1527.13	0.5193	0.0280	0.5196	0.0277	34.7346	37.7023
36.0	51.27%	4.29%	55.28%	1.28%	1.6435	1.6598	4.1869	-5.8305	3.4000	-4.0211	0.0566	0.0012	29.1462	34.3748	38.2810	37.4949	34.8857	37.4949	1493.44	1531.16	0.5325	0.0280	0.5327	0.0279	34.7822	37.7877
36.5	52.88%	4.21%	56.78%	1.27%	1.6452	1.6581	4.2089	-5.9022	3.4317	-4.0834	0.0577	0.0011	29.1767	34.4551	38.4954	37.4663	34.8346	37.4663	1495.08	1535.21	0.5479	0.0277	0.5483	0.0274	34.8111	37.8373
37.0	54.17%	4.32%	58.12%	1.27%	1.6437	1.6596	4.2696	-5.9822	3.4784	-4.1347	0.0570	0.0011	29.1495	34.5573	38.4954	37.4234	34.8857	37.4234	1500.54	1538.80	0.5612	0.0281	0.5615	0.0279	34.8635	37.8957
37.5	55.42%	4.35%	59.34%	1.30%	1.6422	1.6611	4.3193	-6.0347	3.5233	-4.1881	0.0592	0.0011	29.1232	34.6010	38.6669	37.6378	34.9221	37.6378	1503.56	1542.57	0.5734	0.0286	0.5738	0.0283	34.9200	37.9733
38.0	56.66%	4.30%	60.47%	1.29%	1.6439	1.6595	4.3800	-6.1064	3.5673	-4.2440	0.0592	0.0010	29.1525	34.6667	38.7812	37.5663	35.0316	37.5663	1509.61	1548.25	0.5852	0.0283	0.5856	0.0279	34.9642	38.0300
38.5	57.88%	4.28%	61.70%	1.27%	1.6455	1.6579	4.4297	-6.2003	3.6065	-4.2983	0.0583	0.0011	29.1812	34.6594	38.7812	37.6378	35.0389	37.6378	1515.16	1552.64	0.5975	0.0280	0.5979	0.0278	34.9958	38.0753
39.0	59.07%	4.25%	62.84%	1.26%	1.6440	1.6593	4.5042	-6.2858	3.6576	-4.3442	0.0577	0.0011	29.1549	34.7032	38.8527	37.7093	34.9951	37.7093	1517.82	1554.60	0.6092	0.0278	0.6096	0.0275	35.0332	38.1310
39.5	59.86%	4.37%	63.76%	1.27%	1.6425	1.6608	4.5732	-6.3217	3.7093	-4.3991	0.0581	0.0011	29.1289	34.8054	38.9527	37.6950	35.0097	37.6950	1517.53	1555.77	0.6178	0.0284	0.6181	0.0282	35.0653	38.1952

Effects of long-term heat exposure on self-contained self-rescuers

Time sec	Exp O2 percent	Exp CO2 percent	Ins O2 percent	Ins CO2 percent	Exp Vol liters	Ins Vol liters	Exp Pk Prs cm H2O	Ins Pk Prs cm H2O	Exp Av Prs cm H2O	Ins Av Prs cm H2O	xp CO2 Pk liters	ns CO2Min liters	VE Stpd liers/min	sWB EndT C	sDB EndT C	xpDB EndT C	pWB EndT C	pDB EndT C	ExpH2OVapr	InsH2OVapr	uthO2TAvth	CO2TAv	uthO2VAvth	CO2VAv	sWBAvgTp C	sDBAvgTp C
40.0	60.62%	4.33%	64.49%	1.29%	1.6441	1.6592	4.6146	-6.4376	3.7518	-4.4540	0.0604	0.0010	29.1567	34.8857	39.0671	37.8522	35.1046	37.8522	1523.93	1561.98	0.6251	0.0285	0.6256	0.0281	35.1185	38.2778
40.5	61.28%	4.29%	65.11%	1.30%	1.6456	1.6577	4.7829	-6.5314	3.7824	-4.5296	0.0594	0.0010	29.1839	34.9513	39.0099	37.8093	35.1849	37.8093	1531.35	1570.99	0.6316	0.0283	0.6320	0.0279	35.1928	38.3462
41.0	62.00%	4.19%	65.72%	1.22%	1.6442	1.6592	4.7112	-6.6446	3.8369	-4.6093	0.0566	0.0010	29.1575	34.9951	39.2814	37.9237	35.2141	37.9237	1534.54	1572.39	0.6383	0.0273	0.6386	0.0271	35.2300	38.4293
41.5	62.51%	4.17%	66.18%	1.22%	1.6442	1.6592	4.7526	-6.7273	3.8715	-4.6683	0.0570	0.0010	29.1581	35.0316	39.2814	38.0666	35.2141	38.0666	1535.02	1574.32	0.6431	0.0273	0.6434	0.0269	35.2514	38.4635
42.0	63.22%	4.13%	66.81%	1.22%	1.6427	1.6606	4.8050	-6.8184	3.9163	-4.7425	0.0571	0.0009	29.1322	35.0681	39.4101	38.0952	35.2141	38.0952	1538.27	1576.85	0.6499	0.0271	0.6502	0.0267	35.2956	38.5345
42.5	63.95%	4.19%	67.51%	1.23%	1.6442	1.6591	4.8492	-6.9205	3.9566	-4.8322	0.0572	0.0009	29.1592	35.1776	39.5673	38.1380	35.3600	38.1380	1546.19	1584.29	0.6570	0.0274	0.6573	0.0271	35.3573	38.6080
43.0	64.61%	4.13%	68.11%	1.15%	1.6458	1.6576	4.9044	-7.0171	4.0038	-4.8992	0.0536	0.0009	29.1858	35.2432	39.6387	38.0952	35.3016	38.0952	1555.10	1592.52	0.6636	0.0265	0.6636	0.0264	35.4292	38.7060
43.5	65.33%	4.14%	68.71%	1.21%	1.6443	1.6591	4.9181	-7.1551	4.0437	-4.9738	0.0569	0.0009	29.1599	35.2870	39.7817	38.2810	35.3235	38.2810	1558.60	1595.13	0.6699	0.0271	0.6702	0.0268	35.4786	38.8060
44.0	65.99%	4.22%	69.38%	1.23%	1.6429	1.6605	4.9816	-7.2268	4.0890	-5.0561	0.0574	0.0009	29.1345	35.3600	39.8103	38.2667	35.4184	38.2667	1562.82	1598.98	0.6765	0.0276	0.6768	0.0272	35.5301	38.8570
44.5	66.84%	4.09%	70.10%	1.18%	1.6444	1.6590	5.0285	-7.3482	4.1347	-5.1380	0.0551	0.0009	29.1610	35.5060	39.9961	38.4239	35.4330	38.4239	1568.91	1605.70	0.6844	0.0266	0.6847	0.0263	35.5897	38.9583
45.0	67.60%	4.10%	70.77%	1.20%	1.6458	1.6575	5.0920	-7.4145	4.1786	-5.2146	0.0562	0.0008	29.1874	35.5352	40.0389	38.4382	35.4476	38.4382	1578.95	1615.16	0.6915	0.0269	0.6919	0.0265	35.6647	39.0161
45.5	68.33%	4.12%	71.46%	1.19%	1.6444	1.6590	5.1113	-7.5138	4.2296	-5.2889	0.0562	0.0008	29.1618	35.7249	40.2819	38.5668	35.5060	38.5668	1587.66	1623.69	0.6986	0.0269	0.6990	0.0266	35.7626	39.1198
46.0	68.96%	4.24%	72.09%	1.22%	1.6430	1.6604	5.2024	-7.6463	4.2702	-5.3685	0.0564	0.0009	29.1364	35.7979	40.3248	38.5525	35.6811	38.5525	1599.41	1636.07	0.7050	0.0275	0.7052	0.0273	35.8944	39.2410
46.5	69.67%	4.21%	72.73%	1.21%	1.6444	1.6589	5.2493	-7.7622	4.3225	-5.4429	0.0562	0.0008	29.1623	36.0533	40.4963	38.7097	35.8709	38.7097	1621.01	1657.94	0.7117	0.0273	0.7120	0.0271	36.0843	39.3964
47.0	70.28%	4.17%	73.31%	1.17%	1.6444	1.6589	5.3045	-7.8588	4.3710	-5.5124	0.0545	0.0009	29.1621	36.3087	40.6392	38.9241	36.1628	38.9241	1648.51	1686.39	0.7179	0.0268	0.7180	0.0267	36.3342	39.5339
47.5	70.94%	4.16%	73.85%	1.22%	1.6459	1.6575	5.3790	-7.9774	4.4193	-5.5981	0.0569	0.0008	29.1876	36.6152	40.7821	38.8384	36.4401	38.8384	1690.61	1722.30	0.7236	0.0272	0.7239	0.0269	36.6261	39.6549
48.0	71.38%	4.25%	74.35%	1.22%	1.6444	1.6590	5.4563	-8.0795	4.4771	-5.6785	0.0566	0.0008	29.1614	36.8561	41.0680	39.0671	36.6006	39.0671	1718.69	1744.68	0.7284	0.0276	0.7286	0.0274	36.8355	39.7933
48.5	72.00%	4.14%	74.78%	1.22%	1.6430	1.6604	5.5556	-8.2092	4.5337	-5.7622	0.0583	0.0008	29.1367	36.6736	41.1252	39.1242	36.3817	39.1242	1680.46	1710.71	0.7335	0.0272	0.7339	0.0268	36.5985	39.9177
49.0	72.38%	4.21%	75.21%	1.22%	1.6445	1.6589	5.6632	-8.3969	4.5890	-5.8482	0.0569	0.0009	29.1630	36.6736	41.2109	39.1385	36.2358	39.1385	1677.17	1706.47	0.7377	0.0274	0.7380	0.0272	36.5721	40.0442
49.5	72.93%	4.14%	75.61%	1.24%	1.6459	1.6574	5.7322	-8.4631	4.6305	-5.9171	0.0574	0.0008	29.1888	36.7320	41.4110	39.3529	36.2941	39.3529	1682.70	1711.38	0.7424	0.0273	0.7427	0.0269	36.6166	40.1582
50.0	73.62%	4.07%	76.21%	1.23%	1.6445	1.6589	5.8288	-8.5349	4.6779	-5.9999	0.0577	0.0008	29.1635	36.8561	41.5682	39.3529	36.4182	39.3529	1688.71	1718.10	0.7487	0.0269	0.7491	0.0265	36.7022	40.2959
50.5	73.98%	4.24%	76.66%	1.27%	1.6431	1.6603	5.8537	-8.6287	4.7316	-6.0782	0.0588	0.0008	29.1383	36.9363	41.6397	39.5816	36.4985	39.5816	1694.99	1724.80	0.7529	0.0279	0.7532	0.0276	36.7809	40.3888
51.0	74.36%	4.23%	77.01%	1.27%	1.6445	1.6588	5.8978	-8.7005	4.7791	-6.1604	0.0573	0.0009	29.1638	37.0385	41.9255	39.6387	36.5642	39.6387	1705.41	1733.57	0.7567	0.0278	0.7568	0.0275	36.8529	40.4885
51.5	74.85%	4.20%	77.41%	1.27%	1.6459	1.6574	5.9530	-8.8274	4.8321	-6.2410	0.0572	0.0010	29.1893	37.1991	41.9827	39.6387	36.5277	39.6387	1721.10	1748.25	0.7611	0.0276	0.7613	0.0273	36.9707	40.5870
52.0	75.25%	4.20%	77.78%	1.27%	1.6445	1.6588	6.0496	-8.9350	4.8829	-6.3210	0.0573	0.0010	29.1638	37.2575	42.1399	39.6387	36.7101	39.6387	1733.55	1758.48	0.7649	0.0276	0.7652	0.0273	37.0770	40.6866
52.5	75.56%	4.22%	78.07%	1.27%	1.6445	1.6588	6.1048	-9.0316	4.9283	-6.3911	0.0572	0.0010	29.1638	37.4034	42.2829	39.9246	36.7831	39.9246	1741.59	1766.29	0.7680	0.0277	0.7682	0.0274	37.1540	40.7961
53.0	75.79%	4.29%	78.31%	1.30%	1.6431	1.6603	6.1738	-9.1696	4.9775	-6.4721	0.0573	0.0011	29.1384	37.5494	42.3257	40.0389	36.9072	40.0389	1753.18	1777.81	0.7704	0.0281	0.7705	0.0280	37.2689	40.8890
53.5	76.23%	4.26%	78.64%	1.32%	1.6445	1.6588	6.2428	-9.2800	5.0328	-6.5564	0.0580	0.0010	29.1638	37.6588	42.3543	39.9246	36.9655	39.9246	1766.54	1790.51	0.7741	0.0281	0.7743	0.0279	37.3693	40.9872
54.0	76.52%	4.29%	78.93%	1.31%	1.6459	1.6574	6.3393	-9.3903	5.0783	-6.6442	0.0568	0.0012	29.1891	37.8121	42.6116	40.0389	37.0531	40.0389	1782.04	1805.40	0.7771	0.0281	0.7772	0.0280	37.4809	41.0518
54.5	76.89%	4.25%	79.20%	1.32%	1.6445	1.6589	6.4359	-9.5559	5.1395	-6.7366	0.0582	0.0012	29.1635	38.0237	42.7831	39.9961	37.1845	39.9961	1798.73	1825.72	0.7802	0.0281	0.7804	0.0278	37.6597	41.1332
55.0	77.07%	4.35%	79.37%	1.37%	1.6430	1.6603	6.4939	-9.6663	5.1937	-6.8318	0.0586	0.0014	29.1375	38.3375	42.7831	40.1533	37.3742	40.1533	1822.81	1857.22	0.7821	0.0288	0.7822	0.0286	37.9238	41.2277
55.5	77.12%	4.49%	79.50%	1.44%	1.6444	1.6589	6.5877	-9.8043	5.2519	-6.9268	0.0605	0.0015	29.1622	38.7170	42.9260	40.2104	37.5859	40.2104	1863.33	1898.13	0.7831	0.0298	0.7831	0.0296	38.2304	41.3126
56.0	77.29%	4.47%	79.59%	1.47%	1.6458	1.6575	6.6815	-9.9202	5.3207	-7.0241	0.0618	0.0016	29.1875	39.0089	43.0118	40.2104	37.8705	40.2104	1905.38	1935.12	0.7842	0.0300	0.7844	0.0297	38.5000	41.3731
			79.59%	3.18%			6.6815	-2.3396																		
			11.30%	0.78%			2.2772	-9.9202																		
			40.50%	1.30%																						

Effects of long-term heat exposure on self-contained self-rescuers

Time sec	Exp O2 percent	Exp CO2 percent	Ins O2 percent	Ins CO2 percent	Exp Vol liters	Ins Vol liters	Exp Pk Prs cm H2O	Ins Pk Prs cm H2O	Exp Av Prs cm H2O	Ins Av Prs cm H2O	xp CO2 Pk liters	ns CO2Min liters	VE Stpd liers/min	sWB EndT C	sDB EndT C	xpDB EndT C	pWB EndT C	xpDB EndT C	ExpH2OVapr	InsH2OVapr	uthO2TAv	th CO2TAv	uthO2VAv	th CO2VAv	sWBAvgTp C	sDBAvgTp C
0.0	0.00%	0.00%	0.00%	0.00%	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.00	0.00	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.5	22.61%	0.48%	23.03%	0.41%	1.9635	1.6494	0.6435	-0.9239	0.0879	-0.2074	0.0079	0.0013	25.6172	23.9677	25.3080	32.4354	31.1856	32.4354	1042.74	1033.68	0.2066	0.0037	0.2282	0.0045	25.1238	26.2624
1.0	32.81%	0.39%	36.39%	0.24%	1.6381	1.6464	1.1292	-0.9239	0.1556	-0.2243	0.0057	0.0009	29.0500	29.7845	31.2348	32.1495	30.8645	32.1495	1178.55	1181.06	0.3472	0.0032	0.3460	0.0032	30.3321	31.6058
1.5	77.30%	0.45%	75.12%	0.09%	1.6324	1.6522	1.9654	-2.5466	0.9887	-1.6900	0.0062	-0.0002	28.9484	29.5217	30.4201	31.6350	31.0908	31.6350	1196.73	1181.75	0.7611	0.0027	0.7621	0.0027	30.2377	31.0097
2.0	58.51%	1.81%	61.06%	0.40%	1.6364	1.6481	2.8954	-3.0874	1.6084	-2.2189	0.0255	-0.0002	29.0196	30.4851	32.5497	34.6650	32.9371	34.6650	1287.36	1268.48	0.5986	0.0113	0.5978	0.0111	31.6448	33.6726
2.5	55.66%	3.32%	58.51%	0.80%	1.6347	1.6498	2.5311	-3.1951	1.5083	-2.3000	0.0484	-0.0002	28.9905	30.7259	33.2072	34.9222	33.1707	34.9222	1299.70	1282.19	0.5711	0.0212	0.5709	0.0206	31.8682	34.0818
3.0	53.69%	4.04%	56.63%	0.99%	1.6330	1.6515	2.8623	-3.2199	1.5639	-2.3107	0.0585	-0.0002	28.9602	31.0397	33.8646	35.4082	33.2582	35.4082	1315.56	1298.25	0.5516	0.0258	0.5516	0.0251	32.1039	34.4431
3.5	52.03%	4.33%	54.99%	1.07%	1.6344	1.6501	2.2827	-3.2640	1.5332	-2.3741	0.0608	-0.0002	28.9847	31.4192	34.2076	35.6369	33.4261	35.6369	1337.55	1319.95	0.5351	0.0276	0.5351	0.0270	32.3699	34.8174
4.0	50.59%	4.55%	53.59%	1.16%	1.6343	1.6502	2.4621	-3.3330	1.4765	-2.4707	0.0674	-0.0002	28.9823	31.7111	34.7079	35.9227	33.5355	35.9227	1353.45	1337.20	0.5207	0.0293	0.5209	0.0285	32.5877	35.1125
4.5	49.13%	4.69%	52.18%	1.20%	1.6358	1.6487	2.0896	-3.4517	1.4226	-2.5758	0.0668	-0.0002	29.0089	32.0322	34.9508	36.0942	33.7545	36.0942	1374.26	1358.23	0.5065	0.0301	0.5065	0.0294	32.8321	35.4442
5.0	47.72%	4.79%	50.84%	1.24%	1.6340	1.6505	2.0206	-3.4710	1.3565	-2.6676	0.0697	-0.0002	28.9779	32.3314	35.2796	36.4230	33.9734	36.4230	1393.72	1378.26	0.4926	0.0310	0.4928	0.0302	33.0846	35.7471
5.5	46.41%	4.86%	49.60%	1.24%	1.6322	1.6523	2.5311	-3.6173	1.2909	-2.7520	0.0680	-0.0002	28.9452	32.7036	35.6369	36.4944	34.1048	36.4944	1412.97	1399.06	0.4799	0.0311	0.4800	0.0305	33.3392	36.0321
6.0	45.21%	4.84%	48.44%	1.25%	1.6337	1.6508	2.6967	-3.6780	1.2346	-2.8294	0.0690	-0.0002	28.9723	32.9882	36.0656	36.7088	34.3018	36.7088	1433.65	1419.64	0.4681	0.0311	0.4682	0.0305	33.5586	36.2901
6.5	43.89%	4.93%	47.25%	1.27%	1.6353	1.6492	2.3434	-3.7608	1.1751	-2.9445	0.0690	-0.0002	29.0008	33.3166	36.2657	37.0661	34.3383	37.0661	1454.70	1442.72	0.4556	0.0316	0.4557	0.0310	33.7967	36.5472
7.0	42.76%	4.80%	46.11%	1.24%	1.6334	1.6511	2.4483	-3.7746	1.1446	-3.0254	0.0680	-0.0002	28.9675	33.5355	36.7803	37.0661	34.5573	37.0661	1472.21	1461.05	0.4442	0.0308	0.4443	0.0302	34.0191	36.8129
7.5	41.69%	4.79%	45.07%	1.23%	1.6315	1.6531	2.0896	-3.9153	1.0239	-3.2007	0.0670	-0.0002	28.9326	33.8421	36.9518	37.4091	34.7470	37.4091	1490.07	1479.84	0.4336	0.0307	0.4338	0.0301	34.2381	37.0406
8.0	40.81%	4.80%	44.19%	1.25%	1.6331	1.6514	2.0896	-4.2161	0.8845	-3.4481	0.0682	-0.0002	28.9619	34.1194	37.2090	37.4949	34.8857	37.4949	1509.53	1502.81	0.4248	0.0309	0.4250	0.0303	34.4625	37.2649
8.5	40.01%	4.89%	43.49%	1.26%	1.6349	1.6497	2.4980	-5.1406	0.7014	-3.7747	0.0686	-0.0002	28.9928	34.3383	37.4663	37.6950	35.0389	37.6950	1527.42	1520.96	0.4173	0.0314	0.4175	0.0308	34.6363	37.4545
9.0	39.56%	4.77%	43.00%	1.25%	1.6329	1.6516	2.4897	-7.3207	0.4742	-4.2416	0.0696	-0.0002	28.9586	34.5937	37.6378	37.8522	35.2141	37.8522	1543.64	1539.43	0.4124	0.0309	0.4128	0.0301	34.8472	37.6836
9.5	39.00%	4.85%	42.46%	1.28%	1.6329	1.6517	2.0344	-10.8667	0.0500	-4.9645	0.0712	-0.0002	28.9571	34.7032	37.7807	37.9951	35.3600	37.9951	1559.08	1557.08	0.4069	0.0314	0.4073	0.0306	35.0241	37.8460
10.0	32.53%	6.83%	34.53%	4.11%	1.6262	1.6583	2.2662	-7.4807	0.2162	-2.6617	0.0865	0.0149	28.8393	34.6886	37.4663	37.7521	35.2141	37.7521	1549.65	1542.50	0.3366	0.0537	0.3353	0.0547	34.9098	37.5819
10.5	22.35%	4.58%	27.89%	1.26%	1.6291	1.6554	4.5594	-2.3258	2.8439	-1.1237	0.0565	0.0011	28.8905	34.3748	37.1376	37.4949	35.0316	37.4949	1531.32	1520.53	0.2532	0.0286	0.2512	0.0292	34.6366	37.2036
11.0	26.13%	3.71%	29.99%	0.96%	1.6279	1.6566	4.3635	-3.2530	2.3060	-2.1371	0.0527	-0.0002	28.8700	34.9805	38.0952	38.0380	35.4476	38.0380	1574.50	1568.21	0.2807	0.0238	0.2806	0.0233	35.1694	37.9174
11.5	25.50%	4.50%	29.34%	1.15%	1.6302	1.6544	3.5935	-3.2778	2.1307	-2.2326	0.0621	-0.0002	28.9095	35.2870	38.5668	38.2810	35.6154	38.2810	1595.20	1591.99	0.2744	0.0287	0.2742	0.0283	35.4017	38.2343
12.0	24.94%	4.73%	28.76%	1.22%	1.6325	1.6521	3.0058	-3.3524	1.9957	-2.3308	0.0672	-0.0002	28.9500	35.4768	38.7240	38.4382	35.6811	38.4382	1612.32	1610.75	0.2684	0.0304	0.2685	0.0297	35.5742	38.4574
12.5	24.28%	4.87%	28.10%	1.25%	1.6298	1.6547	2.7243	-3.4434	1.8549	-2.4132	0.0681	-0.0002	28.9027	35.7249	38.9956	38.4954	35.7979	38.4954	1625.90	1625.42	0.2618	0.0312	0.2619	0.0306	35.7480	38.6538
13.0	23.61%	4.94%	27.40%	1.28%	1.6270	1.6576	2.4869	-3.4959	1.7701	-2.4837	0.0694	-0.0002	28.8526	35.8855	39.2386	38.7240	35.9146	38.7240	1638.93	1638.75	0.2549	0.0317	0.2551	0.0311	35.9102	38.8433
13.5	22.71%	5.08%	26.57%	1.34%	1.6292	1.6553	2.3103	-3.5262	1.7150	-2.5184	0.0720	-0.0002	28.8919	36.0898	39.3529	38.7812	36.1263	38.7812	1657.30	1658.09	0.2462	0.0328	0.2464	0.0321	36.0752	39.0064
14.0	21.65%	5.12%	25.58%	1.36%	1.6315	1.6530	2.3434	-3.5731	1.7112	-2.5302	0.0718	-0.0002	28.9334	36.2941	39.6387	38.8955	36.1482	38.8955	1673.28	1674.88	0.2360	0.0330	0.2361	0.0324	36.2130	39.1453
14.5	20.99%	4.93%	24.80%	1.32%	1.6285	1.6560	2.3103	-3.5952	1.6950	-2.5918	0.0706	-0.0002	28.8799	36.4912	39.8531	39.2100	36.3087	39.2100	1684.83	1687.44	0.2287	0.0319	0.2290	0.0312	36.3671	39.3272
15.0	20.40%	5.03%	24.22%	1.32%	1.6282	1.6563	2.3241	-3.6366	1.7321	-2.6470	0.0704	-0.0001	28.8755	36.6736	39.9246	39.2100	36.3817	39.2100	1697.18	1699.84	0.2229	0.0324	0.2231	0.0318	36.4904	39.4717
15.5	19.84%	5.02%	23.60%	1.36%	1.6250	1.6595	2.6636	-3.5290	1.7162	-2.5983	0.0724	-0.0001	28.8180	36.8488	40.0389	39.3529	36.4985	39.3529	1707.58	1710.44	0.2168	0.0326	0.2172	0.0319	36.6264	39.6300
16.0	19.27%	5.08%	23.10%	1.36%	1.6276	1.6569	2.6967	-3.6504	1.6515	-2.6596	0.0721	0.0001	28.8637	37.0020	40.5678	39.4958	36.6736	39.4958	1727.43	1730.15	0.2115	0.0329	0.2118	0.0322	36.7819	39.7669
16.5	18.82%	5.13%	22.68%	1.38%	1.6303	1.6542	2.1889	-3.7166	1.5957	-2.7304	0.0719	0.0001	28.9126	37.1699	40.5535	39.5816	36.7904	39.5816	1742.52	1746.60	0.2072	0.0332	0.2075	0.0326	36.9097	39.9090
17.0	18.63%	5.04%	22.48%	1.36%	1.6272	1.6573	2.1586	-3.7332	1.5877	-2.7436	0.0714	0.0003	28.8576	37.3304	40.6392	39.6387	36.7831	39.6387	1752.87	1757.89	0.2052	0.0327	0.2055	0.0320	37.0449	40.0473
17.5	18.39%	5.11%	22.29%	1.40%	1.6241	1.6605	2.1889	-3.7166	1.6216	-2.7547	0.0706	0.0004	28.8011	37.5202	40.8393	39.8103	36.8780	39.8103	1763.22	1767.86	0.2031	0.0331	0.2034	0.0326	37.1674	40.1651
18.0	18.39%	5.07%	22.31%	1.41%	1.6270	1.6575	2.3931	-3.7608	1.6106	-2.7813	0.0712	0.0005	28.8540	37.6223	41.0680	39.7817	37.0385	39.7817	1780.39	1784.03	0.2031	0.0330	0.2035	0.0324	37.2857	40.2842
18.5	18.16%	5.26%	22.28%	1.47%	1.6270	1.6575	2.6829	-3.7470	1.6171	-2.7840	0.0723	0.0006	28.8538	37.7683	40.9965	39.8531	37.0750	39.8531	1786.36	1793.93	0.2019	0.0342	0.2022	0.0337	37.3693	40.3324
19.0	18.46%	5.15%	22.55%	1.48%	1.6301	1.6544	2.1889	-3.7277	1.6062	-2.8224	0.0733	0.0007	28.9085	37.8705	41.2395	39.9818	37.1991	39.9818	1802.97	1807.27	0.2046	0.0338	0.2051	0.0331	37.4637	40.4540
19.5	18.71%	5.19%	22.94%	1.49%	1.6272	1.6573	2.1586	-3.7884	1.5859	-2.8479	0.0719	0.0009	28.8567	38.0237	41.4253	40.2819	37.2939	40.2819	1809.54	1815.15	0.2080	0.0340	0.2082	0.0334	37.5681	40.5825
20.0	19.16%	5.21%	23.46%	1.51%	1.6245	1.6600	2.3766	-3.8049	1.5574	-2.8825	0.0723	0.0011	28.8086	37.9580	41.3538	40.0961	37.3450	40.0961	1813.75	1819.12	0.2128	0.0342	0.2131	0.0336	37.6319	40.6522
20.5	19.84%	5.10%	24.18%	1.52%	1.6278	1.6568	2.2137	-3.8988	1.5542	-2.9026	0.0731	0.0011	28.8670	38.1332	41.5682	40.1390	37.4399	40.1390	1829.18	1833.75	0.2196	0.0338	0.2201	0.0331	37.7267	40.7285
21.0	20.39%	5.19%	24.84%	1.55%	1.6309	1.6537	2.2220	-3.9153	1.5435	-2.9313	0.0729	0.0013	28.9218	38.2500	41.6397	40.2676	37.4618	40.2676	1841.86	1846.31	0.2258	0.0344	0.2262	0.0337	37.8071	40.8076
21.5	21.11%	5.18%	25.65%	1.55%	1.6283	1.6562	2.2137	-3.8850	1.5465	-2.9455	0.0728	0.0015	28.8761	38.3521	41.6397	40.3534	37.5129	40.3534	1846.67	1852.80	0.2334	0.0343	0.2338	0.0337	37.8881	40.8753
22.0	21.75%	5.18%	26.40%	1.58%	1.6259	1.6587	2.1889	-3.8822	1.6174	-2.8956	0.0722	0.0016	28.8332	38.3959	41.8112	40.3820	37.5786	40.3820	1850.93	1856.04	0.2404	0.0344	0.2408	0.0338	37.9410	40.9257
22.5	22.22%	5.15%	26.92%	1.58%	1.6288	1.6557	2.2689	-3.8022	1.6943	-2.8297	0.0719	0.0017	28.8857	38.4251	41.8541	40.2819	37.6588	40.2819	1860.33	1866.10	0.2453	0.0342	0.2457	0.0337	37.9976	40.9693
23.0	22.51%	5.17%	27.24%	1.62%	1.6316	1.6529	2.3103	-3.8160	1.7440	-2.8214	0.0734	0.0019	28.9347	38.5127	41.8112	40.3820	37.6369	40.3820	1870.88	1876.41	0.2483	0.0346	0.2488	0.0339	38.0618	41.0425
23.5	23.04%	5.12%	27.77%	1.59%	1.6290	1.6555	2.3655	-3.7884	1.7793	-2.8050	0.0715	0.0020	28.8895	38.6076	41.9255	40.4963	37.7318	40.4963	1873.48	1880.15	0.2538	0.0341	0.2541	0.0335	38.1202	41.0998
24.0	23.84%	5.06%	28.51%	1.59%	1.6267	1.6578	2.3766	-3.8270	1.7921	-2.8248	0.0712	0.0021	28.8479	38.7170	42.1542	40.4963	37.8121	40.4963	1879.37	1885.29	0.2613	0.0339	0.2617	0.0333	38.1907	41.1811
24.5	24.97%	5.03%	29.61%	1.58%	1.6297	1.6549	2.3793	-3.8574	1.7915	-2.8332	0.0697	0.0022	28.9006	38.7535	42.2114	40.5678	37.8413	40.5678	1888.89	1895.79	0.2726	0.0336	0.2729	0.0331	38.2542	41.2559
25.0	25.95%	5.13%	30.67%	1.62%	1.6300	1.6546	2.4759	-3.8574	1.8168	-2.8192	0.0724	0.0023	28.9058	38.7900	42.2114	40.6392	37.8778	40.6392	1896.66	1903.28	0.2826	0.0344	0.2831	0.0338	38.3153	41.3103
25.5	27.07%	5.15%	31.83%	1.63%	1.6326	1.6519	2.4980	-3.8049	1.8530	-2.7940	0.0721	0.0025	28.9531	38.7754	42.2686	40.7821	37.9872	40.7821	1904.10	1909.71	0.2941	0.0345	0.2945	0.0339	38.3490	41.3749
26.0	28.23%	5.12%	33.01%	1.64%	1.6305	1.6541	2.5449	-3.8712	1.8952	-2.7463	0.0728	0.0024	28.9147	38.8630	42.3543	40.7821	37.9507	40.7821	1906.47	1911.48	0.3057	0.0345	0.3062	0.0338	38.3903	41.4400
26.5	28.93%	5.23%	33.84%	1.73%	1.6284	1.6561	2.5863	-3.7277	1.9689	-2.6901	0.0754	0.0025	28.8781	38.8630	42.3257	40.7821	38.0456	40.7821	1910.43	1914.80	0.3132	0.0356	0.3139	0.0348	38.4369	41.4682
27.0	29.48%	5.21%	34.49%	1.72%	1.6308	1.6537	2.7933	-3.8574	1.9814	-2.7298	0.0754	0.0025	28.9212	38.9360	42.4972	40.9251	38.1697	40.9251	1921.61	1926.12	0.3193	0.0354	0.3198	0.0346	38.5088	41.5340
27.5	30.37%	5.04%	35.38%	1.64%	1.6332	1.6513	2.6415	-3.7608	2.0351	-2.6712	0.0722	0.0024	28.9641	39.0381	42.5544	41.0680	38.2500	41.0680	1929.93	1934.78	0.3282	0.0341	0.3287	0.0334	38.5619	41.6074
28.0	31.04%	5.09%	36.09%	1.66%	1.6311	1.6534	2.7519	-3.7470	2.1642	-2.6064	0.0734	0.0023	28.9265	39.0819	42.5687	41.0680	38.2062	41.0680	1933.01	1938.04	0.3350	0.0345	0.3357	0.0338	38.6120	41.6606
28.5	32.09%	4.99%	37.05%	1.61%	1.6291	1.6554	2.8954	-3.6945	2.2939	-2.5738	0.0719	0.0022	28.8908	39.1841	42.6116	41.1252	38.2208	41.1252	1939.20	1944.48	0.3450	0.0337	0.3457	0.0330	38.6898	41.7521
29.0	33.55%	4.92%	38.34%	1.59%	1.6315	1.6530	3.0554	-3.7470	2.4364	-2.5473	0.0717	0.0020	28.9340	39.1914	42.7831	41.2109	38.3521	41.2109	1950.03	1956.68	0.3587	0.0333	0.3595	0.0326	38.7714	41.8478
29.5	35.10%	4.94%	39.79%	1.57%	1.6339	1.6507	3.3811	-3.6835	2.6163	-2.4912	0.0700	0.0020	28.9752	39.3592	42.9546	41.2967	38.4251	41.2967	1961.44	1967.07	0.3739	0.0332	0.3744	0.0326	38.8408	41.9479
30.0	36.54%	4.98%	41.19%	1.59%	1.6320	1.6526	3.7315	-3.7194	2.8355	-2.4138	0.0710	0.0018	28.9412	39.4103	43.0689	41.3538	38.4616	41.3538	1965.81	1971.74	0.3880	0.0335	0.3887	0.0329	38.9023	42.0234
30.5	37.97%	4.87%	42.62%	1.49%	1.6321	1.6524	3.8419	-3.7608	2.8999	-2.4425	0.0700	0.0018	28.9445	39.4833	43.2833	41.2824	38.5346	41.2824	1972.22	1978.00	0.4022	0.0326	0.4029	0.0318	38.9550	42.0879
31.0	39.34%	4.91%	44.01%	1.49%	1.6304	1.6541	3.8226	-3.7939	2.8878	-2.4663	0.0717	0.0017	28.9132	39.5344	43.2404	41.5825	38.5711	41.5825	1976.86	1983.19	0.4158	0.0329	0.4167	0.0320	39.0160	42.1424
31.5	40.67%	4.88%	45.34%	1.48%	1.6325	1.6520	3.8005	-3.8298	2.8830	-2.4842	0.0706	0.0016	28.9513	39.6292	43.1404	41.4968	38.6805	41.4968	1988.03	1993.39	0.4293	0.0325	0.4301	0.0318	39.0792	42.2020
32.0	41.71%	4.94%	46.50%	1.49%	1.6346	1.6500	3.8336	-3.8822	2.8994	-2.4969	0.0714	0.0016	28.9875	39.6803	43.2404	41.5254	38.7462	41.5254	1996.04	2002.44	0.4402	0.0329	0.4411	0.0321	39.1334	42.2524
32.5	42.71%	4.88%	47.53%	1.46%	1.6327	1.6518	3.8419	-3.8850	2.9015	-2.5182	0.0704	0.0016	28.9549	39.6657	43.4262	41.4968	38.7535	41.4968	2001.08	2007.66	0.4504	0.0325	0.4512	0.0317	39.1974	42.3255
33.0	43.87%	4.75%	48.59%	1.41%	1.6310	1.6536	3.8226	-3.8822	2.9072	-2.5427	0.0688	0.0015	28.9237	39.8555	43.4119	41.5825	38.8338	41.5825	2006.42	2012.39	0.4615	0.0316	0.4623	0.0308	39.2562	42.3922
33.5	45.13%	4.63%	49.72%	1.37%	1.6330	1.6515	3.7867	-3.8988	2.8944	-2.5728	0.0658	0.0015	28.9593	39.8847	43.6406	41.7112	38.8630	41.7112	2015.54	2021.42	0.4736	0.0307	0.4743	0.0300	39.3160	42.4848
34.0	46.15%	4.77%	50.73%	1.43%	1.6349	1.6496	3.7784	-4.0036	2.8972	-2.6041	0.0689	0.0015	28.9933	39.9139	43.6406	41.7540	38.9506	41.7540	2024.70	2033.20	0.4836	0.0318	0.4844	0.0310	39.3916	42.5469
34.5	47.65%	4.59%	52.02%	1.37%	1.6332	1.6514	3.7453	-4.0091	2.9039	-2.6344	0.0661	0.0014	28.9625	40.1036	43.8550	41.7826	38.8995	41.7826	2029.94	2036.94	0.4976	0.0305	0.4984	0.0298	39.4473	42.6448
35.0	48.81%	4.78%	53.18%	1.43%	1.6315	1.6531	3.7674	-4.0588	2.9139	-2.6579	0.0697	0.0015	28.9326	40.1182	43.9265	42.0399	39.0089	42.0399	2035.23	2042.65	0.5091	0.0319	0.5100	0.0311	39.5132	42.7191
35.5	50.14%	4.79%	54.44%	1.43%	1.6334	1.6511	3.8005	-4.0781	2.9330	-2.6725	0.0704	0.0015	28.9664	40.2496	43.9979	41.9970	39.0089	41.9970	2044.65	2053.74	0.5220	0.0319	0.5229	0.0311	39.5881	42.8141
36.0	51.17%	4.87%	55.49%	1.43%	1.6335	1.6511	3.7867	-4.0919	2.9457	-2.6947	0.0684	0.0015	28.9678	40.3225	44.0694	41.9255	39.1184	41.9255	2053.16	2061.04	0.5327	0.0321	0.5333	0.0315	39.6487	42.8856
36.5	52.56%	4.76%	56.79%	1.38%	1.6353	1.6492	3.7784	-4.1030	2.9594	-2.7184	0.0682	0.0014	29.0002	40.4101	44.0980	42.0399	39.0965	42.0399	2061.32	2071.34	0.5460	0.0314	0.5467	0.0307	39.7131	42.9440
37.0	53.77%	4.74%	57.94%	1.40%	1.6336	1.6509	3.7867	-4.1471	2.9767	-2.7477	0.0690	0.0013	28.9706	40.4320	44.2838	42.0685	39.1549	42.0685	2068.25	2075.68	0.5577	0.0315	0.5585	0.0307	39.7669	43.0052
37.5	54.93%	4.69%	59.07%	1.37%	1.6320	1.6526	3.8005	-4.2133	2.9884	-2.7666	0.0686	0.0012	28.9415	40.6145	44.4410	42.2114	39.2425	42.2114	2072.36	2080.24	0.5691	0.0311	0.5700	0.0303	39.8241	43.0813
38.0	56.07%	4.65%	60.15%	1.34%	1.6338	1.6508	3.8281	-4.2023	3.0060	-2.7891	0.0663	0.0012	28.9733	40.6510	44.4982	42.2114	39.3008	42.2114	2079.89	2088.51	0.5804	0.0306	0.5811	0.0299	39.8760	43.1536
38.5	57.10%	4.67%	61.18%	1.34%	1.6355	1.6490	3.9771	-4.2244	3.0198	-2.8117	0.0674	0.0011	29.0042	40.7312	44.6697	42.2114	39.3592	42.2114	2088.92	2098.17	0.5906	0.0308	0.5914	0.0301	39.9368	43.2180
39.0	57.95%	4.71%	62.05%	1.34%	1.6339	1.6507	3.9799	-4.2575	3.0343	-2.8281	0.0666	0.0011	28.9750	40.7969	44.6411	42.2114	39.4103	42.2114	2095.14	2105.15	0.5993	0.0309	0.6000	0.0302	40.0105	43.2934
39.5	58.81%	4.71%	62.88%	1.35%	1.6322	1.6523	3.8888	-4.2906	3.0573	-2.8536	0.0678	0.0011	28.9462	40.9356	44.7269	42.2686	39.4468	42.2686	2103.21	2113.63	0.6076	0.0311	0.6084	0.0303	40.0916	43.3473

Effects of long-term heat exposure on self-contained self-rescuers

Time sec	Exp O2 percent	Exp CO2 percent	Ins O2 percent	Ins CO2 percent	Exp Vol liters	Ins Vol liters	Exp Pk Prs cm H2O	Ins Pk Prs cm H2O	Exp Av Prs cm H2O	Ins Av Prs cm H2O	Exp CO2 Pk liters	Ins CO2Min liters	VE Stpd liers/min	sWB EndT C	sDB EndT C	pDB EndT C	pWB EndT C	pDB EndT C	ExpH2OVapr	InsH2OVapr	uthO2TAv	th CO2TAv	uthO2VAv	th CO2VAv	sWBAvgTp C	sDBAvgTp C
40.0	59.59%	4.68%	63.66%	1.33%	1.6340	1.6506	4.0765	-4.2713	3.0780	-2.8659	0.0679	0.0011	28.9766	40.9429	44.7840	42.3543	39.4468	42.3543	2109.46	2118.27	0.6154	0.0309	0.6162	0.0301	40.1160	43.4029
40.5	59.97%	4.81%	64.17%	1.38%	1.6356	1.6489	4.3304	-4.3127	3.0991	-2.8797	0.0695	0.0012	29.0064	40.9064	44.9555	42.3829	39.4176	42.3829	2113.93	2124.97	0.6199	0.0317	0.6207	0.0309	40.1509	43.4300
41.0	60.46%	4.71%	64.62%	1.35%	1.6340	1.6505	4.0903	-4.3403	3.1224	-2.8954	0.0690	0.0010	28.9773	41.0158	44.9269	42.4258	39.5198	42.4258	2116.58	2126.29	0.6245	0.0311	0.6254	0.0303	40.1858	43.5109
41.5	60.86%	4.64%	65.01%	1.31%	1.6340	1.6505	4.2145	-4.3679	3.1331	-2.9129	0.0678	0.0010	28.9777	41.0523	44.9269	42.4258	39.4468	42.4258	2119.96	2130.24	0.6285	0.0306	0.6294	0.0297	40.2159	43.5326
42.0	61.14%	4.66%	65.32%	1.30%	1.6324	1.6521	4.0765	-4.4231	3.1388	-2.9462	0.0669	0.0010	28.9487	41.1107	45.1270	42.5544	39.5344	42.5544	2122.08	2132.31	0.6316	0.0305	0.6323	0.0298	40.2537	43.5977
42.5	61.54%	4.61%	65.66%	1.29%	1.6340	1.6505	4.1455	-4.4231	3.1505	-2.9665	0.0676	0.0009	28.9781	41.1983	45.1413	42.6402	39.5563	42.6402	2131.87	2141.70	0.6352	0.0303	0.6360	0.0295	40.3131	43.6670
43.0	61.95%	4.56%	66.02%	1.26%	1.6357	1.6488	4.0102	-4.4341	3.1661	-2.9860	0.0660	0.0009	29.0074	41.3151	45.2414	42.6687	39.6511	42.6687	2139.77	2151.82	0.6391	0.0299	0.6399	0.0291	40.3816	43.7705
43.5	62.51%	4.39%	66.38%	1.24%	1.6341	1.6505	3.7867	-4.5335	3.0419	-3.0572	0.0626	0.0009	28.9784	41.4537	45.4986	42.8545	39.7022	42.8545	2154.13	2163.17	0.6439	0.0288	0.6445	0.0281	40.4983	43.9505
44.0	62.77%	4.49%	66.76%	1.18%	1.6324	1.6521	4.0323	-4.5335	3.1937	-3.0283	0.0623	0.0008	28.9496	41.4610	45.4129	42.7831	39.6511	42.7831	2153.26	2164.88	0.6472	0.0289	0.6477	0.0283	40.5250	43.9507
44.5	62.95%	4.60%	66.98%	1.23%	1.6341	1.6505	4.1731	-4.5473	3.2093	-3.0514	0.0652	0.0007	28.9786	41.6362	45.6416	42.8545	39.7387	42.8545	2164.38	2175.94	0.6490	0.0298	0.6496	0.0292	40.5955	44.0220
45.0	63.32%	4.54%	67.27%	1.21%	1.6357	1.6488	4.0213	-4.6107	3.2194	-3.0844	0.0656	0.0007	29.0078	41.6945	45.8131	42.9546	39.8263	42.9546	2174.14	2187.76	0.6522	0.0295	0.6529	0.0287	40.6738	44.1179
45.5	63.74%	4.46%	67.62%	1.16%	1.6341	1.6504	3.9937	-4.6300	3.2210	-3.1112	0.0636	0.0007	28.9789	41.7821	45.9274	42.9260	39.8847	42.9260	2182.35	2195.48	0.6562	0.0288	0.6568	0.0281	40.7545	44.2185
46.0	64.10%	4.43%	67.92%	1.15%	1.6324	1.6521	4.0434	-4.6438	3.2356	-3.1343	0.0632	0.0005	28.9499	41.8697	45.9274	43.0118	39.9723	43.0118	2191.54	2206.32	0.6595	0.0286	0.6601	0.0279	40.8579	44.3298
46.5	64.42%	4.45%	68.22%	1.15%	1.6341	1.6504	4.2007	-4.6852	3.2470	-3.1588	0.0634	0.0005	28.9789	42.0740	46.1418	43.0689	40.0671	43.0689	2204.00	2220.67	0.6626	0.0287	0.6632	0.0280	40.9532	44.4298
47.0	64.67%	4.50%	68.48%	1.16%	1.6341	1.6504	4.0627	-4.6990	3.2588	-3.1888	0.0634	0.0004	28.9790	42.1105	46.2847	43.2119	40.1036	43.2119	2212.37	2229.01	0.6652	0.0289	0.6657	0.0283	41.0207	44.5152
47.5	65.09%	4.40%	68.81%	1.12%	1.6357	1.6488	4.1096	-4.7432	3.2778	-3.2085	0.0614	0.0003	29.0081	42.2492	46.4419	43.2404	40.1766	43.2404	2225.57	2242.48	0.6690	0.0282	0.6695	0.0276	41.1120	44.6367
48.0	65.40%	4.42%	69.13%	1.10%	1.6341	1.6504	4.0765	-4.7680	3.2875	-3.2403	0.0620	0.0003	28.9791	42.3295	46.4991	43.3548	40.2131	43.3548	2232.48	2249.94	0.6721	0.0282	0.6726	0.0276	41.1880	44.7203
48.5	65.61%	4.47%	69.34%	1.12%	1.6325	1.6521	4.1096	-4.7873	3.3072	-3.2637	0.0636	0.0003	28.9501	42.4535	46.6706	43.5263	40.2934	43.5263	2241.73	2259.56	0.6742	0.0286	0.6747	0.0280	41.2815	44.8269
49.0	65.85%	4.48%	69.55%	1.14%	1.6341	1.6504	4.2420	-4.8508	3.3170	-3.2846	0.0635	0.0001	28.9789	42.6943	46.8564	43.4262	40.3225	43.4262	2257.48	2274.37	0.6764	0.0287	0.6770	0.0281	41.3792	44.9339
49.5	66.19%	4.40%	69.79%	1.11%	1.6357	1.6488	4.1317	-4.8867	3.3383	-3.3128	0.0623	0.0001	29.0080	42.6870	46.8421	43.6406	40.4101	43.6406	2266.81	2285.87	0.6793	0.0282	0.6799	0.0275	41.4557	45.0518
50.0	66.32%	4.46%	69.96%	1.13%	1.6341	1.6504	4.1731	-4.9474	3.3549	-3.3398	0.0632	0.0002	28.9789	42.7308	47.1423	43.8550	40.3955	43.8550	2273.88	2293.93	0.6809	0.0286	0.6814	0.0279	41.5359	45.1413
50.5	66.50%	4.47%	70.08%	1.16%	1.6324	1.6521	4.1537	-4.9860	3.3671	-3.3693	0.0645	0.0002	28.9498	42.9206	47.1280	43.8693	40.5269	43.8693	2283.73	2304.38	0.6822	0.0288	0.6829	0.0281	41.6334	45.2426
51.0	66.66%	4.48%	70.26%	1.13%	1.6341	1.6505	4.1731	-5.0026	3.3792	-3.3900	0.0630	0.0002	28.9787	42.9498	47.2852	43.8550	40.5050	43.8550	2294.79	2315.59	0.6841	0.0287	0.6846	0.0281	41.7060	45.3503
51.5	66.88%	4.45%	70.45%	1.11%	1.6357	1.6488	4.1869	-5.0302	3.3925	-3.4211	0.0615	0.0001	29.0077	43.0373	47.4138	43.8121	40.6437	43.8121	2308.07	2329.89	0.6862	0.0283	0.6866	0.0278	41.7955	45.4340
52.0	67.15%	4.36%	70.60%	1.09%	1.6341	1.6505	4.2696	-5.0854	3.4099	-3.4454	0.0617	0.0001	28.9785	43.2417	47.5711	44.0694	40.7604	44.0694	2319.59	2340.71	0.6883	0.0279	0.6888	0.0273	41.8976	45.5577
52.5	67.29%	4.39%	70.72%	1.11%	1.6341	1.6505	4.2145	-5.1130	3.4239	-3.4683	0.0624	0.0001	28.9784	43.3512	47.5711	44.1409	40.7969	44.1409	2333.81	2353.89	0.6895	0.0282	0.6900	0.0275	41.9983	45.6718
53.0	67.50%	4.37%	70.89%	1.11%	1.6324	1.6521	4.1979	-5.1516	3.4411	-3.4899	0.0614	0.0001	28.9490	43.4460	47.8140	44.2123	40.8772	44.2123	2343.36	2365.49	0.6914	0.0280	0.6920	0.0274	42.1020	45.7696
53.5	67.56%	4.48%	71.00%	1.13%	1.6340	1.6505	4.2145	-5.1958	3.4497	-3.5208	0.0634	0.0000	28.9780	43.6066	47.8569	44.2123	40.9429	44.2123	2357.61	2381.69	0.6923	0.0287	0.6928	0.0281	42.2034	45.8598
54.0	67.80%	4.43%	71.14%	1.14%	1.6357	1.6489	4.2310	-5.2289	3.4696	-3.5446	0.0642	0.0001	29.0071	43.6796	48.1570	44.3838	40.9939	44.3838	2371.19	2396.79	0.6940	0.0285	0.6947	0.0278	42.2994	45.9697
54.5	67.95%	4.45%	71.30%	1.14%	1.6340	1.6505	4.3248	-5.2510	3.4852	-3.5733	0.0646	0.0000	28.9778	43.8620	48.2142	44.4267	41.0888	44.4267	2380.76	2406.12	0.6956	0.0286	0.6962	0.0279	42.3890	46.0796
55.0	68.08%	4.48%	71.41%	1.14%	1.6324	1.6522	4.4628	-5.2841	3.4977	-3.5923	0.0627	0.0001	28.9482	43.9423	48.3857	44.5553	41.1691	44.5553	2392.44	2418.61	0.6970	0.0287	0.6974	0.0281	42.5015	46.2095
55.5	68.23%	4.47%	71.51%	1.15%	1.6340	1.6505	4.2834	-5.3337	3.5151	-3.6210	0.0641	0.0000	28.9772	44.1539	48.5001	44.6411	41.2713	44.6411	2407.07	2435.77	0.6981	0.0288	0.6987	0.0281	42.6087	46.3111
56.0	68.27%	4.52%	71.57%	1.16%	1.6356	1.6489	4.3745	-5.3282	3.5339	-3.6468	0.0638	0.0001	29.0065	44.1466	48.6144	44.7269	41.2567	44.7269	2418.92	2446.10	0.6987	0.0290	0.6992	0.0284	42.6709	46.4077
56.5	68.41%	4.49%	71.68%	1.14%	1.6340	1.6506	4.3110	-5.3751	3.5467	-3.6751	0.0624	0.0001	28.9770	44.2999	48.7859	44.7840	41.3442	44.7840	2427.92	2456.31	0.7000	0.0287	0.7004	0.0281	42.7654	46.5162
57.0	68.55%	4.44%	71.74%	1.14%	1.6323	1.6522	4.3635	-5.4055	3.5660	-3.6956	0.0634	0.0001	28.9473	44.3510	48.7859	44.8412	41.4026	44.8412	2435.48	2464.14	0.7009	0.0286	0.7014	0.0279	42.8438	46.6178
57.5	68.61%	4.43%	71.79%	1.14%	1.6339	1.6506	4.3938	-5.4441	3.5845	-3.7299	0.0648	0.0000	28.9765	44.4458	49.0718	44.8555	41.5267	44.8555	2453.06	2482.19	0.7014	0.0286	0.7020	0.0279	42.9534	46.7042
58.0	68.65%	4.41%	71.82%	1.12%	1.6339	1.6506	4.3938	-5.4441	3.5978	-3.7576	0.0621	0.0000	28.9762	44.7013	49.1432	44.8555	41.5632	44.8555	2463.99	2493.55	0.7019	0.0282	0.7024	0.0276	43.0383	46.8090
58.5	68.63%	4.46%	71.79%	1.15%	1.6356	1.6489	4.4297	-5.5380	3.6174	-3.7868	0.0629	0.0000	29.0056	44.7013	49.1289	45.1270	41.5778	45.1270	2478.96	2509.02	0.7017	0.0286	0.7021	0.0281	43.1323	46.9111
59.0	68.71%	4.40%	71.83%	1.12%	1.6339	1.6506	4.5042	-5.5959	3.6330	-3.8130	0.0628	0.0000	28.9757	44.9567	49.3576	45.2843	41.7091	45.2843	2488.53	2518.47	0.7022	0.0282	0.7027	0.0276	43.2187	46.9993
59.5	68.57%	4.51%	71.72%	1.18%	1.6322	1.6523	4.4518	-5.5821	3.6525	-3.8500	0.0642	0.0000	28.9457	44.9056	49.3576	45.1842	41.7821	45.1842	2495.48	2528.07	0.7009	0.0291	0.7014	0.0284	43.3080	47.1031
60.0	68.54%	4.49%	71.64%	1.19%	1.6339	1.6507	4.4904	-5.6511	3.6730	-3.8769	0.0646	0.0000	28.9750	45.1026	49.6434	45.2843	41.8551	45.2843	2507.92	2545.00	0.7003	0.0291	0.7009	0.0284	43.4095	47.1974
60.5	68.47%	4.50%	71.58%	1.18%	1.6355	1.6490	4.5511	-5.6925	3.6976	-3.9131	0.0650	0.0000	29.0045	45.1975	49.7006	45.3557	41.8989	45.3557	2526.53	2559.37	0.6997	0.0291	0.7002	0.0284	43.4956	47.3032
61.0	68.39%	4.50%	71.48%	1.18%	1.6338	1.6507	4.6146	-5.7477	3.7155	-3.9545	0.0638	0.0000	28.9744	45.3216	49.9293	45.4986	42.0375	45.4986	2538.91	2571.37	0.6989	0.0290	0.6994	0.0284	43.6003	47.4157
61.5	68.25%	4.51%	71.34%	1.18%	1.6321	1.6524	4.8160	-5.8139	3.7441	-3.9815	0.0646	0.0000	28.9439	45.4310	49.8721	45.5844	42.1324	45.5844	2546.76	2581.29	0.6975	0.0291	0.6980	0.0285	43.6891	47.5021
62.0	68.07%	4.54%	71.20%	1.16%	1.6338	1.6508	4.6008	-5.8719	3.7683	-4.0292	0.0635	0.0000	28.9734	45.5405	50.1437	45.6416	42.2200	45.6416	2560.88	2596.16	0.6960	0.0290	0.6964	0.0285	43.7740	47.5780
62.5	67.89%	4.55%	70.98%	1.20%	1.6355	1.6491	4.6394	-5.9353	3.7972	-4.0731	0.0652	0.0000	29.0033	45.6354	50.2151	45.6416	42.1908	45.6416	2578.34	2613.00	0.6939	0.0294	0.6944	0.0288	43.8712	47.6611
63.0	67.61%	4.59%	70.74%	1.20%	1.6337	1.6508	4.6836	-5.9547	3.8317	-4.1152	0.0642	0.0000	28.9726	45.7594	50.2151	45.7130	42.2565	45.7130	2587.43	2622.29	0.6914	0.0295	0.6917	0.0289	43.9553	47.7450
63.5	67.43%	4.55%	70.52%	1.20%	1.6337	1.6508	4.7250	-6.0512	3.8653	-4.1539	0.0651	0.0000	28.9722	45.7594	50.2151	45.8560	42.3659	45.8560	2592.88	2630.28	0.6893	0.0293	0.6897	0.0287	44.0120	47.8072
64.0	67.08%	4.57%	70.18%	1.22%	1.6320	1.6526	4.7829	-6.1230	3.9015	-4.1998	0.0660	0.0000	28.9413	45.8397	50.4438	45.8702	42.3951	45.8702	2597.07	2632.40	0.6858	0.0296	0.6863	0.0289	44.0496	47.8687
64.5	66.57%	4.62%	69.75%	1.21%	1.6336	1.6509	4.8492	-6.1340	3.9442	-4.2481	0.0660	0.0001	28.9712	45.8689	50.5010	45.7845	42.3659	45.7845	2605.82	2642.41	0.6812	0.0298	0.6816	0.0291	44.1012	47.9283
65.0	66.01%	4.62%	69.21%	1.23%	1.6353	1.6492	4.9154	-6.2223	3.9955	-4.2935	0.0661	0.0001	29.0013	45.9857	50.4438	45.9274	42.4243	45.9274	2616.17	2652.11	0.6757	0.0299	0.6761	0.0292	44.1514	47.9942
65.5	65.37%	4.59%	68.63%	1.18%	1.6336	1.6509	5.0009	-6.2996	4.0464	-4.3490	0.0639	0.0001	28.9700	46.0514	50.7154	45.9274	42.4024	45.9274	2617.61	2654.51	0.6697	0.0293	0.6700	0.0288	44.1869	48.0223
66.0	64.43%	4.64%	67.78%	1.21%	1.6318	1.6527	5.0479	-6.3769	4.0921	-4.4101	0.0660	0.0001	28.9380	46.0732	50.6725	46.0989	42.5411	46.0989	2619.46	2656.34	0.6607	0.0299	0.6611	0.0292	44.2196	48.0532
66.5	63.45%	4.62%	66.81%	1.22%	1.6335	1.6511	5.1113	-6.4790	4.1533	-4.4750	0.0672	0.0001	28.9679	46.1608	50.7868	45.9989	42.4754	45.9989	2625.75	2662.40	0.6508	0.0299	0.6513	0.0292	44.2507	48.1458
67.0	62.28%	4.68%	65.73%	1.24%	1.6352	1.6493	5.2024	-6.5314	4.2081	-4.5443	0.0675	0.0001	28.9984	46.1316	50.7868	45.9846	42.4827	45.9846	2629.38	2668.20	0.6397	0.0303	0.6401	0.0296	44.2717	48.1688
67.5	61.09%	4.68%	64.60%	1.22%	1.6333	1.6512	5.2631	-6.6446	4.2658	-4.6188	0.0678	0.0001	28.9659	46.2338	50.9298	45.9989	42.4754	45.9989	2636.85	2674.62	0.6280	0.0302	0.6284	0.0295	44.3316	48.1917
68.0	60.07%	4.50%	63.45%	1.18%	1.6315	1.6531	5.3238	-6.8074	4.3044	-4.6974	0.0640	0.0001	28.9323	46.3360	50.8440	46.0989	42.5411	46.0989	2641.22	2681.00	0.6173	0.0290	0.6176	0.0284	44.3957	48.2471
68.5	58.96%	4.51%	62.32%	1.17%	1.6332	1.6514	5.3459	-6.9205	4.3158	-4.8039	0.0645	0.0001	28.9626	46.5257	51.2156	46.2133	42.5849	46.2133	2653.44	2696.82	0.6060	0.0290	0.6064	0.0284	44.4927	48.4022
69.0	58.21%	4.48%	61.44%	1.18%	1.6349	1.6496	5.3680	-7.0833	4.2656	-4.9811	0.0649	0.0001	28.9939	46.5403	51.3014	46.3848	42.7162	46.3848	2675.95	2716.53	0.5978	0.0290	0.5983	0.0283	44.6007	48.4596
69.5	57.54%	4.48%	60.66%	1.18%	1.6330	1.6515	5.3459	-7.1689	4.2081	-5.1424	0.0635	0.0001	28.9599	46.8541	51.4300	46.4991	42.8403	46.4991	2695.85	2743.44	0.5906	0.0289	0.5910	0.0283	44.8012	48.6321
70.0	56.87%	4.51%	59.96%	1.20%	1.6330	1.6516	5.3873	-7.3069	4.1662	-5.3094	0.0653	0.0002	28.9590	46.8541	51.5015	46.4991	42.8768	46.4991	2704.30	2746.03	0.5837	0.0293	0.5841	0.0285	44.8270	48.7136
70.5	56.21%	4.56%	59.27%	1.20%	1.6310	1.6535	5.4121	-7.5249	4.1349	-5.4705	0.0659	0.0003	28.9245	46.9782	51.5872	46.4991	42.9498	46.4991	2715.77	2758.07	0.5769	0.0295	0.5774	0.0288	44.9339	48.8437
71.0	55.66%	4.45%	58.61%	1.18%	1.6328	1.6517	5.4977	-7.7484	4.1342	-5.6415	0.0647	0.0003	28.9565	47.1460	51.7873	46.7135	43.0228	46.7135	2734.48	2778.41	0.5709	0.0289	0.5714	0.0282	45.0452	48.9148
71.5	54.91%	4.52%	57.89%	1.18%	1.6347	1.6499	5.5887	-7.9554	4.1671	-5.7784	0.0638	0.0004	28.9890	47.2409	51.9302	46.7278	43.1249	46.7278	2755.34	2798.88	0.5637	0.0291	0.5640	0.0285	45.1630	49.0444
72.0	54.04%	4.67%	57.05%	1.26%	1.6327	1.6519	5.6908	-8.1761	4.2010	-5.9516	0.0670	0.0005	28.9539	47.4015	52.0732	46.8564	43.2052	46.8564	2766.89	2812.43	0.5549	0.0304	0.5554	0.0297	45.2732	49.1323
72.5	53.47%	4.55%	56.37%	1.22%	1.6307	1.6539	5.7874	-8.4300	4.2684	-6.1329	0.0659	0.0006	28.9184	47.5328	52.2161	46.8993	43.2709	46.8993	2774.11	2818.59	0.5487	0.0296	0.5492	0.0288	45.3387	49.2072
73.0	52.56%	4.66%	55.49%	1.26%	1.6325	1.6520	5.9944	-8.6177	4.3502	-6.3140	0.0664	0.0007	28.9511	47.6569	52.2161	46.9279	43.3876	46.9279	2789.43	2836.12	0.5398	0.0303	0.5402	0.0296	45.4323	49.2853
73.5	51.85%	4.60%	54.68%	1.27%	1.6344	1.6501	6.1296	-8.8384	4.4363	-6.4986	0.0677	0.0009	28.9846	47.7664	52.2733	47.0136	43.3876	47.0136	2809.38	2855.27	0.5321	0.0302	0.5327	0.0294	45.5348	49.3694
74.0	50.93%	4.66%	53.77%	1.28%	1.6324	1.6522	6.2841	-9.0316	4.5434	-6.6789	0.0669	0.0010	28.9483	47.8758	52.3590	47.1423	43.5336	47.1423	2823.72	2872.30	0.5230	0.0304	0.5235	0.0297	45.6675	49.4757
74.5	50.04%	4.65%	52.78%	1.31%	1.6302	1.6543	6.4608	-9.2910	4.6617	-6.8701	0.0674	0.0011	28.9107	47.9707	52.5019	47.1852	43.5920	47.1852	2835.15	2882.77	0.5135	0.0306	0.5141	0.0298	45.7585	49.5459
75.0	48.98%	4.70%	51.74%	1.34%	1.6321	1.6524	6.6705	-9.5559	4.7842	-7.0610	0.0687	0.0013	28.9440	48.1312	52.5019	47.2137	43.6431	47.2137	2854.30	2903.82	0.5030	0.0310	0.5036	0.0302	45.8713	49.6302
75.5	48.01%	4.79%	50.77%	1.37%	1.6320	1.6525	6.8223	-9.7767	4.9137	-7.2365	0.0688	0.0016	28.9421	48.2407	52.7163	47.2852	43.7525	47.2852	2867.39	2915.07	0.4934	0.0316	0.4939	0.0308	45.9487	49.7281
			71.83%	4.11%			6.8223	-2.3258																		
			22.28%	0.40%			2.0206	-10.8667																		
			52.48%	1.31%																						

the value of -10.8667 at 9.5 min was ingnored because the device went

Effects of long-term heat expsoure on self-contained self-rescuers

Time sec	Exp O2 percent	Exp CO2 percent	Ins O2 percent	Ins CO2 percent	Exp Vol liters	Ins Vol liters	Exp Pk Prs cm H2O	Ins Pk Prs cm H2O	Exp Av Prs cm H2O	Ins Av Prs cm H2O	xp CO2 Pk liters	ns CO2Min liters	VE Stpd liers/min	sWB EndT C	sDB EndT C	pDB EndT C	pWB EndT C	pDB EndT C	ExpH2OVapr	InsH2OVapr	uthO2TAvt	h CO2TAvt	uthO2VAvt	h CO2VAvt	sWBAvgTp C	sDBAvgTp C
0.0	0.00%	0.00%	0.00%	0.00%	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.00	0.00	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.5	26.02%	2.49%	25.84%	1.74%	1.9741	1.6596	0.4117	-0.5045	0.0685	-0.2330	0.0382	0.0093	25.7511	24.9310	26.6801	34.0933	32.2073	34.0933	1093.27	1088.53	0.2422	0.0215	0.2593	0.0211	25.9987	27.7598
1.0	22.21%	1.01%	23.26%	0.56%	1.6491	1.6542	0.4228	-0.5376	0.1029	-0.2801	0.0140	0.0026	29.2456	30.6018	33.1214	33.9789	31.4484	33.9789	1191.19	1214.96	0.2279	0.0080	0.2273	0.0079	31.0365	33.4234
1.5	20.89%	1.51%	21.68%	0.22%	1.6379	1.6655	1.9378	-4.3541	1.3422	-3.2501	0.0197	-0.0009	29.0461	28.0622	32.2067	34.5649	31.7111	34.5649	1112.06	1138.63	0.2126	0.0088	0.2129	0.0087	30.2904	33.2965
2.0	18.95%	3.11%	20.48%	0.64%	1.6373	1.6661	2.3793	-4.5059	1.6615	-3.3662	0.0415	-0.0008	29.0358	28.9744	32.4211	34.7793	32.0395	34.7793	1127.51	1192.82	0.1971	0.0190	0.1971	0.0187	30.9183	33.5171
2.5	16.11%	4.35%	18.59%	0.95%	1.6326	1.6708	2.3766	-4.5224	1.6226	-3.4219	0.0562	-0.0008	28.9521	29.1714	32.7784	34.6650	32.0322	34.6650	1135.28	1197.75	0.1739	0.0267	0.1735	0.0265	31.0191	33.5949
3.0	14.26%	4.50%	17.10%	0.97%	1.6343	1.6691	2.3103	-4.6714	1.5388	-3.5558	0.0577	-0.0008	28.9822	29.2663	32.7784	34.6364	32.1125	34.6364	1136.70	1198.97	0.1572	0.0275	0.1568	0.0274	31.0293	33.6476
3.5	12.86%	4.57%	15.88%	1.00%	1.6368	1.6665	2.2993	-4.7211	1.5500	-3.6011	0.0578	-0.0008	29.0273	29.4342	33.0642	34.6650	32.2073	34.6650	1146.87	1208.74	0.1442	0.0280	0.1437	0.0279	31.1317	33.7614
4.0	11.69%	4.46%	14.79%	1.00%	1.6319	1.6715	2.3241	-4.8922	1.5040	-3.7555	0.0569	-0.0008	28.9396	29.4488	33.0642	34.6364	32.2219	34.6364	1150.33	1208.83	0.1329	0.0274	0.1324	0.0273	31.1896	33.8650
4.5	10.76%	4.33%	13.76%	1.00%	1.6263	1.6771	2.2441	-5.0854	1.3081	-4.1007	0.0550	-0.0007	28.8408	29.6093	33.3501	34.7793	32.2657	34.7793	1156.15	1212.43	0.1229	0.0267	0.1226	0.0266	31.2856	33.9553
5.0	9.09%	4.34%	11.71%	1.03%	1.6263	1.6771	2.0896	-5.8857	0.9873	-4.6872	0.0549	-0.0006	28.8403	29.8501	33.5645	34.7793	32.3679	34.7793	1171.13	1223.46	0.1033	0.0269	0.1040	0.0269	31.4240	34.0957
5.5	7.24%	4.56%	9.42%	1.74%	1.6274	1.6759	2.2551	-6.7411	0.8720	-3.5699	0.0537	0.0018	28.8607	30.9813	33.8074	34.9508	32.8787	34.9508	1255.44	1293.51	0.0836	0.0316	0.0833	0.0315	32.1217	34.2281
6.0	ABMS Failure at 6 minutes - water got into sensor - had to dry out and recalibrate							-2.5466	3.1864	-1.6192	0.0422	0.0003	28.8418	31.0543	33.7074	34.9937	33.0247	34.9937	1294.94	1303.32	0.1046	0.0238	0.1044	0.0242	32.2426	34.2923
6.5								-4.3900	2.3424	-3.0381	0.0480	-0.0003	28.7994	30.3683	33.9218	35.0652	32.6452	35.0652	1205.31	1253.00	0.1091	0.0241	0.1082	0.0242	31.7996	34.4344
7.0	Data from 6 minutes on is invalid							-4.4231	2.2486	-3.1502	0.0948	0.0219	28.7499	30.4705	34.2076	35.2796	32.7328	35.2796	1211.58	1259.53	0.0892	0.0537	0.0892	0.0539	31.9051	34.5401
7.5	7.14%	9.84%	10.44%	7.31%	1.6092	1.6942	2.7519	-4.6576	2.0228	-3.3824	0.1211	0.0494	28.5374	30.6894	34.2791	35.0652	32.7693	35.0652	1212.65	1258.80	0.0884	0.0870	0.0879	0.0858	32.0050	34.6185
8.0	6.99%	15.20%	8.78%	14.78%	1.6192	1.6841	3.1272	-3.2861	2.2676	-2.2231	0.1558	0.1172	28.7156	31.5651	34.3791	35.1223	32.9955	35.1223	1266.28	1313.39	0.0797	0.1485	0.0788	0.1499	32.4650	34.6556
8.5	10.11%	15.41%	15.04%	15.73%	1.6322	1.6712	6.4773	-2.8225	4.1622	-1.4721	0.1601	0.1469	28.9449	31.5651	34.2791	35.2796	33.0977	35.2796	1317.82	1331.85	0.1260	0.1552	0.1258	0.1557	32.5325	34.6193