SCOTT SAFETY

SEMS II

SCOTT ELECTRONIC MANAGEMENT SYSTEM
USER PERSONAL DISTRESS ALARM AND USER ACCOUNTABILITY SYSTEM
FOR THE SCOTT AIR-PAK X3 SELF-CONTAINED BREATHING APPARATUS

SEMS II CONSOLE ON AIR-PAK X3 SCBA

IMPERIUM ACCOUNTABILITY BASE STATION (SHOWN WITH REQUIRED PERSONAL COMPUTER, NOT INCLUDED)

PRELIMINARY DRAFT - NOT FOR PUBLICATION

WARNING

THE SCOTT SEMS II PERSONAL DISTRESS ALARM AND USER ACCOUNTABILITY SYSTEM IS INTENDED FOR USE WITH SCOTT SELF-CONTAINED BREATHING APPARATUS (SCBA) WHICH MAY SUPPORT HUMAN LIFE IN HAZARDOUS ATMOSPHERES. FAILURE TO CAREFULLY READ AND UNDERSTAND THE FOLLOWING INSTRUCTIONS MAY RESULT IN SERIOUS INJURY OR DEATH TO THE SCBA USER.

USE OF A RESPIRATOR INTEGRATED WITH THE SEMS II / BLUETOOTH USER ACCOUNTABILITY SYSTEM WILL REQUIRE MODIFICATION OF THE RESPIRATOR "REGULAR OPERATIONAL INSPECTION PROCEDURES" AND WILL REQUIRE TRAINING OF THE RESPIRATOR USER IN THE USE OF SUCH RESPIRATORS.

THE FOLLOWING INSTRUCTIONS SUPPLEMENT BUT DO NOT REPLACE THE OPERATING AND MAINTENANCE INSTRUCTIONS SUPPLIED WITH EACH RESPIRATOR.

WARNING

THIS PRODUCT IS DESIGNED AND INTENDED TO FUNCTION PROPERLY IN REASONABLE/ORDINARY FIREFIGHT-ING CONDITIONS. IT HAS BEEN CERTIFIED TO THE STANDARDS CONTAINED IN THE 2013 EDITION OF NFPA 1982. LIKE ALL EQUIPMENT, THE FUNCTIONALITY OF THIS PRODUCT MAY BE COMPROMISED BY EXTREME FIRE CONDITIONS.

P/N 595289-01 Rev B 5/15

SEMS II
SCOTT ELECTRONIC MANAGEMENT SYSTEM
PERSONAL DISTRESS ALARM AND BASE STATION

SEMS II CONTROL CONSOLE ASSEMBLY

SENSOR MODULE ASSEMBLY

X3 AIR-PAK SCBA WITH SEMS II DISTRESS ALARM ASSEMBLY

SYSTEM DESCRIPTION

SEMS II ACCOUNTABILITY SYSTEM

The SCOTT Electronic Management System (SEMS II) is a respirator user accountability system that provides communication between respirator users in a hazardous area and an incident commander or other designated person outside of the hazardous area. The SCOTT SEMS II Personal Distress Alarm (PDA) is an optional accessory. It is intended to be integrated only with a compatible SCOTT self-contained breathing apparatus (SCBA) such as the AIR-PAK SCBA. The installation of the SCOTT SEMS II Personal Distress Alarm is approved by the National Institute of Occupational Safety and Health (NIOSH) on specific models of SCOTT SCBA.

The complete SCOTT Emergency Management System (SEMS) consists of:

- The Personal Alert Safety System (PASS) on the SCBA to sound a loud alarm when the user is motionless for a short period of time;
- The IMPERIUM software with computer Base Station monitoring the status of SCBA users, including air supply levels, PASS activation, and evacuation calls.
  - Max. of 150 SCBAs using SEMS II
  - Max. of 50 SCBAs using *BLUETOOTH®* backup
- The PAK-TRACKER Locator System to locate the transmitted signal from a SEMS II Personal Distress Alarm (PDA) Portable Unit where PASS has been activated.

The complete IMPERIUM ACCOUNTABILITY SYSTEM consists of:

- Individual transmitting SEMS II (or SEMS II with a *BLUETOOTH* backup) enabled portable unit with Control Consoles integrated into to the SCOTT self-contained breathing apparatus;
- Programmable ID Tags and programming equipment, (Tags are available in a variety of forms);
- A Personal Computer (not included) with IMPERIUM software installed;
- Receiver(s) to capture transmitted SEMS II and *BLUETOOTH* signals to personal computer.

Refer to the SCOTT CONNECT IMPERIUM ACCOUNTABILITY BASE STATION SOFTWARE Installation and Use instructions, SCOTT P/N 595290-01, in the HELP directory of the IMPERIUM software for a complete listing of all equipment available for the IMPERIUM ACCOUNTABILITY SYESTEM. All items are sold separately.

SEMS II equipped PDA Portable Units provide a continuous limited two-way communication between the SCBA respirator control console and

WARNING

DO NOT OPERATE THIS EQUIPMENT WHILE UNDER THE INFLUENCE OF DRUGS, ALCOHOL, OR ANY MEDICATIONS OR SUBSTANCES WHICH MAY AFFECT VISION, DEXTERITY, OR JUDGMENT. USERS OF THIS EQUIPMENT MUST BE IN GOOD PHYSICAL AND MENTAL HEALTH IN ORDER TO OPERATE SAFELY. DO NOT USE THIS EQUIPMENT WHEN FATIGUE PREVENTS SAFE OPERATION. STAY ALERT WHEN OPERATING THIS EQUIPMENT. INATTENTION OR CARELESSNESS WHILE OPERATING THIS EQUIPMENT MAY RESULT IN SERIOUS INJURY OR DEATH.

NOTE

USE IN ACCORDANCE WITH NFPA 1500, "STANDARD ON FIRE DEPARTMENT OCCUPATIONAL SAFETY AND HEALTH PROGRAM."

the IMPERIUM software. When logged on, all the SEMS II PDA Portable Units communicate to the Base Station directly and/or through other logged on units forming a communications "mesh network" to the Base Station. This extends the range for the units furthest away from the Base Station. Because of this mesh network system, the signal strength of each user may change as the network constantly re-adjusts to the movement of the users.

SCBAs addtionally equipped with an optional *BLUETOOTH* backup communication, provide a limited one-way transmission from the control console to the Base Station at one minute intervals via a APX™ RF Modem/ Radio network. No information can be transmitted back to the respirator user when transmitting in *BLUETOOTH* mode.

In units equipped with both SEMS II and *BLUETOOTH*, the SEMS II is the primary mode of communication between the console and Base Station. *BLUETOOTH* will only transmit information via radio to the base station when the SEMS II is out of range or otherwise unable to link to the system. Once the SEMS II transmission has resumed, or the SCBA is turned off, the *BLUETOOTH* transmission will discontinue.

NOTE
SEMS II ENABLED PDA UNITS HAVE BIDIRECTIONAL COMMUNICATION CAPABILI-TIES AND CAN BOTH TRANSMIT AND RECEIVE DATA BETWEEN THE PDA AND THE BASE STATION. WHEN IN BLUETOOTH MODE, *BLUETOOTH* ENABLED PDA CONTROL CONSOLES ARE UNIDIRECTIONAL ONLY. THEY CAN SEND DATA TO THE BASE STATION THROUGH APPROVED *BLUETOOTH* ENABLED PORTABLE TWO-WAY RADIOS BUT CANNOT RECEIVE DATA BACK FROM THE BASE STATION.

No personal alert safety system, respirator, or combination of personal alert safety system and respirator, by themselves, can provide complete protection in dangerous situations. However, using an alarm and a respirator in accordance with the require-ments of an organized respiratory protection program is one of the many safety precautions which should be taken to avoid personal injury or death.

These instructions explain the operation and use of the main functions of the ac-countability system. Follow the REGULAR OPERATIONAL INSPECTION procedure as described. If any function fails to operate as described, do not use the equipment. Remove the unit from service and tag for repair by authorized personnel.

This system communicates only with Firefighter Resources (Respirator Users) using a SCOTT SCBA equipped with the SEMS II Accountability System integrated into the Personal Distress Alarm.

Complete training in the use of the SEMS II and Bluetooth equipment is required before actual use in a hazardous envirionment. If the equipment does not work as described in these instructions, remove the equipment from service and tag for repair by authorized personnel.

SEMS II PERSONAL DISTRESS ALARM CONTROL CONSOLE

The SCOTT SEMS II PDA Portable Unit, when added to a SCOTT SCBA respirator consists of a Sensor Module with battery compartment mounted to the bottom of the respirator backframe, a pressure gauge with transducer, and a Control Console mounted on the wearer's right shoulder strap at the pressure gauge location. The SEMS II PDA Portable Unit requires six (6) AA batteries to operate the Sensor Module on the backframe.

The SEMS II PDA Control Console is integrated into the SCOTT SCBA as a part of the remote air pressure gauge assembly which hangs over the right shoulder of the respirator user. The Control Console also operates the PERSONAL ALERT SAFETY SYSTEM (PASS) distress alarm intended to as-sist in locating a respirator user who is incapacitated or in need of assistance. The PASS distress alarm in this model reaches FULL ALARM in a total of 30 (thirty) seconds. The Control Console has a set of status lights, a dial air pres-sure gauge, and three control buttons which can easily be pressed with gloved hands. Power is supplied by batteries in the SEMS II PDA battery compartment on the SCBA backframe.

AIR-PAK X3 MODEL CONSOLE

SEMS II CONTROL CONSOLES

WARNING
NO PERSONAL ALERT SAFETY SYSTEM, RESPIRATOR OR COMBINATION OF PERSONAL ALERT SAFETY SYSTEM AND RESPIRATOR, BY THEMSELVES, CAN PROVIDE COMPLETE PROTECTION IN DANGEROUS SITUATIONS. FAILURE TO FOLLOW THE INSTRUCTIONS IN THIS MANUAL AND THE REQUIREMENTS OF AN ORGANIZED RESPIRATORY PROTECTION PROGRAM MAY LEAD TO SITUATIONS WHICH COULD RESULT IN SERIOUS INJURY OR DEATH.

WARNING
THE SEMS II ACCOUNTABILITY SYSTEM COMMUNICATES ONLY WITH FIREFIGHTER RESOURCES (RESPIRATOR USERS) USING A SCOTT SCBA EQUIPPED WITH THE SEMS II ACCOUNTABILITY SYSTEM INTEGRATED INTO THE PERSONAL DISTRESS ALARM. OTHER FIREFIGHTER RESOURCES WHO ARE NOT USING A PROPERLY EQUIPPED SCOTT RESPIRATOR MAY BE ADDED FOR ACCOUNT-ABILITY PURPOSES, BUT THEY WILL NOT BE AUTOMATICALLY ACCESSIBLE THROUGH THE COMMUNICATIONS FUNCTIONS OF THE SYSTEM. FAILURE TO RECOGNIZE THE STATUS OF FIREFIGHTER RESOURCES MAY RESULT IN SERIOUS INJURY OR DEATH.

WARNING
FOLLOW REGULAR OPERATIONAL INSPECTION PROCEDURE EXACTLY. IF THE SEMS II DISTRESS ALARM DOES NOT ACTUATE, OR IF ANY OTHER FEATURE DOES NOT OPERATE AS DESCRIBED OR IF ANY OTHER OPERATIONAL MALFUNCTION IS NOTED, DO NOT USE THE RESPIRATOR.

WARNING
USERS OF RESPIRATORS EQUIPPED WITH THE SEMS II DISTRESS ALARM MUST BE AWARE OF THE PROPER OPERATION OF THE DISTRESS ALARM. IF THE GREEN LIGHT IS NOT FLASHING NORMALLY, OR IF THE UNIT EXHIBITS ANY OTHER SIGNS OF A MALFUNCTION WITHOUT THE USER TAKING PROPER CORRECTIVE ACTION, IT MAY LEAD TO CIRCUMSTANCES THAT RESULT IN SERIOUS INJURY OR DEATH.

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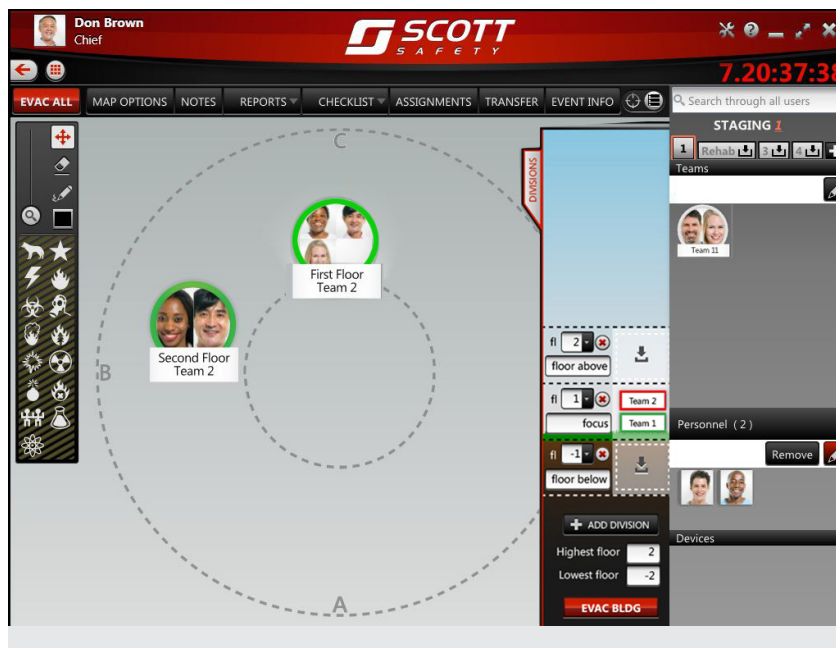
SEMS II ACCOUNTABILITY SYSTEM BASE STATION

The base station consists of a IMPERIUM Accountability Software, USB Gateway or PCMCIA card SEMS II receiver, and/or optional APX RF Modem receiver installed on a Windows[1] based Personal Computer (not included). SCOTT recommends use of a laptop computer designed for rugged use. Refer to the SCOTT CONNECT IMPERIUM ACCOUNTABILITY BASE STATION SOFTWARE Installation and Use instructions, SCOTT P/N 595290-01, in the HELP directory of the IMPERIUM software for complete system specification details, set up and operation.

WARNING

AUDIBLE ALARMS WILL ONLY SOUND FROM THE BASE STATION WHILE BASE STATION COMPUTER SPEAKERS ARE TURNED ON. MUTING THE SPEAKERS WILL RENDER THE BASE STATION ALARMS SILENT. BASE STATION COMMANDER MUST NOT MUTE THE BASE STATION SPEAKERS DURING AN ACTIVE EVENT. FAILURE TO MONITOR AND RESPOND TO AN ACTIVE ALARM COULD LEAD TO SERIOUS INJURY OR DEATH.

SEMS II BASE STATION WITH USB GATEWAY INSTALLED ON A LAPTOP PERSONAL COMPUTER

APX RF MODEM

EXAMPLE OF IMPERIUM BASE STATION SCREEN DISPLAY

With the Imperium Event Management Software running on the PC, the incident commander has current information about status of the respirator users who are logged onto the Base Station, including information about air supply levels and PASS activation. Simple dedicated functions in the software control the transmission to (SEMS II only) and receipt of signals from (SEMS II and BLUEtootth) respirator users. The same computer can be used for programming the ID Tags used with the SEMS II PDA.

[1] WINDOWS is a registered trademarks of MICROSOFT CORPORATION, Redmond, Washington

When a respirator user opens the cylinder valve and begins use of a SCOTT SCBA equipped with the SEMS II PDA, the Accountability System electronics will automatically begin to operate. If the IMPERIUM Base Station is present at time of entry the SEMS II PDA will attempt to log-in to the Base Station. BLUETOOTH enabled units will attempt to log-in to the Base Station once the paired radio is turned on and they are communicating. When the SEMS II is out of range or otherwise unable to link to the system, the *BLUETOOTH* information will display on the base station. Once the SEMS II transmission has resumed, or the SCBA is turned off, the *BLUETOOTH* display will discontinue. It is the responsibility of the Incident Commanders from each fire company to coordinate activities with each other and to maintain accountability for all participating firefighter resources.

Multiple organizations with SEMS II Accountability System equipment can operate at a single event scene since each Base Station operator can select and monitor which users log in on their Base Station. Multiple base stations may also be used at a single event to manage resources from several different fire companies. SEMS II users will appear in one base station at a time. The user can be rejected and connect to an alternate base station.

BLUETOOTH signats transmit to a base station modem via radio. The BLUETOOTH users will simultaneously appear on ALL base stations that are configured to the same radio channel. *BLUETOOTH* units will continue to display on the base station screen until the PDA unit either re-establishes SEMS II communication or it is turned off and removed from the base station.

The SEMS II Accountability System and Personal Distress Alarm can be quickly programmed with the identification of the SCBA user using the SEMS II Accountability RFID Tag, Badge, or Button. Programming the ID Tags and Portable Units allows the organization to customize the identification of the SEMS II Portable Units. See SEMS II Programming Guide, SCOTT Imperium Commissioning for complete details of programming the SEMS II equipment. SCOTT recommends re-programming with the RFID card in accordance with your organization's procedures to assure that the user's unique ID number is in use at all times.

SEMS II RFID TAG WRITER, SCOTT P/N 200773-01.

ID ICON

PROGRAMMING THE USER ID WITH THE RFID TAG

PAK-TRACKER LOCATOR SYSTEM

The SCOTT PAK-TRACKER Locator System is a two part electronic system consisting of a PAK-TRACKER Transmitter integrated into the SCOTT SEMS II distress alarm, and a PAK-TRACKER Hand Held Receiver, which is a directional receiver used to locate the signal coming from the PAK-TRACKER Transmitter. The PAK-TRACKER locator system transmitter is activated with the PASS alarm. The transmitter emits a radio signal with a unique ID number that can be tracked using the SCOTT PAK-TRACKER Hand Held Receiver unit.

PAK-TRACKER
HAND HELD RECEIVER

The PAK-TRACKER Hand Held Receiver is then used as a directional receiver to assist in leading the rescue team to the activated transmitter. By pointing the PAK-TRACKER Hand Held Receiver in the direction of the strongest relative signal, the rescue crew can follow the signal toward the respirator user who is incapacitated or in need of assistance.

Use of this equipment must be part of a complete personnel accountability system that includes procedures for monitoring the deployment and condition of all users. Do not rely on the PAK-TRACKER Locator System as the only technique for locating missing personnel. Failure to use this equipment properly may actually increase the time needed to locate and rescue personnel. TRAINING AND PRACTICE IN REALISTIC EMERGENCY SIMULATIONS IS REQUIRED BEFORE USE OF THIS EQUIPMENT. The users must become thoroughly familiar with the operation and the limitations of the locator system before entering a potentially hazardous or life threatening situation.

The PAK-TRACKER Locator System User Instructions, SCOTT part number 595102-01, contain essential information on the use of the locator system and must be used as the basis of training for use of the whole system including use with a SEMS II distress alarm equipped with the PAK-TRACKER Transmitter. The PAK-TRACKER Locator System User Instructions include an overview of the system operation, limitations of the system, as well as any user level maintenance for the PAK-TRACKER Locator System equipment. Copies of the PAK-TRACKER Locator System User Instructions are available from your SCOTT distributor or from SCOTT Safety.

All User Instructions are provided on the software CD in Adobe Acrobat [2] format (pdf). You may download a free copy of Adobe Acrobat Reader from www.Adobe.com/Acrobat Reader.

WARNING

READ AND UNDERSTAND THIS ENTIRE MANUAL AND THE PAK-TRACKER LOCATOR SYSTEM MANUAL, P/N 595102-01. TRAINING IS REQUIRED BEFORE USE OF THIS EQUIPMENT IN A HAZARDOUS SITUATION. THE TRAINING MUST INCLUDE AN UNDERSTANDING OF THE LIMITATIONS OF THE EQUIPMENT AND HOW TO INTERPRET LOCATING INFORMATION, ALONG WITH EXTENSIVE PRACTICE WITH THE SYSTEM IN A VARIETY OF ENVIRONMENTS. USE OF THIS EQUIPMENT MUST BE A PART OF A COMPLETE PERSONNEL ACCOUNTABILITY SYSTEM. ALWAYS UPDATE TRAINING WITH EACH NEW PIECE OF EQUIPMENT. USE OF A PAK-TRACKER LOCATOR SYSTEM WITHOUT PROPER TRAINING MAY PLACE THE USERS AT HIGHER RISK IN DANGEROUS SITUATIONS WHICH COULD RESULT IN SERIOUS INJURY OR DEATH.

[2] Adobe and Adobe Acrobat are registered trademarks of Adobe Systems, San Jose, California

RETROFITTED UNITS

Installation of the SCOTT SEMS II Personal Distress Alarm requires some disassembly of the respirator and should only be performed by an authorized service center.

Respirators already equipped with an approved SCOTT X3 Distress Alarm integrated PASS device may be retrofitted with the SEMS II Accountability System Control Console. However, if the PAK-TRACKER Transmitter was NOT enabled on the original X3 Distress Alarm, this will have to be enabled by a SCOTT Authorized Service Center to receive the full functionality described in these instructions.

Contact SCOTT Safety, Monroe, NC at 1-800-247-7257 for complete details.

DATA LOGGING FEATURE

Respirators equipped with a SCOTT SEMS II distress alarm integrated PASS device are compliant to NFPA 1982, 2013 Edition. The PASS device includes on-board electronics which maintain a running log of event data including start-up, shut-down, and PASS activation. The SCOTT DATA LOGGER Computer Interface is required to access the information. Instructions for downloading the data log are SCOTT P/N 595123-01 and are included with the computer interface.

<u>QUESTIONS OR CONCERNS</u>

If you have any questions or concerns regarding use of this equipment, contact your authorized SCOTT distributor, or contact SCOTT at 1-800-247-7257 (or 704-291-8300 outside the continental United States) or visit our web site at www.scottsafety.com.

Report any operational malfunctions of the PASS function of this device to the certification agency Safety Equipment Institute (SEI), 1307 Dolley Madison Blvd. Suite 3A, McLean, VA 22101, (703) 442-5732, FAX (703) 442-5756.

OPERATION AND USE OF THE SEMS II DISTRESS ALARM (PASS)

ACTIVATION

Prepare the respirator for use according to the user instructions provided with the respirator. Install the batteries in the SEMS II Sensor Module according to the BATTERY INSTALLATION section of this instruction.

The SEMS II distress alarm device is automatically activated when the respirator is pressurized by opening the cylinder valve of the respirator. To indicate activation, the sensor module will sound 3 quick audible chirps and the green light located on the control console will flash approximately once every three (3) seconds. The SEMS II distress alarm is now in sensing mode.

Once activated, the SCOTT SEMS II distress alarm constantly monitors motion of the respirator backframe. The sensor module is located on the respirator backframe beneath the air cylinder and contains the motion sensor and the audible alarm. If the sensor module does not sense motion of the respirator for twenty (20) seconds, the SEMS II distress alarm will signal a pre-alarm condition. If there is still no motion of the respirator for the next twelve (12) seconds the full alarm will sound.
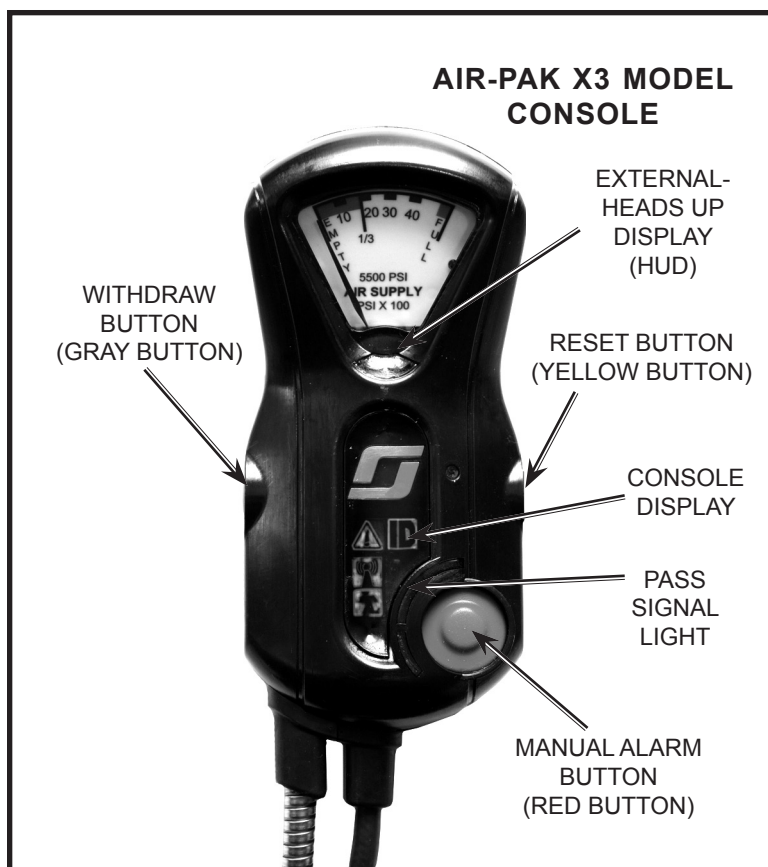
The SCOTT SEMS II distress alarm will remain activated until turned OFF according to these instructions.

WARNING

THE INFORMATION BELOW IS MEANT TO SUPPLEMENT, NOT REPLACE, THE TRAINING, SUPERVISION, MAINTENANCE, AND OTHER ELEMENTS OF YOUR ORGANIZED RESPIRATORY PROTECTION PROGRAM. SEE WARNING ON FIRST PAGE OF THIS DOCUMENT. FAILURE TO COMPLY WITH THESE INSTRUCTIONS MAY RESULT IN SERIOUS INJURY OR DEATH.

WARNING

USERS OF RESPIRATORS EQUIPPED WITH THE SEMS II DISTRESS ALARM MUST BE AWARE OF THE PROPER OPERATION OF THE DISTRESS ALARM. FAILURE TO RECOGNIZE A MALFUNCTION OF THE SEMS II DISTRESS ALARM AND TAKE PROPER CORRECTIVE ACTION MAY RESULT IN SERIOUS INJURY OR DEATH.

AIR-PAK X3 MODEL CONSOLE

EXTERNAL-HEADS UP DISPLAY (HUD)

WITHDRAW BUTTON (GRAY BUTTON)

RESET BUTTON (YELLOW BUTTON)

CONSOLE DISPLAY

PASS SIGNAL LIGHT

MANUAL ALARM BUTTON (RED BUTTON)

**THE CONTROL CONSOLE
(PRESSURE GAUGE DEPENDS ON SYSTEM PRESSURE)**

PRE ALARM:

If the respirator remains motionless for more than twenty (20) seconds, the SEMS II distress alarm will automatically sound a pre-alarm

When the pre-alarm occurs, the green flashing light on the control console is replaced by alternating bright red lights which flash approximately once a second and are accompanied by an ascending/descending audible tone which increases in volume during the pre-alarm cycle.

If the respirator user is not incapacitated or not in need of assistance, move the respirator to reset the pre-alarm. When reset, the flashing red light will be replaced by the flashing green and the ascending/descending tone will stop.

Remember that the motion sensor is in the sensor module on the respirator backframe beneath the air cylinder. Actual movement of the respirator backframe is required to reset the pre-alarm. Shaking the control console will not reset the SEMS II distress alarm .

To manually reset the pre-alarm, press and hold the reset button on the side of the control console until three (3) quick audible chirps are heard and the red flashing light on the control console is replaced by the green flashing light.

FULL ALARM:

If the respirator remains motionless through the twelve (12) second pre-alarm cycle, the SEMS II distress alarm will go into full alarm. This may indicate that the user is incapacitated or in need of assistance and can not move.

Full alarm is indicated by a loud alarm tone from the sensor module accompanied by simultaneous flashing red signal lights on the control console. After an additional (10) second delay, the unit will send a notification of PASS activation to the SEMS II Base Station and the Pak-Tracker Locator transmitter in the unit will begin transmitting the unique ID number that can be received by the Pak-Tracker Hand Held Unit.

To reset the full alarm condition, press the reset button **twice**. After the full alarm has been silenced, the SEMS II distress alarm will remain activated in sensing mode with the green light flashing once per second. As long as the respirator is pressurized, there must be movement of the respirator at least every twenty (20) seconds or the distress alarm will again go into pre-alarm followed by full alarm as described above.

MANUAL ALARM:

If the respirator user requires immediate assistance, pressing the manual alarm button located on the front of the control console will immediately sound the full alarm. The manual alarm may be activated at any time, even when the respirator is not pressurized.

The manual alarm is indicated by a loud alarm tone from the sensor module accompanied by simultaneous flashing red signal lights on the control console. The unit will immediately send a notification of PASS activation to the SEMS II Base Station and the Pak-Tracker Locator transmitter in the unit will begin transmitting the unique ID number that can be received by the Pak-Tracker Hand Held Unit.

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To reset the manual alarm, press the reset button **twice**. After the alarm has been silenced, the SEMS II distress alarm will remain activated in sensing mode.

To turn the unit off, press the reset **twice** again while the unit is not in alarm mode.

Remember, the loud audible alarm and flashing red light can be turned on at any time by pressing the manual alarm button on the control console.

TO TURN OFF THE SEMS II DISTRESS ALARM

When use of the respirator with the SEMS II distress alarm is no longer required, close the cylinder valve on the respirator and vent the residual air from the respirator system by opening the regulator purge valve. After all the air flow stops, press the reset button twice to turn off the distress alarm and close the regulator purge valve.

If there is no pressure in the system when the RESET button is pressed twice, the unit will sound a quick two tone chirp to indicate that the alarm has been turned off.

If there is air pressure left in the system when the RESET button is pressed twice, the sensor module will allow fifteen (15) seconds to for the residual air to bleed from the system. .A green light will flash and sensor will beep for fifteen (15) seconds. Once the air has completely bled from system, the unit will sound the quick two tone chirp to indicate that the alarm has been turned off. If pressure remains in the respirator after the fifteen (15) seconds and/or the respirator cylinder valve remains open, alarm sensor WILL NOT turn off and the distress alarm will return to sensing mode.

WARNING
USERS OF RESPIRATORS EQUIPPED WITH THE SEMS II DISTRESS ALARM MUST BE AWARE OF THE PROPER OPERATION OF THE DISTRESS ALARM. FAILURE TO RECOGNIZE A MALFUNCTION OF THE SEMS II DISTRESS ALARM AND TAKE PROPER CORRECTIVE ACTION MAY RESULT IN SERIOUS INJURY OR DEATH.

OPERATION AND USE OF THE SEMS II DISTRESS ALARM CONTINUED...

If the respirator cylinder is turned off and depressurized without rendering the alarm sensor inactive (pressing the RESET button twice), the distress alarm will continue to monitor motion in sensing mode. This means that the distress alarm may be used to monitor motion after the respirator is turned off and depressurized. Resetting the full alarm after the respirator has been depressurized will not turn off the distress alarm. After resetting the full alarm, press the RESET switch twice with no alarm condition to turn off the distress alarm.

LOW BATTERY

In a low battery condition, the SEMS II distress alarm will produce a single audible chirp from the sensor module once every two (2) seconds and the green light on the control module will not flash.

In low battery condition, the SEMS II distress alarm will not emit the 3 beeps when cylinder valve is activated.

While in low battery condition, the SEMS II distress alarm will continue to operate for a period of time greater then the longest duration cylinder available for the respirator. However, the batteries must be replaced before the respirator is used again. See the BATTERY REPLACEMENT section of these instructions.

If batteries are completely discharged or have not been installed, there will be no light or sound and the unit will not operate.

BATTERY TEST

When the SEMS II PDA is in the off condition (cylinder valve closed with no flashing lights, the batteries in the entire system can be checked by depressing and holding the RESET button on the console.

- A GREEN LED will illuminate on the Control Console, if there is sufficient battery power remaining,
- A RED LED indicates that the batteries are low and must be replaced before the respirator is to be used again.

If a **low** battery message occurs, ALL batteries must be changed before the respirator is used again. See the BATTERY REPLACEMENT section of this instruction for details.

WARNING

DO NOT USE A RESPIRATOR IN A LOW BATTERY CONDITION. FAILURE TO REPLACE THE BATTERIES AND/OR CONTINUING WITH MULTIPLE USES OF THE RESPIRATOR AFTER THE LOW BATTERY CONDITION HAS BEEN INDICATED BY THE SEMS II DISTRESS ALARM MAY RESULT IN FAILURE OF THE SEMS II DISTRESS ALARM DURING USE AND POSSIBLE INJURY OR DEATH OF THE USER.

DATA LOGGING FEATURE

The SEMS II Distress Alarm PASS device includes on-board electronics which maintain a running log of event data including start-up, shut-down, and PASS activation. The SCOTT DATA LOGGER Computer Interface is required to access the information. Instructions for downloading the data log are SCOTT P/N 595123-01 and are included with the computer interface.

Use of the SCOTT DATA LOGGER Computer Interface will remove the programmed RFID card number and will automatically return to the default ID number.

OPERATION AND USE OF ACCOUNTABILITY SYSTEM

The following section describes the features of the SEMS II Accountability System. Training is required before use of this equipment. Use of this equipment must be part of a complete incident management and personnel accountability program.

CONSOLE BUTTONS

There are three (3) buttons on the Control Console. They are as follows:

MANUAL ALARM	Red	To activate the PASS alarm manually
WITHDRAW	Gray	To signal withdraw and scan ID card
RESET	Yellow	Used for various functions.
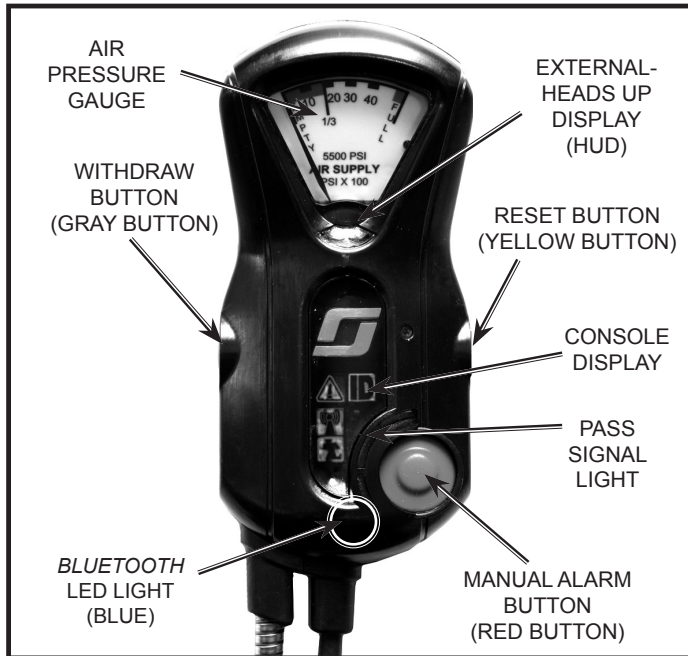
THE CONTROL CONSOLE

CONSOLE DISPLAY

The Console Display has four (4) ICON Symbol segments that light in response to specific conditions. The four are:

EVAC

The EVAC symbol (Running Man) lights when either the Base Station sends a call to the user(s) to EVACUATE (flashed RED), or the user presses the WITHDRAW Button on the Control Console (flashes YELLOW). Base Station call to evacute will not transmit to PDA when communicating via BLUETOOTH.

RANGE

The RANGE symbol lights when the user is out of range of the Base Station (SEMS II) or the APX radio (BLUETOOTH). The Base Station displays a similar message.

PASS ALARM

The PASS ALARM symbol lights when the user's PASS is activated. The Base Station displays a similar message.

ID

The ID symbol is used to indicate the ID programming mode and that the input from the user's Accountability Tag has been accepted.

NOTE

SEMS II ENABLED PDA UNITS HAVE BIDIRECTIONAL COMMUNICATION CAPABILITIES AND CAN BOTH TRANSMIT AND RECEIVE DATA BETWEEN THE PDA AND THE BASE STATION. *BLUETOOTH* **ENABLED PDA CONTROL CONSOLES ARE UNIDIRECTIONAL ONLY. THEY CAN SEND DATA TO THE BASE STATION THROUGH APPROVED** *BLUETOOTH* **ENABLED PORTABLE TWO-WAY RADIOS BUT CANNOT RECEIVE DATA BACK FROM THE BASE STATION.**

WARNING

TRAINING IS REQUIRED BEFORE USE OF THIS EQUIPMENT IN A HAZARDOUS SITUATION. USE OF THIS EQUIPMENT MUST BE A PART OF A COMPLETE INCIDENT MANAGEMENT AND PERSONNEL ACCOUNTABILITY SYSTEM PROGRAM. THE TRAINING MUST INCLUDE AN UNDERSTANDING OF THE LIMITATIONS OF THE EQUIPMENT ALONG WITH EXTENSIVE PRACTICE WITH THE SYSTEM IN A VARIETY OF ENVIRONMENTS. ALWAYS UPDATE TRAINING WITH EACH NEW PIECE OF EQUIPMENT. USE OF THE SEMS II ACCOUNTABILITY SYSTEM WITHOUT PROPER TRAINING MAY PLACE THE USERS AT HIGHER RISK IN DANGEROUS SITUATIONS WHICH COULD RESULT IN SERIOUS INJURY OR DEATH.

WARNING

THE SEMS II ACCOUNTABILITY SYSTEM COMMUNICATES ONLY WITH FIREFIGHTER RESOURCES (RESPIRATOR USERS) USING A SCOTT SCBA EQUIPPED WITH THE SEMS II ACCOUNTABILITY SYSTEM INTEGRATED INTO THE PERSONAL DISTRESS ALARM. OTHER FIREFIGHTER RESOURCES WHO ARE NOT USING A PROPERLY EQUIPPED SCOTT RESPIRATOR MAY BE ADDED FOR ACCOUNTABILITY PURPOSES, BUT THEY WILL NOT BE ACCESSIBLE THROUGH THE COMMUNICATIONS FUNCTIONS OF THE SYSTEM. FAILURE TO RECOGNIZE THE STATUS OF FIREFIGHTER RESOURCES MAY RESULT IN SERIOUS INJURY OR DEATH.

OPERATION AND USE OF ACCOUNTABILITY SYSTEM CONTINUED...

PROGRAMMING A UNIT WITH AN RFID TAG

SCOTT recommends re-programming with the RFID card in accordance with your organization's procedures to assure that the user's unique ID number is in use at all times. To program the identification of a SEMS II Portable unit with an RFID Tag, proceed as follows:

1. Verify that the air cylinder is closed and there is no residual air in the system.
2. Verify that the electronics have been inactive for at lease thirty (30) seconds.
3. On the Control Console, hold down the GRAY (Withdraw) button until the ID light goes on. Release the button.

PRESSING THE GRAY (WITHDRAW) BUTTON

4. Within ten (10) seconds, hold your SEMS II ID Tag against the back of the Control Console labeled "SCAN ID TAGS HERE."

ID LIGHT WILL FLASH 3 TIMES SLOWLY TO INDICATE SUCCESSFUL PROGRAM

PROGRAMMING THE USER ID WITH THE RFID TAG

5. To indicate the programming has been successful, the ID light will flash three (3) times slowly then go out.
6. When performing the REGULAR OPERATIONAL INSPECTION of the SEMS II Accountability System, verify that the correct ID appears on the Base Station display.

NOTE

ONCE THE RESPIRATOR HAS BEEN PRESSURIZED FOR USE, THE ID CANNOT BE CHANGED. THE RESPIRATOR MUST BE SHUT DOWN AND THERE MUST BE NO RESIDUAL AIR PRESSURE LEFT IN THE SYSTEM TO CHANGE THE ID.

To manually remove the programmed RFID card number, verify that the air cylinder is closed, there is no residual air in the system, and the PASS is in the off state. Press and hold the YELLOW RESET Button for eight (8) seconds. During reset, the red lights on the PASS console will alternately flash and SEMS II Distress Alarm Pass device will attempt to interface with Data Logger computer.

Additionally, the unit will automatically return to the default ID number:

– if the battery cover is opened and/or the batteries are removed,

OR

– after twenty-four (24) hours.

OPERATION AND USE OF PDA PORTABLE CONTROL CONSOLE UNITS

Users of SCOTT respirators equipped with the SEMS II (and optional *BLUETOOTH* enabled PDA) Control Consoles must be fully trained in the operation of the equipment as part of a complete respiratory protection program before entering a hazardous environment.

Start-up

- SEMS II: Use of the SEMS II enabled unit begins when the user first opens the cylinder valve on the respirator. The unit will sound three chirps to indicate activation. After a brief start-up sequence, the module will sound 3 quick audible chirps and a green light located on the control console will flash approximately once a second.

- *BLUETOOTH*: Use of the *BLUETOOTH* transmission begins when a unit communicates with a previously paired compatible portable two-way radio. Refer to the **"PAIRING BLUETOOTH ENABLED PDA CONTROL CONSOLE WITH PORTABLE TWO-WAY RADIO"** section of this instruction for pairing instruction. To start the connection turn on the radio. Then, open the cylinder. The LED light on the X3 console will begin flashing BLUE as the PDA searches for the paired radio.

2. **Initialization and RANGE**

- SEMS II: After the start-up sequence, the SEMS II PDA Portable Unit will send an Initialization signal to the base station
  a. When a SEMS II is searching for a connection to the base station, the RANGE symbol on the Control Console will flash YELLOW.
  b. When a connection is made with the base station, the RANGE symbol on the Control Console will turn to solid GREEN
  c. When a SEMS II respirator user loses contact with the base station, the RANGE symbol on the Control Console will flash YELLOW indicating out of range until it can regain contact. *If using a dual SEMS II and BLUETOOTH unit, the BLUETOOTH may connect until SEMS II is back in range.*

- BLUETOOTH:
  a. When a Bluetooth connection is made to the two way radio the LED on the PDA unit will light solid Blue.
  b. When the SCBA user moves too far from the radio after logging-in, the LED will flash BLUE until it is back in range.

Except for those functions which involve communication all PASS functions of the Control Console and PDA distress alarm are still operational when the Portable Unit is either out of range or not connected to a base station or radio.

3. **PASS DISTRESS ALARM**

- a. The SEMS II PDA PASS distress alarm will operate in conjunction with the Portable Unit. If the distress alarm on the respirator is activated, either by the user pressing and holding the Red MANUAL ALARM button for at least two seconds, or from the user being immobile for the required time duration, the Portable Unit will send a PASS distress alarm signal to the base station. This signal will override all other messages and actions of the Portable Unit. The PASS symbol on the Control Console will flash RED. (SEMS II and Bluetooth)
- b. The PASS icon will appear Flashing RED on the Console, and an audible alert will sound. (SEMS II and Bluetooth)
- c. When the base station acknowledges the user's distress signal by selecting the TEAM Member's PASS button on the TEAM Details, the PASS symbol on the Control Console will turn Solid RED. **(SEMS II ONLY)**
- d. The distress alarm on the respirator will continue until the user shuts down the respirator or resets the alarm.

CONTROL CONSOLE ICONS

PDA PORTABLE CONTROL CONSOLE

RANGE

PASS
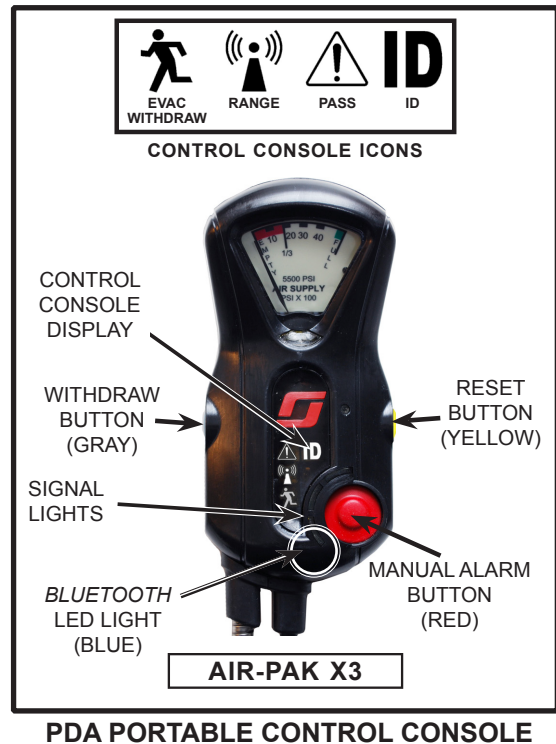
OPERATION AND USE OF THE ACCOUNTABILITY SYSTEM CONTINUED ON NEXT PAGE...

OPERATION AND USE OF ACCOUNTABILITY SYSTEM CONTINUED...

4. **EVACUATION (SEMS II ONLY)**

   a. If the respirator users are required to leave the hazardous area, the base station operator can send an evacuation message to the Portable Units of logged-in respirator users. This message can be sent either to all logged-in users (EVAC ALL), to everyone on an Assignment (EVAC ASSIGN), to everyone in a geographic DIVISION (EVAC BLDG) or to an individual logged-in users as selected from the TEAM Details (EVAC).

   b. The Portable Unit will emit the alert sound and the EVAC symbol will begin flashing RED on the Control Console.

   c. When an EVAC symbol begins flashing on the Control Console, the respirator user must press twice the Yellow RESET button on the Control Console to respond to the evacuation message. The EVAC symbol on the Control Console will turn ON solid RED until the user leaves the hazardous area and shuts down the respirator. The respirator user's EVAC symbol in the TEAM Details on the Display will change from RED to WHITE to indicate acknowledgement.

Evacuation message will ONLY be sent to individual SEMS II PDA users or to the QUEUE interface. EVAC notice will not send to user while in BLUETOOTH mode but will send once SEMS II communications have resumed. EVAC button will be deactivated when no SEMS II Gateway is connected to the Base Station.

5. **WITHDRAW**

   a. The respirator user may choose to leave the hazardous area. Pressing and holding the Gray **WITHDRAW** button for at least two seconds will send that message to the Base Station. The "EVAC" symbol on the Control Console will flash YELLOW quickly as the WITHDRAW message appears on the Base Station.

   b. When the Base Station receives a user WITHDRAW message, the Base Station Operator selects the ACK W/D button.

   c) After the Base Station acknowledges, the "EVAC" symbol on the Control Console will turn ON steady until user leaves hazardous area and shuts down the respirator.

6. **Air Supply Cylinder Pressure**

   a) In addition to the other end-of-service indicators on the respirator, when the cylinder reaches one third of full pressure, the VIBE ALERT sounds a LOW AIR warning with an audible alarm. .

   b) The VIBE ALERT alarm will be transmitted until the respirator has been depleted. This LOW AIR alarm is in addition to the other end-of-service indicators on the respirator.

7. **Shutdown**

   a) After leaving the hazardous area and confirming that respirator use is no longer required, doff the respirator according the user instructions provided with the respirator.

   b) Close the cylinder valve. Use the purge valve to release all the residual air pressure in the system.

   c) Press the Yellow RESET button twice.

   d) The Control Console will sound the alert tone. The SEMS II PDA Portable Unit is now off.

BASE STATION OPERATION

The SEMS II Base Station consists of a SEMS II Accountability System Base Station installed in a Windows based Personal Computer, preferably a laptop (not included). SCOTT recommends use of a laptop computer designed for rugged use.

Refer to the SCOTT CONNECT IMPERIUM ACCOUNTABILITY BASE STATION SOFTWARE Installation and Use instructions, SCOTT P/N 595290-01, in the HELP directory of the IMPERIUM software for complete details of computer requirements, Base Station software setup, and use of the Accountability System.

The IMPERIUM Base Station must be operated by a fully trained individual as part of a complete incident management system and respiratory protection program. The Base Station Operator must have the ability to notify other personnel if an emergency situation develops as displayed by the SEMS II Accountability System.

EVAC/WITHDRAW

WARNING
THE RESPIRATOR USER MUST IMMEDIATELY LEAVE THE AREA REQUIRING RESPIRATORY PROTECTION WHEN AN END OF SERVICE INDICATOR ALARM ACTUATES. ACTUATION OF AN END OF SERVICE INDICATOR ALARM WARNS THAT APPROXIMATELY 1/3 OF FULL PRESSURE REMAINS IN THE AIR SUPPLY CYLINDER (THAT IS, APPROXIMATELY 2/3 OF THE TOTAL AIR SUPPLY HAS BEEN USED). A DELAY IN LEAVING THE AREA AFTER ALARM ACTUATION MAY CAUSE DEPLETION OF BREATHING AIR SUPPLY WHICH COULD RESULT IN SERIOUS INJURY OR DEATH.

EVAC/WITHDRAW

WARNING
AUDIBLE ALARMS WILL ONLY SOUND FROM THE BASE STATION WHILE BASE STATION COMPUTER SPEAKERS ARE TURNED ON. MUTING THE SPEAKERS WILL RENDER THE BASE STATION ALARMS SILENT. BASE STATION COMMANDER MUST NOT MUTE THE BASE STATION SPEAKERS DURING AN ACTIVE EVENT. FAILURE TO MONITOR AND RESPOND TO AN ACTIVE ALARM COULD LEAD TO SERIOUS INJURY OR DEATH.

PRIMARY FUNCTIONS OF THE SOFTWARE

IMPERIUM software is designed for both tactical and strategic event management with compliance to NIMS and the user's own organizational standard operating guidelines (SOG's).

The software is not SCBA specific and is designed to be used also by first responders.

The primary purpose of the IMPERIUM is to monitor the activities of Accountability System users, including active SEMS II PDA (Personal Distress Alarm) users and Queue Accessory users, as well as Non-SEMS II PDA users (by use of RFID Tags to log into the system) and Equipment.

The software is a TEAM Based approach to event management based on defined ASSIGNMENTS and TEAMS placed on those assignments.

Each Event can be new or can be based on a customized set of parameters set in an EVENT template. The Application Settings can also be preset to control the way the Software displays and/or processes the information provided to the The IMPERIUM Base Station Operator.

The primary functions of the software are as follows:

1. Open an EVENT.
2. Create ASSIGNMENTS for TEAMS.
3. ASSIGN Individual Resources to ASSIGNMENTS and TEAMS (and/or DIVISIONS depending on the nature of the event.)
4. REJECT Individual Resources (active SEMS II PDA users, Bluetooth enabled PDA users, NON-SEMS II PDA users and Equipment only.)
5. REMOVE Assignments, TEAMS, DIVISIONS, or Individuals from the event.
6. MONITOR the condition of active SEMS II and Bluetooth enabled PDA users and take the appropriate actions.
7. Create NOTES for the event.
8. Provide a REPORT of the event.

Active SEMS II PDA users can send signals to and receive signals from the base station. When in *BLUETOOTH* mode, PDA users can send signals to the base station but cannot receive them from the base station. The base station operator can perform the following tasks:

MONITOR ALERTS for:
- LOW AIR SUPPLY of each active SEMS II and *BLUETOOTH* enabled PDA user.
- PASS Activation (either automatic and manual activation) of each active SEMS II and *BLUETOOTH* enabled PDA user.
- OUT-OF-RANGE – Shows the status of the communication link from each User's active SEMS II PDA (or QUEUE Interface) to the base station. (SEMS II and QUEUE only)
- WITHDRAW Notification from each active SEMS II and *BLUETOOTH* enabled PDA users.

Send an EVACUATION (EVAC) Signal when required (**SEMS II PDA USERS ONLY**):
- EVAC ALL – Evacuate all logged in active **SEMS II only.**
- EVAC TEAM – Evacuate a TEAM of logged in active **SEMS II only.**
- EVAC ASSIGNMENT– Evacuate by ASSIGNMENT of logged in **SEMS II only**.
- EVAC BLDG – Evacuate by DIVISION of logged in active **SEMS II only**.
- EVAC IND – Evacuate an Individual active **SEMS II PDA users only**.

NOTE
SEMS II PDA UNITS AND QUEUE ACCESSORIES CAN INITIALLY TAKE APPROXIMATELY FORTY (40) SECONDS TO TWO (2) MINUTES TO CONNECT TO THE BASE STATION. CONNECTION TIME MAY INCREASE AS THE NUMBER OF ADDITIONAL NODES (EXTERNAL DEVICES) INCREASES.

NOTE
IF A PDA UNIT HAS BOTH SEMS II AND *BLUETOOTH* CAPABILITIES, THE SEMS II WILL TRANSMISSIONS WILL ALWAYS TAKE PRECEDENCE AND APPEAR AS A SEMS II USER ON THE BASE STATION. THE *BLUETOOTH* TRANSMISSION WILL ONLY APPEAR AS A *BLUETOOTH* USER IF THE SEMS II TRANSMISSION CANNOT CONNECT TO THE BASE STATION.

EVAC/WITHDRAW   **PASS**   **RANGE**

WARNING
THE IMPERIUM ACCOUNTABILITY BASE STATION MUST BE MONITORED BY A FULLY TRAINED INDIVIDUAL WITH THE ABILITY TO DIRECT RESCUE OPERATIONS AT ALL TIMES WHEN LOGGED-IN RESPIRATOR USERS MAY BE IN A HAZARDOUS AREA. FAILURE TO PROVIDE A PROPERLY TRAINED BASE STATION OPERATOR MAY PERMIT A SITUATION TO OCCUR WHICH COULD RESULT IN SERIOUS INJURY OR DEATH.

WARNING
DO NOT TAKE THE BASE STATION INTO A FIRE OR INTO A POTENTIALLY FLAMMABLE OR EX-PLOSIVE ATMOSPHERE. OPERATE THE BASE STATION ONLY IN A SAFE AREA AWAY FROM THE HAZARDOUS ATMOSPHERE WHERE THE RESPIRATORS ARE BEING USED. USE OF THE BASE STATION IN A POTENTIALLY FLAMMABLE OR EXPLOSIVE ATMOSPHERE MAY CAUSE IG-NITION OF THE ATMOSPHERE WHICH COULD RESULT IN SERIOUS INJURY OR DEATH.

WARNING
THE IMPERIUM ACCOUNTABILITY SYSTEM COMMUNICATES ONLY WITH FIREFIGHTER RESOURCES (RESPIRATOR USERS) USING A SCOTT SCBA RESPIRATOR EQUIPPED WITH THE IMPERIUM ACCOUNTABILITY SYSTEM INTEGRATED INTO THE PERSONAL DISTRESS ALARM. OTHER FIREFIGHTER RESOURCES WHO ARE NOT USING A PROPERLY EQUIPPED SCOTT RESPIRATOR MAY BE ADDED FOR ACCOUNTABILITY PURPOSES, BUT THEY WILL NOT BE AUTOMATICALLY ACCESSIBLE THROUGH THE COMMUNICATIONS FUNC-TIONS OF THE IMPERIUM SYSTEM. FAILURE TO RECOGNIZE THE STATUS OF FIREFIGHTER RESOURCES MAY RESULT IN SERIOUS INJURY OR DEATH.

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BASE STATION OPERATION CONTINUED...

The EVAC/WITHDRAW, PASS, and RANGE icons that appear on the software display are the same as the EVAC/WITHDRAW, PASS, and RANGE symbols that appear on the PDA Control Console display.

When active SEMS II PDA Users are logged into the system and included in the event activities (moved to the MAIN TACTICAL DISPLAY), they must be part of a TEAM and the TEAM must be associated with an ASSIGNMENT. As two individuals are associated with each other, they appear as a TEAM with ability to designate one of the members as TEAM LEADER. If any member of a TEAM transmits an alert (PASS, LOW AIR, or OUT-OF-RANGE), the TEAM icon on the screen will indicate RED and an audible alarm will sound. The Alert information for the individual is available through the TEAM Details.

When an ASSIGNMENT has been created and an individual is placed on the TACTICAL VIEW Display Screen, that person will be labeled TEAM 1 and associated with the current ASSIGNMENT. A TEAM should consist of a minimum of two (2) people. If another individual is placed on the TACTICAL VIEW Display Screen but not associated with an existing TEAM, that individual will be labeled TEAM 2.

Additional functions include:

1. Accountability for Support Personnel (Non-SEMS II PDA Users by use of RFID Tags to log into the system).
2. Personnel Accountability Report (PAR) Timer reminder can be set according to your standard procedures.
3. Event Report to provide an account of event information.

NOTE
ACCESSIBILITY TO SOME SETTINGS MAY BE LIMITED BY YOUR SYSTEM ADMINISTRATOR TO MAINTAIN COMPLIANCE WITH APPLICABLE NATIONAL STANDARDS OR ESTABLISHED INTERNAL PROCEDURES.

TRAINING REQUIRED BEFORE USE. Refer to the SCOTT CONNECT IMPERIUM ACCOUNTABILITY BASE STATION SOFTWARE Installation and Use instructions, SCOTT P/N 595290-01, in the HELP directory of the IMPERIUM software for complete details on the use of the IMPERIUM Accountability Base Station System.

WARNING
DO NOT TAKE THE BASE STATION INTO A FIRE OR INTO A POTENTIALLY FLAMMABLE OR EXPLOSIVE ATMOSPHERE. OPERATE THE BASE STATION ONLY IN A SAFE AREA AWAY FROM THE HAZARDOUS ATMOSPHERE WHERE THE RESPIRATORS ARE BEING USED. USE OF THE BASE STATION IN A POTENTIALLY FLAMMABLE OR EXPLOSIVE ATMOSPHERE MAY CAUSE IGNITION OF THE ATMOSPHERE WHICH COULD RESULT IN SERIOUS INJURY OR DEATH.

WARNING
THE IMPERIUM ACCOUNTABILITY SYSTEM COMMUNICATES ONLY WITH FIREFIGHTER RESOURCES (RESPIRATOR USERS) USING A SCOTT SCBA RESPIRATOR EQUIPPED WITH THE IMPERIUM ACCOUNTABILITY SYSTEM INTEGRATED INTO THE PERSONAL DISTRESS ALARM. OTHER FIREFIGHTER RESOURCES WHO ARE NOT USING A PROPERLY EQUIPPED SCOTT RESPIRATOR MAY BE ADDED FOR ACCOUNTABILITY PURPOSES, BUT THEY WILL NOT BE AUTOMATICALLY ACCESSIBLE THROUGH THE COMMUNICATIONS FUNCTIONS OF THE IMPERIUM SYSTEM. FAILURE TO RECOGNIZE THE STATUS OF FIREFIGHTER RESOURCES MAY RESULT IN SERIOUS INJURY OR DEATH.

BASE STATION OPERATOR RESPONSIBILITIES

The base station Operator must create and track ASSIGNMENTS.

The base station operator must monitor and respond to any ACTIVE ALERTS in accordance with the organization's event management program. This may include issuing an EVAC signal to the individual or to the entire TEAM.

Monitor for the following **TEAM MEMBER ACTIVE ALERTS** including:

- **LOW AIR**
  - When the air supply cylinder reaches predetermined pressure, the end-of-service-time indicators (EOSTI) will activate on the SCBA and a LOW AIR signal will be sent to the base station. The TEAM Icon will flash RED, the "Team Summary" will show a red bar, the team member image of effected individual in the "Teammate Details" will display a red bar and the base station will sound the LOW AIR audible alarm.

- **PASS**
  - When a User's PASS has been activated, the TEAM Icon will flash RED, the "Team Summary" will show a red bar, the team member image of effected individual in the "Teammate Details" will display a red bar and PASS icon, and the base station will sound the PASS audible alarm. These alarms will continue until the PASS has been turned off on the PDA unit.

- **OUT OF RANGE**
  - The OUT OF RANGE caution will begin after forty (40) seconds without a signal from the SEMS II PDA User or the QUEUE interface to the Base Station, or two (2) minutes without transmission from *BLUETOOTH* enabled PDA to the APX Radio. The TEAM Icon will flash YELLOW, the "Team Summary" will show a yellow bar, the team member image in "Teammate Details" will display a Yellow bar and Out of Range icon, and the base station will sound the Out of Range caution audible alarm indicating the system is trying to re-link with the user.
  - If re-linking does NOT occur, the TEAM Icon will flash RED, the "Team Summary" will show a Red bar, the team member image in "Teammate Details" will display a Red bar and Out of Range icon, and the base station will sound the Out of Range audible alarm The base station operator must respond to the User's out of RANGE signal in accordance with the organization's event management program.

- **WITHDRAW**
  - An individual TEAM Member chooses to WITHDRAW by pressing the GRAY (or BLUE) button on the User's Control Console on the SCBA. When this occurs, the WITHDRAW message is sent to the base station. The TEAM Icon will flash RED, the "Team Summary" will show a red bar, the team member image of effected individual in the "Teammate Details" will display a red bar and WITHDRAW icon, and the base station will sound the WITHDRAW audible alarm.
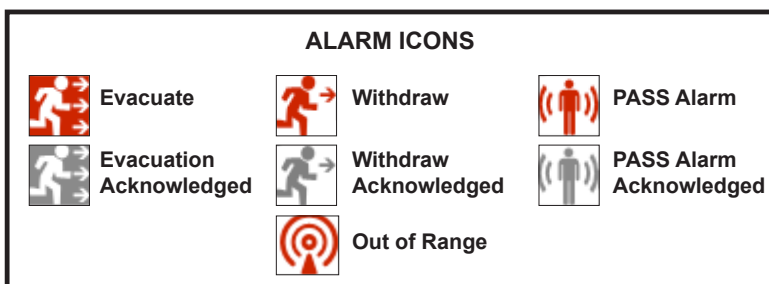
PAR CALL AND RESPONSE

- **Support Personnel Accountability** (Non-SEMS II PDA users by use of RFID Tags to log into the system).
  - The base station operator must monitor and coordinate the activities of Non-SEMS II PDA users who have logged into the system by the use of RFID Tags in accordance with the organization's event management program.

WARNING

AUDIBLE ALARMS WILL ONLY SOUND FROM THE IMPERIUM BASE STATION WHILE WORKING WITHIN AN OPEN EVENT. NAVIGATION TO ANY OTHER SCREEN WILL RENDER THE ALARMS AT THE IMPERIUM BASE STATION SILENT. THE IMPERIUM BASE STATION COMMANDER MUST NOT NAVIGATE TO OTHER SCREENS DURING AN ACTIVE EVENT. FAILURE TO MONITOR AND RESPOND TO AN ACTIVE ALARM COULD LEAD TO SERIOUS INJURY OR DEATH.

WARNING

SEMS II PDA UNITS AND THE QUEUE ACCESSORY WILL ONLY CONNECT TO THE IMPERIUM BASE STATION WHILE WORKING WITHIN AN OPEN EVENT. NAVIGATION TO ANY OTHER SCREEN WILL TEMPORARILY DISCONNECT THESE DEVICES AND THEIR ALARMS. UPON RETURN TO THE EVENT, THE DEVICES WILL HAVE TO REESTABLISH A CONNECTION AND WILL NOT SHOW ANY VISUAL OR AUDIBLE ALARMS FOR APPROXIMATELY 2 MINUTES UNTIL CONNECTION IS REESTABLISHED. COMMANDER MUST NOT NAVIGATE TO OTHER SCREENS DURING AN ACTIVE EVENT. FAILURE TO MONITOR AND RESPOND TO AN ACTIVE ALARM COULD LEAD TO SERIOUS INJURY OR DEATH.

ALARM ICONS		
Evacuate	Withdraw	PASS Alarm
Evacuation Acknowledged	Withdraw Acknowledged	PASS Alarm Acknowledged
Out of Range		

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OPERATION AND USE OF
THE SCOTT PAK-TRACKER LOCATOR SYSTEM

USE AS PART OF AN ACCOUNTABILITY SYSTEM

TRAINING REQUIRED BEFORE USE. Refer to the PAK-TRACKER Locator System User Instructions, SCOTT P/N 595102-01 for complete details on the use of the PAK-TRACKER Locator System. Use of this equipment must be part of a complete personnel accountability system that includes procedures for monitoring the deployment and condition of all users. Do not rely on the PAK-TRACKER Locator System as the only technique for locating missing personnel. A Rapid Intervention or Rescue team using the Hand Held Receiver must have a minimum of two (2) people. For their own safety, the team members must pay attention to their surroundings at all times while using the PAK-TRACKER Locator System.

The accountability system must include procedures for alerting the incident commander and rescue teams when actuated transmitters or the missing personnel have been found or when they have moved from their previous location. It is the responsibility of the personnel accountability system to allow for such contingencies without exposing individuals and teams to unnecessary dangers.

WARNING

READ AND UNDERSTAND THIS ENTIRE MANUAL AND THE PAK-TRACKER LOCATOR SYSTEM MANUAL, P/N 595102-01. TRAINING IS REQUIRED BEFORE USE OF THIS EQUIPMENT IN A HAZARDOUS SITUATION. THE TRAINING MUST INCLUDE AN UNDERSTANDING OF THE LIMITATIONS OF THE EQUIPMENT AND HOW TO INTERPRET LOCATING INFORMATION, ALONG WITH EXTENSIVE PRACTICE WITH THE SYSTEM IN A VARIETY OF ENVIRONMENTS. USE OF THIS EQUIPMENT MUST BE A PART OF A COMPLETE PERSONNEL ACCOUNTABILITY SYSTEM. ALWAYS UPDATE TRAINING WITH EACH NEW PIECE OF EQUIPMENT. USE OF A PAK-TRACKER LOCATOR SYSTEM WITHOUT PROPER TRAINING MAY PLACE THE USERS AT HIGHER RISK IN DANGEROUS SITUATIONS WHICH COULD RESULT IN SERIOUS INJURY OR DEATH.

PRINCIPLES OF OPERATION
OF THE PAK-TRACKER LOCATOR SYSTEM

The SCOTT PAK-TRACKER locator system is an electronic system consisting of a Hand Held Receiver and a Transmitter built into the SEMS II Sensor Module on the SCBA backframe. The Transmitter is activated when the PASS is in Full Alarm. When a Transmitter is activated, it sends out a radio signal in all directions that is received by the Hand Held Receiver. Understanding how the radio signal from a Transmitter behaves and how the Hand Held Receiver receives and displays the strength of that signal are critical to understanding the operation of the SCOTT PAK-TRACKER locator system.
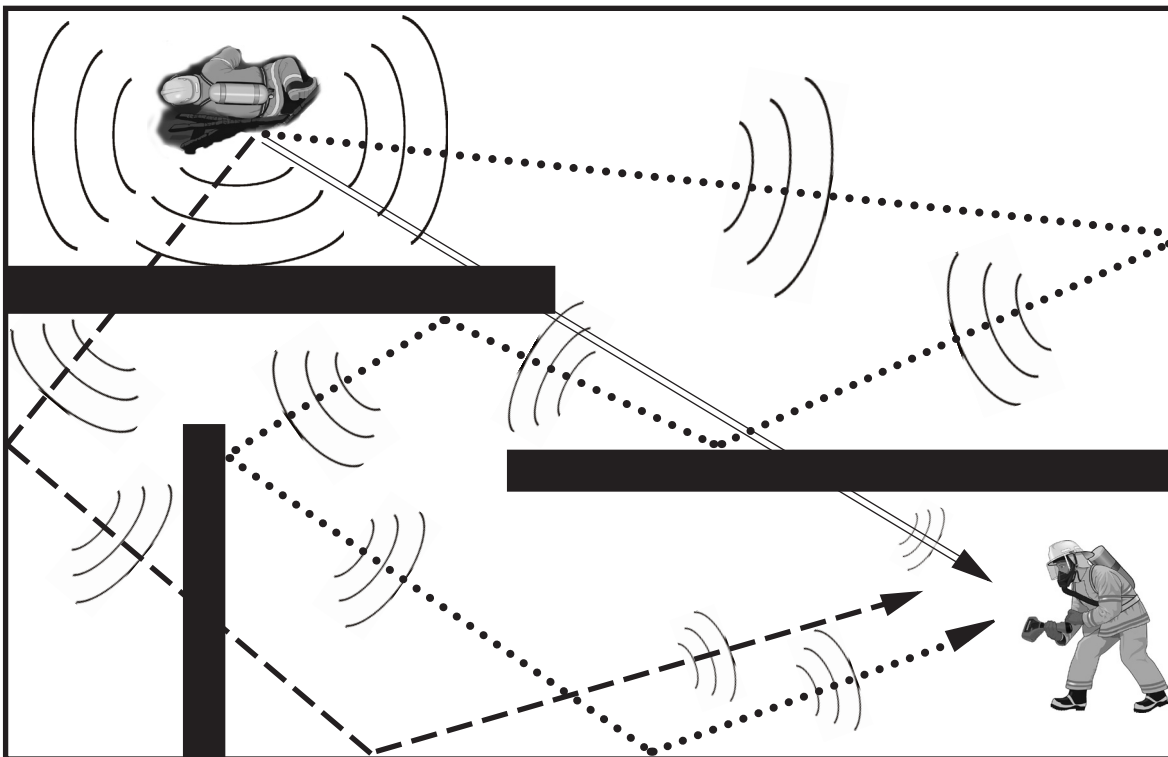
MULTIPLE SIGNAL PATHS ARE POSSIBLE

Successful operation of the PAK-TRACKER Locator system depends heavily on the interpretation of the relative signal strength information displayed on the Hand Held Receiver along with all other available information about the possible location of the activated transmitter.

The Hand Held Receiver is very sensitive in responding to small differences in signal strength. The relative strength of the Transmitter signal detected by the Hand Held Receiver will vary depending on:

1. The distance from the Transmitter to the Hand Held Receiver,
2. The path the Transmitter signal has taken to get to the Hand Held Receiver,
3. The materials between the Transmitter and the Hand Held Receiver which may have affected the signal from the Transmitter.

The user of the Hand Held Receiver must interpret the readings on the Hand Held Receiver display along with other information, such as:

– training and knowledge in systematic search and rescue techniques,
– their sense of sight (watch where you are going),
– their sense of sound (listen for an activated PASS device),
– the deployment of the missing personnel,
– knowledge of the building layout and building materials,

Do not rely solely on the readings from the Hand Held Receiver to locate the activated Transmitter.

Refer to the PAK-TRACKER Locator System User Instructions, SCOTT P/N 595102-01 for complete details on the use of the PAK-TRACKER Locator System.

When a SEMS II Control Console has been programmed with the user's RFID Tag, the PAK-TRACKER locator system will display the first eight characters of the Employee ID number as programmed on the RFID Tag. The first eight (8) characters of the Employee ID number on the RFID Tag must be unique to that individual. Use a badge number or some other identifier that is not shared by anyone else. Using a unique number in the first eight (8) characters will assure that searchers using the PAK-TRACKER locator system will not see two signals with the same number displayed.

If the RFID Tag is not used, PAK-TRACKER locator system will display the default eight digit ID number which appears on a label beside the cable connection on the Sensor Module. This default number can be reprogrammed using the SCOTT Pak-Link Computer Interface. Refer to the Pak-Link Computer Interface Installation and Use Instructions, SCOTT P/N 595123-01, for complete details.

To return to the default ID number and remove the programmed RFID card number, proceed as follows:

1. Verify that the air cylinder is closed and there is no residual air in the system.
2. Verify that the electronics have been inactive for at lease thirty (30) seconds.
3. Press and hold the YELLOW button on the Console for eight (8) seconds until the red LEDS begin flashing alternately.

In addition, the unit will automatically return to the default ID number:

– if the battery cover is opened and/or the batteries are removed,

                    OR

– after twenty-four hours.

SCOTT recommends re-programming with the RFID card in accordance with your organization's procedures to assure that the user's unique ID number is in use at all times.

REGULAR OPERATIONAL INSPECTION

Inspect and test the SCOTT SEMS II distress alarm, SEMS II Accountability System, and the PAK-TRACKER Locator System along with the inspection and test of the SCOTT SCBA respirator before each use. Refer to the PAK-TRACKER User Instructions, SCOTT P/N 595102-01, provided with the SCOTT PAK-TRACKER Hand Held Receiver for complete details. Include the following inspection procedures with the REGULAR OPERATIONAL INSPECTION procedures defined in your respirator instructions. If any malfunction of the respirator, the PAK-TRACKER Locator System, or the SEMS II distress alarm or Accountability System is noted during the inspection, remove the respirator from service and tag for repair by authorized personnel.

To test the PAK-TRACKER locator transmitter, you must have an operating SCOTT PAK-TRACKER Hand Held Receiver.

NOTE
IN SEVERAL OF THE INSPECTION PROCEDURES DESCRIBED A FULL ALARM WILL BE OBSERVED. THE FULL ALARM CONDITION INCLUDES AN AUDIBLE TONE THAT CAN EXCEED 95 DBA AT 3 METERS (9.9 FT.). TO PREVENT POSSIBLE HEARING DAMAGE DURING TEST, IMMEDIATELY RESET THE ALARM ON VERIFICATION THAT IT IS FUNCTIONING PROPERLY. WEAR HEARING PROTECTION IF PROLONGED OR REPEATED EXPOSURE TO A FULL ALARM CONDITION IS ANTICIPATED.

NOTE
IF THIS INSPECTION IS DONE IN DIRECT SUNLIGHT IT MAY BE HELPFUL TO SHADE THE LENS ON THE CONTROL CONSOLE WITH YOUR HAND TO BE SURE THE LIGHTS ARE FLASHING AS DESCRIBED.

1. While performing the visual inspection of the respirator, visually inspect all distress alarm enclosures, lenses, and wire conduits for cracks, wear or other damage. If any damage is found, remove the respirator from service and tag for repair by qualified personnel.
2. Inspect the SCOTT PAK-TRACKER Hand Held Receiver for any cracks or signs of damage. If any damage is found, remove the unit from service and tag for repair by qualified personnel.
3. Turn on the SCOTT PAK-TRACKER Hand Held Receiver according to the operating instructions provided with the unit. Position the Hand Held Receiver near by.
4. Turn on the computer with the SCOTT SEMS II MESH GATEWAY Software with the PCMCIA Communications Card or USB Gateway installed, according to this instructions. Position the computer near by.
5. With the cylinder valve closed, press the manual alarm button, located on the front of the distress alarm control console.
   a) The manual alarm shall sound a loud almost continuous 3 tone chirp accompanied by flashing of the red signal light on the control console.
   b) The PAK-TRACKER Hand Held Receiver will sound an alarm and display the unique identification number of the SEMS II distress alarm. Use the SCROLL button on the Hand Held Receiver to highlight the active ID number and press the ENTER button on the Hand Held Receiver to select the displayed ID number. Point the unit directly at and in close proximity to the respirator. The signal strength displayed will be at its highest value.
   c) Verify that the SEMS II functions are all operating properly and that PASS and EVAC alarms and acknowledgements operate according to these instructions.
6. Reset the manual alarm by pressing **twice** on the reset button located on the side of the control console **(fully depress reset button, release and press again).**
   a) The unit will sound three chirps and the green light will flash.
   b) The PAK-TRACKER Hand Held Receiver will reset to its non-alarm state.
7. Turn the SEMS II distress alarm OFF by pressing the reset button **twice** again. The unit will sound a two tone chirp and the green light will go out.
8. Open the cylinder valve to pressurize the respirator system. The distress alarm shall sound 3 quick chirps and the light on the control console shall begin flashing green about once a second. The 3 chirps will sound approximately the same time the VIBRALERT in the mask mounted regulator actuates briefly. Make sure the air flow is stopped by pressing the air saver/donning switch.

WARNING
FOLLOW REGULAR OPERATIONAL INSPECTION PROCEDURE EXACTLY. IF THE SEMS II DISTRESS ALARM DOES NOT ACTUATE, OR IF ANY OTHER FEATURE DOES NOT OPERATE AS DESCRIBED OR IF ANY OTHER OPERATIONAL MALFUNCTION IS NOTED, DO NOT USE THE RESPIRATOR.

WARNING
THE PROPER OPERATION OF THE LOCATOR SYSTEM CANNOT BE CHECKED WITHOUT CHECKING ALL COMPONENTS OF THE SYSTEM TOGETHER. THE REGULAR OPERATIONAL INSPECTION MUST INCLUDE THE HAND HELD RECEIVER AND THE BASE STATION WORKING WITH EACH OTHER TO CONFIRM PROPER OPERATION. FAILURE TO PROPERLY INSPECT THE COMPLETE SYSTEM MAY RESULT IN FAILURE OF ONE COMPONENT WHICH COULD LEAD TO SERIOUS INJURY OR DEATH.

CAUTION
THE PERFORMANCE PROPERTIES OF THE SEMS II DISTRESS ALARM CANNOT BE PROPERLY TESTED IN THE FIELD.

WARNING
IN SEVERAL OF THE INSPECTION PROCEDURES DESCRIBED A FULL ALARM WILL BE OBSERVED. THE FULL ALARM CONDITION INCLUDES AN AUDIBLE TONE THAT CAN EXCEED 95 DBA AT 3 METERS (9.9 FT.). TO PREVENT POSSIBLE HEARING DAMAGE DURING TEST, IMMEDIATELY RESET THE ALARM ON VERIFICATION THAT IT IS FUNCTIONING PROPERLY. WEAR HEARING PROTECTION IF PROLONGED OR REPEATED EXPOSURE TO A FULL ALARM CONDITION IS ANTICIPATED.

9. To check the pre-alarm, leave respirator motionless for twenty (20) seconds. The green flashing light shall be replaced by a red flashing light. An ascending/descending tone will sound increasing in volume. Leave the respirator motionless.

10. After the pre-alarm condition occurs, check the pre-alarm reset. Within twelve (12) seconds of the pre-alarm, move the respirator to activate the motion sensor. The SEMS II distress alarm shall reset to sensing mode. The red flashing light shall be replaced by a green flashing light and the ascending/descending tone shall stop.

   Continue with regular operational inspection of respirator as directed by respirator instructions or your approved respiratory protection plan procedure. During the inspection the respirator must be moved or turned every thirty (30) seconds or less to prevent the sounding of the full alarm.

After completion of all respirator checks and before turning off the cylinder valve:

1. Check the manual reset of the pre-alarm. Leave the respirator motionless until pre-alarm condition occurs. Within twelve (12) seconds press and **single click** the reset button. Three (3) chirps shall sound, then release button. The distress alarm shall reset to sensing mode and the alternating flashing red lights will be replaced by a flashing green light.

2. To check the full alarm, leave the respirator motionless until the pre-alarm condition occurs. Do not reset.

   a) The full alarm shall sound a loud almost continuous tone accompanied by simultaneous flashing of the red signal lights on the control console.

   b) The PAK-TRACKER Hand Held Receiver will sound an alarm and display the Identification Number of the SEMS II distress alarm. The displayed number will be either the Sensor ID number which appears on the label on the Sensor Module or the ID number programmed using the SEMS II RFID Tag. Use the SCROLL button on the Hand Held Receiver to highlight the active ID number and press the ENTER button on the Hand Held Receiver to select the displayed ID number. Point the unit directly at and in close proximity to the respirator. The signal strength displayed will be at its highest value.

4. Reset the full alarm by pressing **twice** on the reset button located on the side of the control console **(fully depress reset button, release and press again).**

   a) The loud alarm shall stop. The unit will sound three chirps and the green light will flash. The unit shall reset to sensing mode.

   b) The PAK-TRACKER Hand Held Receiver will reset to its non-alarm state.

5. Finish all respirator checks involving air flow and turn off the cylinder valve. Use the purge valve to release all residual air pressure in the system.

With the cylinder valve OFF:

1. Check the continuing operation of the distress alarm. The distress alarm shall remain active with green light flashing. Do not move respirator, pre-alarm shall occur with twenty (20) seconds. Move respirator slightly, pre-alarm shall reset, green light shall start flashing again.

2. To turn the distress alarm off, press the reset button **twice** (press, release and press again). If there is air pressure left in the system, the green flashing light will continue to flash while a fifteen second beep sequence is heard from the sensor module as the residual air bleeds from the system. As soon as the air has completely bled from system, the unit will sound a quick two tone chirp and the PASS DEVICE distress alarm will be inactive. If there is no pressure in the system when the RESET button is pressed twice, there will be no beep sequence. The distress alarm is now in the "OFF" condition. If there is air pressure in the system, the PASS DEVICE distress alarm will return to the active mode.

NOTE

IF THE LOW BATTERY INDICATION (ONE STEADY CHIRP EVERY TWO (2) SECONDS WITH NO FLASHING LIGHTS) OCCURS AT ANY TIME DURING REGULAR OPERATIONAL INSPECTION, DO NOT USE THE RESPIRATOR. CHANGE THE BATTERIES IN THE SENSOR MODULE IMMEDIATELY AND REPEAT THE REGULAR OPERATIONAL TEST OR TAKE THE RESPIRATOR OUT OF SERVICE UNTIL THE BATTERIES ARE CHANGED AND THE REGULAR OPERATIONAL TEST IS SUCCESSFULLY PERFORMED.

FORMED.

If any operational problems are found during the REGULAR OPERATIONAL INSPECTION, do no use the respirator. Remove the respirator from service and tag for repair by authorized personnel.

WARNING
FOLLOW REGULAR OPERATIONAL INSPECTION PROCEDURE EXACTLY. IF THE SEMS II DISTRESS ALARM DOES NOT ACTUATE, OR IF ANY OTHER FEATURE DOES NOT OPERATE AS DESCRIBED OR IF ANY OTHER OPERATIONAL MALFUNCTION IS NOTED, DO NOT USE THE RESPIRATOR.

WARNING
FOLLOW REGULAR OPERATIONAL INSPECTION PROCEDURE EXACTLY. IF THE SEMS II DISTRESS ALARM DOES NOT ACTUATE, OR IF ANY OTHER FEATURE DOES NOT OPERATE AS DESCRIBED OR IF ANY OTHER OPERATIONAL MALFUNCTION IS NOTED, DO NOT USE THE RESPIRATOR.

WARNING
IF THE LOW BATTERY INDICATION (ONE STEADY CHIRP EVERY TWO (2) SECONDS WITH NO FLASHING LIGHTS) OCCURS AT ANY TIME DURING REGULAR OPERATIONAL INSPECTION, DO NOT USE THE RESPIRATOR. CHANGE THE BATTERIES IN THE SENSOR MODULE IMMEDIATELY AND REPEAT THE REGULAR OPERATIONAL TEST OR TAKE THE RESPIRATOR OUT OF SERVICE UNTIL THE BATTERIES ARE CHANGED AND THE REGULAR OPERATIONAL TEST IS SUCCESSFULLY PERFORMED.

OPERATION OF SENSOR MODULE LIGHTS

When performing the REGULAR OPERATIONAL INSPECTION verify that
the Sensor Module lights are operating as described below:

ACTION...	SENSOR MODULE LIGHTS WILL...
Start up PASS (Open Cylinder)..	Bright Light then Flash GREEN
Normal Operation...	Flash GREEN
Respirator Low air (1/3 cylinder)	Flash ORANGE (alternately)
Low Battery while ON	GREEN light stops flashing
Shut down	Lights OFF
Press RESET w/unit OFF (BATTERY TEST)	Bright Light then:
	Flash GREEN if Good/Flash RED if Low
Press MANUAL ALARM with unit OFF	Flash GREEN then Full Alarm Flash RED
Press RESET from manual alarm	Returns to Flash GREEN
PASS Pre-Alarm	Flash RED (alternately)
PASS Full alarm..	Flash RED (simultaneously)

NOTE
THE ORANGE LIGHT IS A COMBINATION OF THE RED, GREEN, AND BLUE
LIGHTS THAT APPEARS ORANGE FROM A DISTANCE. AT CLOSE RANGE THE
INDIVIDUAL LIGHTS MAY BE VISIBLE.

CLEANING, MAINTENANCE AND STORAGE

Cleaning, maintenance and storage of a respirator with a SEMS II distress alarm shall be done as part of the normal respirator CLEANING AND STORAGE and REGULAR OPERATIONAL INSPECTION as described in the OPERATING AND MAINTENANCE INSTRUCTIONS supplied with each SCOTT respirator.

Refer to the PAK-TRACKER User Instructions, SCOTT P/N 595102-01, provided with the SCOTT PAK-TRACKER Hand Held Receiver for complete details of cleaning and storage of the Hand Held Receiver.

Store the respirator and attached distress alarm in accordance with the OPERATION AND MAINTENANCE INSTRUCTIONS provided with the respirator. Do not store respirators equipped with distress alarms in the proximity of radio antennas or radio transmitter base units. Respirators equipped with SEMS II distress alarms must be stored or transported at least two (2) feet away from radio antennas on fire equipment. Refer to the DETECTING AND AVOIDING RADIO FREQUENCY INTERFERENCE section of this instruction for details.

Clean the exterior of the SEMS II distress alarm while cleaning the exterior of the respirator by wiping with a damp sponge and thoroughly wiping dry. The Signal Light lens on the front of the control console should be cleaned after every use to insure maximum light intensity at all times. Do not use solvents for cleaning or attempt to paint or apply decals to the exterior surfaces of the SEMS II distress alarm.

If during use, the respirator and/or SEMS II distress alarm is suspected of being contaminated by a hazardous substance, the contaminant must be identified and properly removed or the contaminated component(s) must be replaced before next use. Dispose of the contaminant or the contaminated component(s) in accordance with applicable regulatory requirements.

Except for the replacement of batteries, no attempt shall be made to do maintenance or to make adjustments or repairs beyond the scope of this instruction manual without proper training.

MARKING AND PAINTING

Do not mark, etch, paint, drill, or apply labels to any of the SEMS II ACCOUNTABILITY SYSTEM components or housings in any way.

REPLACEMENT PARTS AND SERVICE

The SEMS II distress alarm is covered by a one year warranty.

Consult your Authorized SCOTT Representative, Distributor or Service Center as to the availability of Service and Parts for the SEMS II distress alarm. Replacement Batteries of the type designated are commercially available over the counter, from your SCOTT Distributor, and from most Industrial Battery Distributors.

Except for the replacement of batteries, no attempt shall be made to do maintenance or to make adjustments or repairs beyond the scope of this instruction manual without proper training.

RETIREMENT CRITERIA AND CONSIDERATION

Retirement criteria and consideration shall be determined by SCOTT trained and Certified Overhaul Technicians.

WARNING
READ AND UNDERSTAND THE COMPLETE INSTRUCTION MANUAL BEFORE USING A RESPIRATOR WITH A SEMS II DISTRESS ALARM INSTALLED.

QUICK REFERENCE GUIDE TO USE:

WHEN YOU WANT TO:	YOU DO:	THE SEMS II DISTRESS ALARM DOES:
Turn it on.	Open cylinder valve (cylinder <u>must</u> have air in it).	3 quick audible chirps, green flashing light on control console.
Re-set pre-alarm	Move so that the respirator moves.	Red flashing light changes to green, ascending/descending tone stops.
Re-set full alarm	Press re-set button on control console twice (push, release, push again).	Loud 3 tone chirp stops, 3 quick chirps, then red flashing light changes to green flashing light.
Turn it off (finished with use)	Close respirator cylinder valve, open regulator purge valve letting out all the trapped air, close regulator purge valve, press re-set button twice.	The flashing light goes out and a fifteen (15) second beep sequence occurs as the residual air bleeds off. Unit will sound a two tone chirp at turn off.
Turn on the manual alarm.	Press alarm button on control console (works whether the SEMS II distress alarm is on or off).	Goes into full alarm, loud 3 tone chirps from sensor module and bright <u>red</u> flashing light from control console.

WHEN THE SEMS II DISTRESS ALARM IS:	IT INDICATES THAT:
Quiet. No lights or sound	The SEMS II distress alarm is off or the batteries are used up or removed.
Flashing the green light	The SEMS II distress alarm is on, in sensing mode, and monitoring your motion.
Flashing the red light and sounding an ascending/descending tone.	You have not moved in the last twenty (20) seconds, SEMS II distress alarm will go into full alarm in twelve (12) seconds or less if you do not move.
Flashing the red light and sounding a loud continuous tone	Full alarm: You have not moved in the last thirty (30) seconds or more or you pushed the manual alarm button.
Chirping once every two (2) seconds with no light flashing	The batteries are low. You must put in new batteries before using the SEMS II distress alarm again (it will work in low battery condition long enough to let you finish the cylinder of air you are on).

BATTERY REPLACEMENT

SCOTT respirators equipped with the PAK-ALERT distress alarm require six (6) "AA" cell batteries for operation. The six (6) batteries power the Heads-Up Display, the PASS device, and the PAK-TRACKER Transmitter.

NOTE

THE UNIT WILL RETURN TO THE DEFAULT ID NUMBER IF THE BATTERY COVER IS OPENED AND/OR THE BATTERIES ARE REMOVED. SCOTT RECOMMENDS RE-PROGRAMMING WITH THE RFID CARD IN ACCORDANCE WITH YOUR ORGANIZATION'S PROCEDURES TO ASSURE THAT THE USER'S UNIQUE ID NUMBER IS IN USE AT ALL TIMES.

The batteries should be replaced only by a trained maintenance technician in a clean area known to be nonflammable.

Replace batteries as follows:

1. Close respirator cylinder valve, open regulator purge valve letting out all the trapped air, close regulator purge valve, press the reset button twice. If there is air pressure left in the system, the green flashing light will continue to flash while a fifteen second beep sequence is heard from the Sensor Module as the residual air bleeds from the system. As soon as the air has completely bled from system, the unit will sound a quick two tone chirp and the PASS DEVICE distress alarm will be inactive. If there is no pressure in the system when the RESET button is pressed twice, there will be no beep sequence. If there is air pressure in the system, the PASS DEVICE distress alarm will return to the active mode.

NOTE

ALWAYS BE SURE THAT CYLINDER VALVE IS OFF AND THE PASS DEVICE IS COMPLETELY INACTIVE BEFORE CHANGING BATTERIES. NEVER REMOVE OR REPLACE BATTERIES WITH SYSTEM PRESSURIZED.

USE SCREWDRIVER TO LOOSEN SCREW AND REMOVE COVER
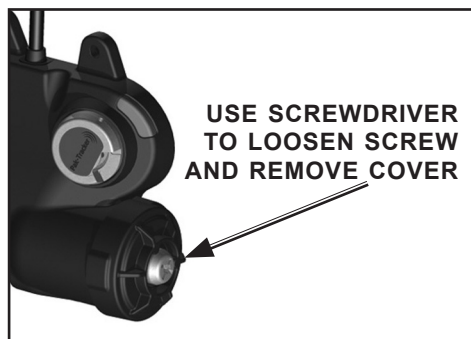
2. When replacing batteries on respirators, remove the cylinder and place the respirator in a clean, non-hazardous area.
3. Use a Phillips driver to remove the Battery Housing Cover. Carefully remove the cover and set aside.
4. Remove used batteries from battery compartment by sliding them out of the battery compartment.
5. Install six (6) fresh new "AA" batteries of the same type. Always replace all batteries at the same time.

   The battery holder is marked with the style and orientation of the batteries required. Use six (6) each of one of the following 1.5 volt AA batteries:
   - Duracell[2] Alkaline MN1500
   - Duracell Alkaline MX1500
   - Duracell Alkaline PC1500
   - Duracell Quantum MV1500
   - Eveready Energizer[3] Alkaline EN91
   - Eveready Energizer Alkaline E91.

   Do not mix batteries. Verify correct orientation of batteries as shown on label inside the battery holder.

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[2] Duracell is a registered trademark of The Procter & Gamble Company, Cincinnati, OH
[3] Energizer is a registered trademark of Eveready Battery Company, Inc., St Louis, MO.

WARNING

THE SEMS II DISTRESS ALARM IS INTENDED TO ASSIST IN LOCATING A PERSON WHO MAY BE IN A LIFE THREATENING SITUATION. FAILURE TO FOLLOW THE INSTRUCTIONS FOR OPENING, CHANGING THE BATTERIES AND RE-CLOSING THE BATTERY COMPARTMENT MAY RESULT IN DAMAGE WHICH COULD CAUSE FAILURE OF THE PASS DURING A LIFE THREATENING EMERGENCY OR COULD CAUSE A FIRE OR EXPLOSION IN A FLAMMABLE OR EXPLOSIVE ATMOSPHERE POSSIBLY RESULTING IN INJURY OR DEATH.

WARNING

BATTERIES MUST ONLY BE CHANGED IN AN AREA KNOWN TO BE NONFLAMMABLE. CHANGING THE BATTERIES IN A FLAMMABLE ATMOSPHERE MAY CAUSE AN IGNITION WHICH COULD RESULT IN SERIOUS INJURY OR DEATH.

CAUTION

RESPIRATOR SYSTEM MUST NOT BE PRESSURIZED WHEN BATTERIES ARE BEING INSTALLED. DAMAGE TO THE ELECTRONIC COMPONENTS MAY RESULT IF BATTERIES ARE INSTALLED WITH SYSTEM PRESSURIZED.

WARNING

ALWAYS INSTALL THE BATTERIES IN THE ORIENTATION SHOWN ON THE LABEL. FAILURE TO PROPERLY INSTALL THE BATTERIES WILL RESULT IN EITHER REDUCED OR NO OPERATION OF THE EQUIPMENT WHICH COULD LEAD TO FAILURE OF THE EQUIPMENT AND SERIOUS INJURY OR DEATH OF THE RESPIRATOR USER.

WARNING

TO REDUCE THE RISK OF EXPLOSION USE BATTERIES ONLY FROM THE LIST PROVIDED, DO NOT MIX OLD BATTERIES WITH UNUSED BATTERIES, AND DO NOT MIX BATTERIES FROM DIFFERENT MANUFACTURERS. UNAUTHORIZED SUBSTITUTION OF COMPONENTS MAY IMPAIR INTRINSIC SAFETY AND CAUSE AN EXPLOSION WHICH COULD LEAD TO SERIOUS INJURY OR DEATH.

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BATTERY REPLACEMENT CONTINUED...

6.   The battery cover must be installed so that it is water tight after replacement. Clean the sealing rib around battery compartment and sealing face of the cover by wiping with a clean damp cloth to remove any dirt or foreign matter which might prevent a proper seal. Check cover gasket for tears or cuts. If damage is found, remove respirator from service and tag for repair by authorized personnel.

7.   To install battery cover, align the three grooves on the cover with the three tabs on the battery compartment and tighten the cover screw.

BE SURE SEALING SURFACES ARE CLEAN BEFORE REASSEMBLY

8.   To test the batteries, verify that the PAK-ALERT distress alarm is in the off condition (cylinder valve closed with no flashing green LED on the control console).

    a) Press and hold the reset button on the console. A GREEN light on the console indicates sufficient battery power and that the batteries are properly installed.

    b) If the unit displays the LOW BATTERY condition or no light at all, verify that the batteries are properly installed. If the batteries were properly installed, remove the batteries and replace with a new set of six (6) batteries.

    c) If another set of properly installed batteries will still not produce a GREEN light on the battery test, remove the unit from service and mark for repair by authorized personnel.

AFTER REPLACEMENT OF BATTERIES, PERFORM A REGULAR OPERATIONAL INSPECTION BEFORE RETURNING RESPIRATOR TO SERVICE.

CHECK YOUR WORK!
BEFORE ASSEMBLY OF BATTERY COVER, CHECK TO SEE ALL BATTERIES ARE FRESH, NEW BATTERIES OF THE TYPE INDICATED ABOVE AND THAT THEY HAVE BEEN INSTALLED PROPERLY.

DETECTING AND AVOIDING
RADIO FREQUENCY INTERFERENCE

When any electronic device is adversely affected by radio waves, Radio Frequency Interference (RFI) is said to have occurred. All electronic devices like the SEMS II distress alarm may be subject to the effects of RFI. Radio transmissions from the antennas of radios including those used by fire fighters, police and other public safety related personnel may produce RFI in the SEMS II distress alarm. RFI may occur while the radio is transmitting if the respirator equipped with the SEMS II distress alarm is in close proximity to a base station or high-powered vehicle mounted radio, or if the antenna of a personal portable hand held radio is touching or within six (6) inches of the Control Console or Sensor Module of the SEMS II distress alarm.

Be aware of the symptoms of RFI. A SEMS II distress alarm affected by RFI may temporarily give false indications such as the sudden sounding of the loud continuous three-tone chirp of the full alarm. In some instances the lights on the control console may flash without sounding the alarm. In rare circumstances, an alarm which was sounding may stop.

If the SEMS II distress alarm exhibits any of the symptoms of RFI, identify the source of the RFI and do the following:

– If the symptoms of RFI occur when standing near a base station transmitting antenna or a truck mounted radio antenna, move away from the antenna until the symptoms stop.

– If the symptoms of RFI occur while transmitting on a hand-held radio, move the radio away from the SEMS II distress alarm.

CHECK THE CONTROL CONSOLE AND BE CERTAIN THE GREEN LIGHT IS FLASHING NORMALLY WHEN THE INTERFERENCE STOPS, REGARDLESS OF THE SOURCE.

In normal usage with the air cylinder open, the SEMS II distress alarm will typically resume normal operation after experiencing RFI.

If the SEMS II distress alarm is affected by RFI when the respirator air supply is turned off or the cylinder is empty, the distress alarm could be turned off during use. If this occurs, depress the RED Manual Alarm Button to activate the alarm.
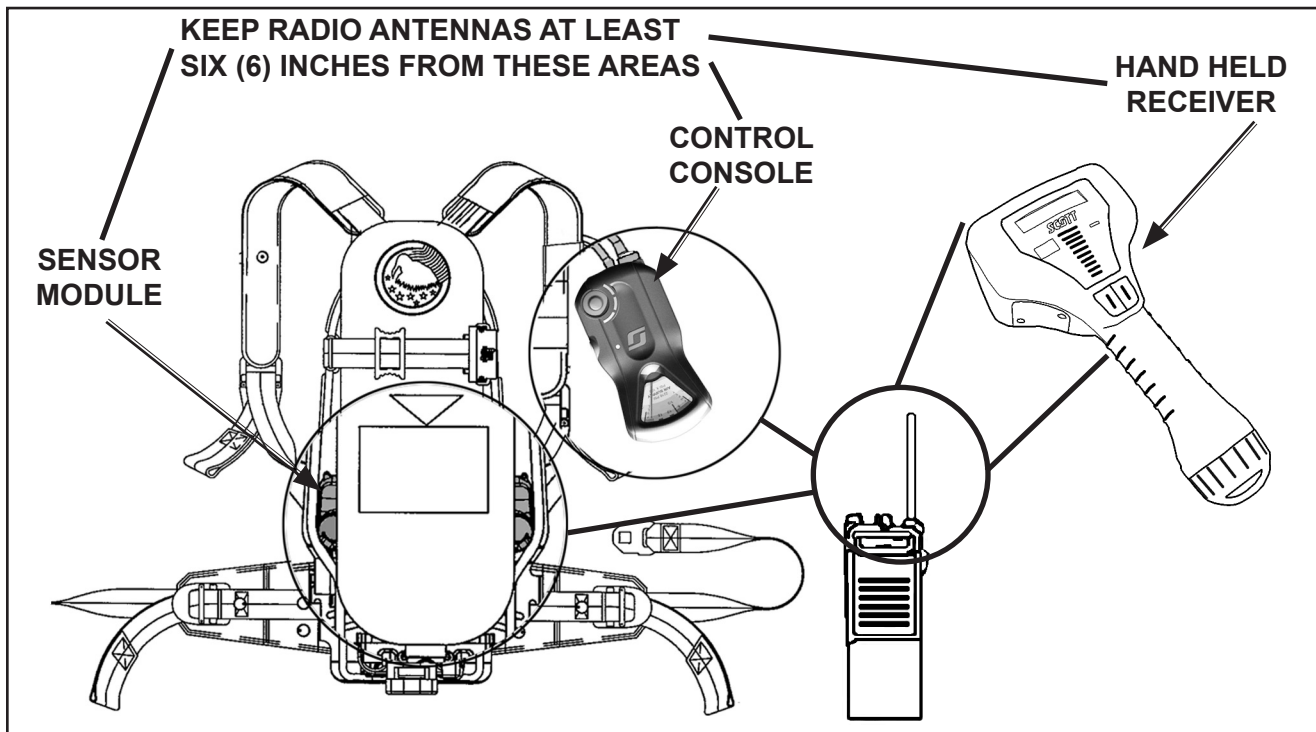
IF THE SYMPTOMS OF RFI OCCUR, THE RESPIRATOR USER MUST CHECK THE SEMS II DISTRESS ALARM TO VERIFY THAT IT IS FUNCTIONING PROPERLY. IF THE GREEN LIGHT ON THE CONTROL CONSOLE DOES NOT RESUME FLASHING IN THE NORMAL MANNER AFTER EXPERIENCING THE SYMPTOMS OF RFI, OR IF THE UNIT CONTINUES TO MALFUNCTION IN ANY OTHER WAY, PROCEED TO A SAFE AREA, REMOVE THE RESPIRATOR FROM SERVICE AND TAG FOR REPAIR BY AUTHORIZED PERSONNEL.

WARNING
KEEP THE ANTENNAS OF HAND-HELD RADIOS AT LEAST SIX (6) INCHES AWAY FROM THE CONTROL CONSOLE AND THE SENSOR MODULE OF THE SEMS II DISTRESS ALARM WHEN TRANSMITTING. CLOSE PROXIMITY OF RADIO EQUIPMENT TO THE SEMS II DISTRESS ALARM DURING RADIO TRANSMISSION MAY CAUSE THE UNIT TO MALFUNCTION. FAILURE TO RECOGNIZE A MALFUNCTION OF THE SEMS II DISTRESS ALARM AND TAKE THE PROPER CORRECTIVE ACTION MAY RESULT A NONWORKING DISTRESS ALARM WHICH WILL NOT SOUND IF THE USER STOPS MOVING AND LEAD TO SERIOUS INJURY OR DEATH.

WARNING
BE AWARE OF THE POTENTIAL EFFECT OF RADIO TRANSMISSIONS FROM BASE STATION OR TRUCK MOUNT RADIOS WHEN USING A RESPIRATOR WITH THE SEMS II DISTRESS ALARM. CLOSE PROXIMITY OF RADIO EQUIPMENT TO THE SEMS II DISTRESS ALARM DURING RADIO TRANSMISSION MAY CAUSE THE UNIT TO MALFUNCTION. FAILURE TO RECOGNIZE A MALFUNCTION OF THE SEMS II DISTRESS ALARM AND TAKE THE PROPER CORRECTIVE ACTION MAY RESULT A NONWORKING DISTRESS ALARM WHICH WILL NOT SOUND IF THE USER STOPS MOVING AND LEAD TO SERIOUS INJURY OR DEATH.

KEEP RADIO ANTENNAS AT LEAST SIX (6) INCHES FROM THESE AREAS

HAND HELD RECEIVER

CONTROL CONSOLE

SENSOR MODULE

RFI WARNING AREAS

Minimize or eliminate the effects of RFI by protecting the SEMS II distress alarm with the following steps:

– Maintain a safe distance from a base station transmitting antenna or a truck mounted radio antenna.
– Keep the antennas of hand held radios at least six (6) inches away from the CONTROL CONSOLE or the SENSOR MODULE.

RFI AND THE PAK-TRACKER HAND HELD RECEIVER

If the Hand Held Receiver experiences RFI, it may be necessary to remove the Hand Held Receiver from service. In a known safe, non-hazardous area, remove and reinstall the batteries to reset the unit (see the BATTERY REPLACEMENT section of the PAK-TRACKER Locator System User Instructions, SCOTT P/N 595102-01). Then inspect and return the Hand Held Receiver to service.

SAFETY LISTINGS

FCC COMPLIANCE

FCC Compliance Statement (Part 15.19)

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference, and
2. This device must accept any interference received, Including interference that may cause undesired operation.

FCC Warning (Part 15.21)

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This portable transmitter with its antenna complies with FCC/IC RF exposure limits for general population / uncontrolled exposure.

The X3 SEMS II Control Console Transmitter has been assigned FCC ID:T5E201122 / The X3 SEMS II with BLUETOOTH Control Console Transmitter has been assigned FCC ID: T5E201122A

CLASS B DIGITAL DEVICE

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

– Reorient or relocate the receiving antenna
– Increase the separation between the equipment and receiver.
– Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
– Consult the dealer or an experienced radio/TV technician for help.

INDUSTRY CANADA COMPLIANCE

Industry Canada Statement

The term "IC" before the certification / registration number only signifies that the Industry Canada technical specifications were met.

Section 14 of RSS-210

The installer of this radio equipment must ensure that the antenna is located or pointed such that it does not emit RF field in excess of Health Canada limits for the general population. Consult Safety Code 6, obtainable from Health Canada's web site: www.hc-sc.gc.ca/rpb.

This Device complies with Industry Canada License-exempt RSS standard(s). Operation is subject to the following two conditions:

1. this device may not cause interference, and
2. this device must accept any interference, including interference that may cause undesired operation of the device.

IC ID: 6453A-201122 / 6453A-201122A

LA DÉCLARATION DE CANADA D'INDUSTRIE

L' « IC » de terme avant que la certification/le nombre d'enregistrement signifie seulement que le Canada d'Industrie spécifications techniques ont été rencontrées.

Sectionner 14 de RSS-210

Le programme d'installation de cet équipement de radio doit garantir que l'antenne est localisée ou tel est indiqué qu'il n'émet pas le champ de RF dépassant les limites de Canada de Santé pour la population générale. Consulter le Code de Sécurité 6, procurable du site Web de Canada de Santé : www.hc-sc.gc.ca/rpb.

Cet appareil est conforme aux normes Industry Canada exemptes de licence RSS standard(s). L'opération est assujetti au suivre deux conditions :

1) cet appareil ne peut pas causer l'intervention, et
2) cet appareil doit accepter de l'intervention, y compris l'intervention qui peut causer l'opération non désirée de l'appareil.

IC ID: 6453A-201122 / 6453A-201122A

CAUTION

DO NOT USE A FIBERGLASS WRAPPED ONE HOUR CYLINDER ON A MODEL 4.5 AIR-PAK EQUIPPED WITH A PAK-ALERT DISTRESS ALARM AS THE WEIGHT WILL EXCEED THE 35 LBS APPROVAL LIMIT FOR SCBA'S ESTABLISHED BY NIOSH.

RADIO FREQUENCY INTERFERENCE (RFI)

When any electronic device is adversely affected by radio waves, Radio Frequency Interference (RFI) is said to have occurred. All electronic devices like the SEMS II distress alarm may be subject to the effects of RFI, most of which are temporary in nature. Users of the SCOTT SCBA with the integrated SEMS II distress alarm must be familiar with the normal operation of the distress alarm and must also be familiar with how to identify and avoid the effects of RFI (see DETECTING AND AVOIDING RADIO FREQUENCY INTERFERENCE on page 6). If RFI occurs to the SEMS II distress alarm, it may be caused by transmissions from hand-held or personal radios where the radio antenna is touching or very close to (less than 6 inches from) components of the SEMS II distress alarm. It may also be caused by transmissions from base stations or high-powered vehicle mounted radios or any other powerful source of electromagnetic radiation.

INTRINSICALLY SAFE LISTING

The SEMS II distress alarm with Integrated Locator transmitter, Model Number 200451-SERIES, when installed on a SCOTT respirator, is listed as intrinsically safe per ANSI/UL Std. UL-913 in Class I, II, Division 1, Groups C, D, E, F, and G hazardous locations by SGS U. S. TESTING COMPANY, Inc. Only when powered by the batteries listed in this instruction or indicated on the label on the sensor module.

To maintain Intrinsic Safety Listing, inspect the respirator with SEMS II distress alarm regularly per the Regular Operational Inspection procedures in this instruction. Substitution of Components May Impair Intrinsic Safety. To reduce the risk of ignition of a flammable atmosphere, batteries must only be changed in an area known to be nonflammable. To reduce the risk of explosion, use only the approved batteries, do not mix old batteries with unused batteries, or mix batteries from different manufacturers.

HAND HELD RECEIVER NON-INCENDIVE LISTING

The SCOTT PAK-TRACKER LOCATOR SYSTEM Hand Held Receiver P/N 200397-02 is listed by SGS U. S. TESTING COMPANY, Inc. as Non-Incendive per ANSI/UL Std. UL-1604 for use in Class I Division 2 Groups A, B, C, and D hazardous locations. Temperature Code T4 (-25° C to 85° C). To maintain the Non-Incendive Listing, the equipment must be inspected regularly per the following Regular Operational Inspection procedures. Do not tamper with or substitute components in any manner. Use only SCOTT Battery Pack P/N 200402-02. Open the battery compartment *only* in an area known to be free of flammable or explosive hazards.

WARNING – Substitution of Components May Impair the Non-Incendive Listing. To reduce the risk of ignition of a flammable atmosphere, battery must only be changed in an area known to be nonflammable. Do not substitute any other battery or power source.

WARNING

SUBSTITUTION OF COMPONENTS MAY IMPAIR INTRINSIC SAFETY. TO REDUCE THE RISK OF IGNITION OF A FLAMMABLE ATMOSPHERE, BATTERIES MUST ONLY BE CHANGED IN AN AREA KNOWN TO BE NONFLAMMABLE. TO REDUCE THE RISK OF EXPLOSION, DO NOT MIX OLD BATTERIES WITH UNUSED BATTERIES, OR MIX BATTERIES FROM DIFFERENT MANUFACTURERS.

WARNING

RADIO FREQUENCY INTERFERENCE (RFI) MAY CAUSE A MALFUNCTION OF THE SEMS II PERSONAL DISTRESS ALARM. USERS OF RESPIRATORS EQUIPPED WITH THE SEMS II PERSONAL DISTRESS ALARM MUST BE AWARE OF THE PROPER OPERATION OF THE DISTRESS ALARM. FAILURE TO RECOGNIZE A MALFUNCTION OF THE EQUIPMENT AND TAKE PROPER CORRECTIVE ACTION MAY RESULT FAILURE OF THE SEMS II PERSONAL DISTRESS ALARM AND LEAD TO SERIOUS INJURY OR DEATH.

WARNING

IF THE SEMS II DISTRESS ALARM IS USED IN AN AREA OF EXPLOSIVE OR FLAMMABLE HAZARDS, FAILURE TO REGULARLY INSPECT AS INSTRUCTED, FAILURE TO CORRECT DAMAGE BEFORE USE, OR THE INSTALLATION OF INCORRECT BATTERIES MAY LEAD TO A FIRE OR EXPLOSION WHICH MAY RESULT IN PERSONAL INJURY OR DEATH.

WARNING

FAILURE TO REGULARLY INSPECT THE HAND HELD RECEIVER AS DESCRIBED IN THIS INSTRUCTION OR FAILURE TO CORRECT ANY DAMAGE FOUND, MAY IMPAIR THE SAFETY OF THE EQUIPMENT. THE INSTALLATION OF INCORRECT BATTERY OR SUBSTITUTION OF ANY OTHER COMPONENTS MAY IMPAIR THE SAFETY OF THE EQUIPMENT. IF THE EQUIPMENT IS USED IN AN EXPLOSIVE OR FLAMMABLE ATMOSPHERE, IMPAIRING THE SAFETY OF THE UNIT MAY LEAD TO A FIRE OR AN EXPLOSION WHICH COULD RESULT IN SERIOUS INJURY OR DEATH.

WARNING

REPLACE HAND HELD RECEIVER BATTERY PACK ONLY WITH SCOTT BATTERY PACK, PART NO. 200402-02. DO NOT REMOVE, RE-CHARGE, OR REPLACE BATTERY PACK WHILE THE DEVICE IS IN A HAZARDOUS LOCATION. REMOVING, RE-CHARGING, OR REPLACING THE BATTERY PACK WHILE THE DEVICE IS IN A HAZARDOUS LOCATION MAY LEAD TO A FIRE OR AN EXPLOSION WHICH COULD RESULT IN SERIOUS INJURY OR DEATH.

SEMS II DISTRESS ALARM
PERFORMANCE SPECIFICATIONS
Sound Levels:

    Pre-Alarm........................... 80 to 105 dBA incrementally at left ear
    Full-Alarm........................... 95 to 100 dBA @ 9.9 Ft. (3m)
    Frequency Range .... 1.5 KHz to 4 KHz

Battery Life (fresh batteries)
Alkaline Batteries:
    Automatic (green flashing light, no sound)..............Approx. 20 hours
    Full Alarm (red flashing light, 95 dBA sound)........ .Approx. 8 hours

Compliance
The SCOTT SEMS II distress alarm is a NIOSH approved accessory for use on only the following SCOTT SCBA respirators:
(NIOSH approval numbers have been included for identification):

SCOTT AIR-PAK X3 SNAP-CHANGE SCBA

SCOTT 2.2 AIR-PAK X3 (30 min.)	TC-13F-0712CBRN
SCOTT 4.5 AIR-PAK X3 (30 min.)	TC-13F-0714CBRN
SCOTT 4.5 AIR-PAK X3 (45 min.)	TC-13F-0716CBRN
SCOTT 4.5 AIR-PAK X3 (60 min.)	TC-13F-0718CBRN
SCOTT 5.5 AIR-PAK (30 min.)	TC-13F-0720CBRN
SCOTT 5.5 AIR-PAK (45 min.)	TC-13F-0722CBRN
SCOTT 5.5 AIR-PAK (60 min.)	TC-13F-0724CBRN
SCOTT 5.5 AIR-PAK (75 min.)	TC-13F-0726CBRN

SCOTT AIR-PAK X3 CGA SCBA

SCOTT 2.2 AIR-PAK X3 (30 min.)	TC-13F-0711CBRN
SCOTT 4.5 AIR-PAK X3 (30 min.)	TC-13F-0713CBRN
SCOTT 4.5 AIR-PAK X3 (45 min.)	TC-13F-0715CBRN
SCOTT 4.5 AIR-PAK X3 (60 min.)	TC-13F-0717CBRN
SCOTT 5.5 AIR-PAK (30 min.)	TC-13F-0719CBRN
SCOTT 5.5 AIR-PAK (45 min.)	TC-13F-0721CBRN
SCOTT 5.5 AIR-PAK (60 min.)	TC-13F-0723CBRN
SCOTT 5.5 AIR-PAK (75 min.)	TC-13F-0725CBRN

NOTE
DO NOT USE A FIBERGLASS WRAPPED ONE HOUR CYLINDER ON A MODEL 4.5 AIR PAK EQUIPPED WITH A SEMS II DISTRESS ALARM AS THE WEIGHT WILL EXCEED THE 35 LBS APPROVAL LIMIT FOR SCBA's ESTABLISHED BY NIOSH.

PERSONAL COMPUTER
The personal computer Base Station environmental operating parameters are totally dependant on the limitations of the personal computer used with the SCOTT SEMS II Accountability System. Do not use the personal computer Base Station in environments for which it is not designed. Handle the personal computer according to the instructions provided with the personal computer.

EXPORT AND IMPORT
The international transport of the SCOTT SEMS II Accountability System and portions thereof is regulated under United States export regulations and may be regulated by the import regulations of other countries.
If you have any questions or concerns regarding these regulations, contact SCOTT at 1-800-247-7257 (or 704-291-8300 outside the continental United States).

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END USER LICENSE AGREEMENT

IMPORTANT-READ CAREFULLY: THIS IS A LEGAL AGREEMENT BETWEEN YOU, A SINGLE ENTITY (AS DEFINED IN SECTION 11 BELOW) ("YOU[R]") AND SCOTT TECHNOLOGIES, INC. d/b/a SCOTT HEALTH AND SAFETY, 4320 GOLDMINE ROAD, MONROE, NC 28110 ("SCOTT") PERTAINING TO THE SOFTWARE YOU ARE ABOUT TO INSTALL, COPY, ACCESS OR OTHERWISE USE (SINGULARLY AND COLLECTIVELY, THE "SOFTWARE"). SCOTT LICENSES THE SOFTWARE TO YOU ONLY UPON THE EXPRESS CONDITION THAT YOU ACCEPT ALL OF THE TERMS AND CONDITIONS CONTAINED IN THIS LICENSE AGREEMENT (THE "AGREEMENT"). YOU SHOULD CAREFULLY READ THE FOLLOWING TERMS AND CONDITIONS BEFORE ACCESSING THE SOFTWARE. BY OPENING THE SEALED PACKAGE, INSTALLING, COPYING, ACCESSING OR OTHERWISE USING THE SOFTWARE, YOU ACCEPT THESE TERMS AND CONDITIONS AND UNDERSTAND THAT THEY WILL BE LEGALLY BINDING ON YOU. IF YOU DO NOT AGREE TO THE TERMS, THEN SCOTT IS UNWILLING TO LICENSE THE SOFTWARE TO YOU. IF YOU DO NOT AGREE WITH THEM, OR DO NOT WANT THEM BINDING ON YOU, YOU MUST NOT INSTALL, COPY, ACCESS OR OTHERWISE USE THE SOFTWARE AND YOU MAY RETURN THE SOFTWARE FOR A FULL REFUND (LESS ANY SHIP-PING FEES) WITHIN THIRTY (30) DAYS OF YOUR LICENSE PURCHASE DATE.

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END USER LICENSE AGREEMENT CONTINUED...

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7. **JAVA**. The Software may contain support for programs written in Java. Java technology is not fault tolerant and is not designed, manufactured, or intended for use or resale as on-line control equipment in hazardous environments requiring fail-safe performance, such as in the operation of nuclear facilities, aircraft navigation or communication systems, air traffic control, direct life support machines, or weapons systems, in which the failure of Java technology could lead directly to death, personal injury, or severe physical or environmental damage.

8. **Export Restrictions / Restricted Rights for US Government Customers**. You shall not to export or re-export the Software, any part thereof, or any process or service that is the direct product of the Software (collectively referred to as the "Restricted Components"), to any country, person or entity subject to U.S. export restrictions. You specifically agree not to export or re-export any of the Restricted Components (i) to any country to which the U.S. has embargoed or restricted the export of goods or services, which currently include, but are not necessarily limited to the Balkans, Belarus, Burma, Cuba, Iran, Iraq, Liberia, Libya, North Korea, Sudan, Syria, and Zimbabwe (the foregoing list is subject to change - see http://www.treas.gov/offices/enforcement/ofac/programs/), or to any national of any such country, wherever located, who intends to transmit or transport the products back to such country; (ii) to any entity You know or have reason to know will utilize the Restricted Components in the design, development or production of nuclear, chemical or biological weapons; or (iii) to any entity You know or have reason to know has been prohibited from participating in U.S. export transactions by any federal agency of the U.S. government. The Software may be a "commercial item" as that term is defined in 48 C.F.R. 2.101 (October 2004), consisting of "commercial computer software" and "commercial computer software documentation" as such terms are used in 48 C.F.R. 12.212 (October 2004) and "commercial computer software," "computer databases," "computer programs," and "computer software documentation" as such terms are defined in DFARS 252.227-7014(a) (June 1995). Consistent with 48 C.F.R. 12.212, 48 C.F.R. 27.405(b) (October 2004), 48 C.F.R. 227.7202-3 (October 2004), and DFARS 227.7202-3 (October 1998), all U.S. Government users acquire the Software with only those rights as set forth herein. Manufacturer is Scott Technologies, Inc. d/b/a Scott Health and Safety, 4320 Goldmine Road, Monroe, NC 28110.

9. **Equitable Relief**. You acknowledge that, at the time this Agreement is entered, it would be impossible or inadequate to measure and calculate all of SCOTT's damages for the breach of certain provisions of this Agreement, including without limitation Section 3.1, and that it would require a court of competent jurisdiction to ascertain SCOTT's damages. Accordingly, if you breach or threaten to breach any of your obligations, other than payment when due, SCOTT shall be entitled, without showing or proving any actual damage sustained, to a stipulated temporary restraining order, and shall thereafter be entitled to apply for a preliminary injunction, permanent injunction, and/or order compelling specific performance, to prevent the breach of your obligations under this Agreement. Nothing in this Agreement shall be interpreted as prohibiting SCOTT from pursuing or obtaining any other remedies as otherwise available to it for such actual or threatened breach, including recovery of damages.

10. **Governing Law/Jurisdiction**. This Agreement shall be exclusively interpreted, construed and enforced in all respects in accordance with the laws of the State of North Carolina (U.S.A.) without reference to its choice of law rules. Notwithstanding the foregoing, no action brought by either Party against the other for breach of this Agreement shall be limited to breach of contract remedies and either Party may bring any additional cause(s) of action that would otherwise be available to it, including and only as applicable based on the facts presented, copyright infringement pursuant to Title 17 of the United States Code. You hereby expressly and specifically waives any objection You may have, pursuant to the Eleventh Amendment to the United States Constitution or otherwise, to the jurisdiction of, or any award that could be granted by, the United States Federal Courts.

11. **General**. As used in this Agreement "**Affiliate**" means each: (i) individual, corporation, partnership, limited liability company, limited liability partnership, practice, association, joint stock company, trust, unincorporated organization or other venture or business vehicle (each an "**Entity**") in which SCOTT directly or beneficially owns a twenty percent (20%) or greater equity interest; or (ii) Entity which, directly or indirectly, is in control of, is controlled by or is under common control with SCOTT; or (iii) the ultimate parent of SCOTT and any Entity which is owned or controlled, directly or indirectly, by the ultimate parent; or (iv) Entity that is a legally recognized franchisee or distributor of SCOTT. For the purpose of this definition, control of an Entity includes the direct or indirect power, whether or not exercised: (a) to vote fifty percent (50%) or more of the securities or other interests having ordinary voting power for the election of directors or other managing authority of such Entity; or (b) to direct or cause the direction of the management or policies of such Entity, whether through ownership of voting securities, partnership interest or equity, by contract or otherwise. This Agreement sets forth the entire agreement and understanding of the parties relating to the subject matter herein and merges and supersedes all prior agreements, writings, commitments, discussions and understandings between them, including without limitation any license agreement embedded in the software. No modification of or amendment to this Agreement, nor any waiver of any rights under this Agreement, shall be effective unless in writing signed by the parties. If any provision of this Agreement is held by a court of competent jurisdiction to be invalid, prohibited, or unenforceable in any jurisdiction, such provision shall, as to such jurisdiction, be ineffective solely in such jurisdiction and only to the limited extent it is found to be invalid, prohibited, or unenforceable, and each and every remaining provision of this Agreement shall remain in full force and effect as if such invalid, prohibited, or unenforceable provision never had been included.. This Agreement shall be construed within its fair meaning and no inference shall be drawn against the drafting Party in interpreting this Agreement.

YOU HEREBY ACKNOWLEDGE THAT YOU HAVE READ THIS AGREEMENT, UNDERSTAND IT, AND AGREE TO BE BOUND BY ITS TERMS AND CONDITIONS.

NOTICE: THESE USER INSTRUCTIONS ARE TO BE REMOVED ONLY BY THE END USER.

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SCOTT SAFETY

LIMITED WARRANTY ON NFPA 1981 AND NFPA 1982, 2013 COMPLIANT AIR-PAK SCBA 2.2/4.5/5.5 PRODUCTS

Scott Safety (SCOTT) warrants NFPA 1981 and NFPA 1982, 2013 Compliant AIR-PAK SCBA 2.2/4.5/5.5 PRODUCTS (THE PRODUCTS) to be free from defects in workmanship and materials for a period of ten (10) years from the date of original manufacture by SCOTT. This warranty applies to all components of THE PRODUCTS including all accessories and optional equipment purchased and supplied at the time of original sale of THE PRODUCTS, EXCEPT pressure reducers, electrically operated devices, consumable supplies and carrying cases. SCOTT warrants all pressure reducers supplied with THE PRODUCTS to be free from defects in workmanship and materials for a period of fifteen (15) years from the date of original manufacture by SCOTT. SCOTT warrants all electrically operated devices supplied with THE PRODUCTS to be free from defects in workmanship and materials for five (5) years from the date of original manufacture by SCOTT. SCOTT further warrants all communications devices, unused consumable supplies, and carrying cases supplied with THE PRODUCTS to be free from defects in workmanship and materials for one (1) year from the date of original manufacture by SCOTT. SCOTT's obligation under this warranty is limited to replacing or repairing (at SCOTT's option) THE PRODUCTS or components shown to be defective in either workmanship or materials.

Only personnel of SCOTT or, when directed by SCOTT, authorized SCOTT agents are authorized to perform warranty obligations. This warranty does not apply to defects or damage caused by any repairs of or alterations to THE PRODUCTS made by owner or any third party unless expressly permitted by SCOTT product manuals or by written authorization from SCOTT. To obtain performance under this warranty, and as a condition precedent to any duty of SCOTT, the purchaser must return such products to SCOTT, a SCOTT authorized distributor or a SCOTT authorized service center. Any product returned to SCOTT shall be sent to "SCOTT SAFETY" (Attn: Warranty Claim Dept.), P.O. Box 569, Monroe, NC 28111.

This warranty does not apply to any malfunction of or damage to THE PRODUCTS resulting from accident, alteration, misuse or abuse.

THIS WARRANTY IS MADE IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. IN ADDITION, SCOTT EXPRESSLY DISCLAIMS ANY LIABILITY FOR SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES IN ANY WAY CONNECTED WITH THE SALE OR USE OF SCOTT SAFETY PRODUCTS, AND NO OTHER FIRM OR PERSON IS AUTHORIZED TO ASSUME ANY SUCH LIABILITY.

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A Tyco International Company

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