

NFPA 2013 Product Offering



CANADA

ALBERTA INDUSTRIAL FIRE PROTECTION ASSOCIATION



Agenda



- NFPA Standards Review
- AV-3000 HT Facepiece
- SCBA Overview (Air-Pak X3 & AP75)
- PASS Overview
 - PASS
 - Pak-Tracker
 - SEMS II with Imperium ICS
- EPIC 3 Communications

NFPA 1981/1982 Standard Revisions



NFPA Standard Revisions



NFPA 1981 – Standard on Open-Circuit Self-Contained Breathing Apparatus (SCBA)



NFPA 1982 – Standard on Personal Alert Safety Systems (PASS)



Current Status

- The issuance date of the standards was November 27, 2012
- The standards were published on March 2, 2013
- **Scott Safety is now shipping NFPA 2013 approved Air-Pak X3 and Air-Pak 75 SCBA**
 - NFPA 2013 approvals were received on March 21, 2014
 - SCBA manufacturers are not permitted to ship NFPA 2007 edition product on or after June 30, 2014

NFPA 1981 and 1982, 2013 Edition Changes



NFPA 1981, 2013 Edition Changes



NFPA 1981, 2013 Edition – “Standard on Open-Circuit Self-Contained Breathing Apparatus for Emergency Services”

- Changing Primary EoSTI from 25% to 33%
 - HUD – 100%, 75%, 50%, 33%
- EBSS “Buddy Breathing” Standard
 - A universal low-pressure connection is not required
- Intrinsic Safety Standards
 - Edition 6, Class I, Div I
- Quick-Connect Regulator Fitting Change
 - To ensure HUD connection at all times



NFPA 1981, 2013 Edition Facepiece Requirements



Flame and Heat Test Requirements

High Heat and Flame Resistance Performance

Soak @ 500° F for 5 minutes

10 Second flame exposure

6 in drop test

System has to stay positive for 24 minutes following these tests, regardless of the cylinder size

Breathing rate = 40 L/min @ 24 breaths/min

Radiant heat Resistance Performance

Expose mask to radiant heat load of 15 kW/m² for 5 min

System has to stay positive for 24 minutes regardless of the cylinder size

Breathing at 40 L/min @ 24 breaths/min



NFPA 1981, 2013 Edition Facepiece Requirements



Voice Communications Requirements

Mechanical Communication Performance

Mechanical communications is required

STI = 0.55 @ 1.5 meters

Background / pink noise is present

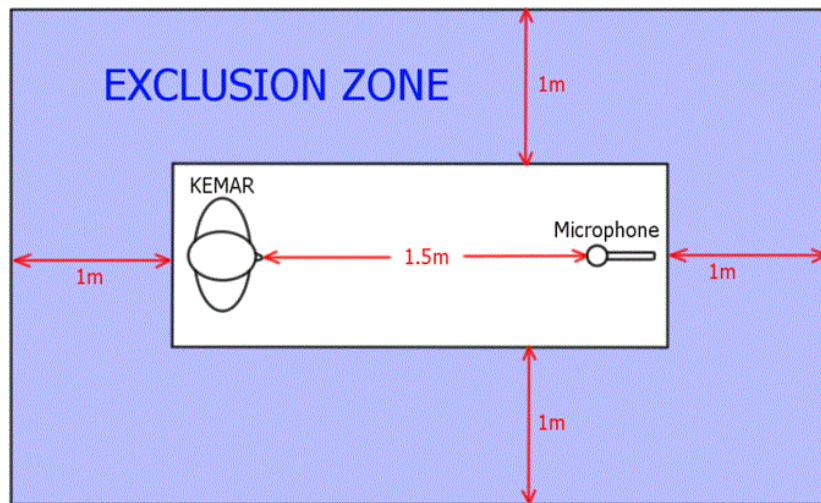
Must also have any electronic communications devices attached and powered off during testing

Amplified Communication Performance

Amplifier is still considered accessory

STI = 0.60 @ 1.5 meters

Background / pink noise is present



NFPA 1982, 2013 Edition Changes



NFPA 1982, 2013 Edition – “Standard on Personal Alert Safety Systems for the Fire Service”

- Universal Sounding PASS
 - To have more consistent alarm sounds on the fire ground
- Intrinsic Safety Standards
 - Edition 6, Class I, Div I



Scott 2013 Product Offering



Scott 2013 Product Offering



- Scott has designed a new portfolio of products to meet the stringent requirements of NFPA 2013.
- These products are built off of Scott's proven designs, but with key innovations to further enhance **comfort, durability, and fireground communications.**



AV-3000HT
Facepiece



Air-Pak X3 SCBA



EPIC 3 Voice
Communications

Voice of the Customer Input

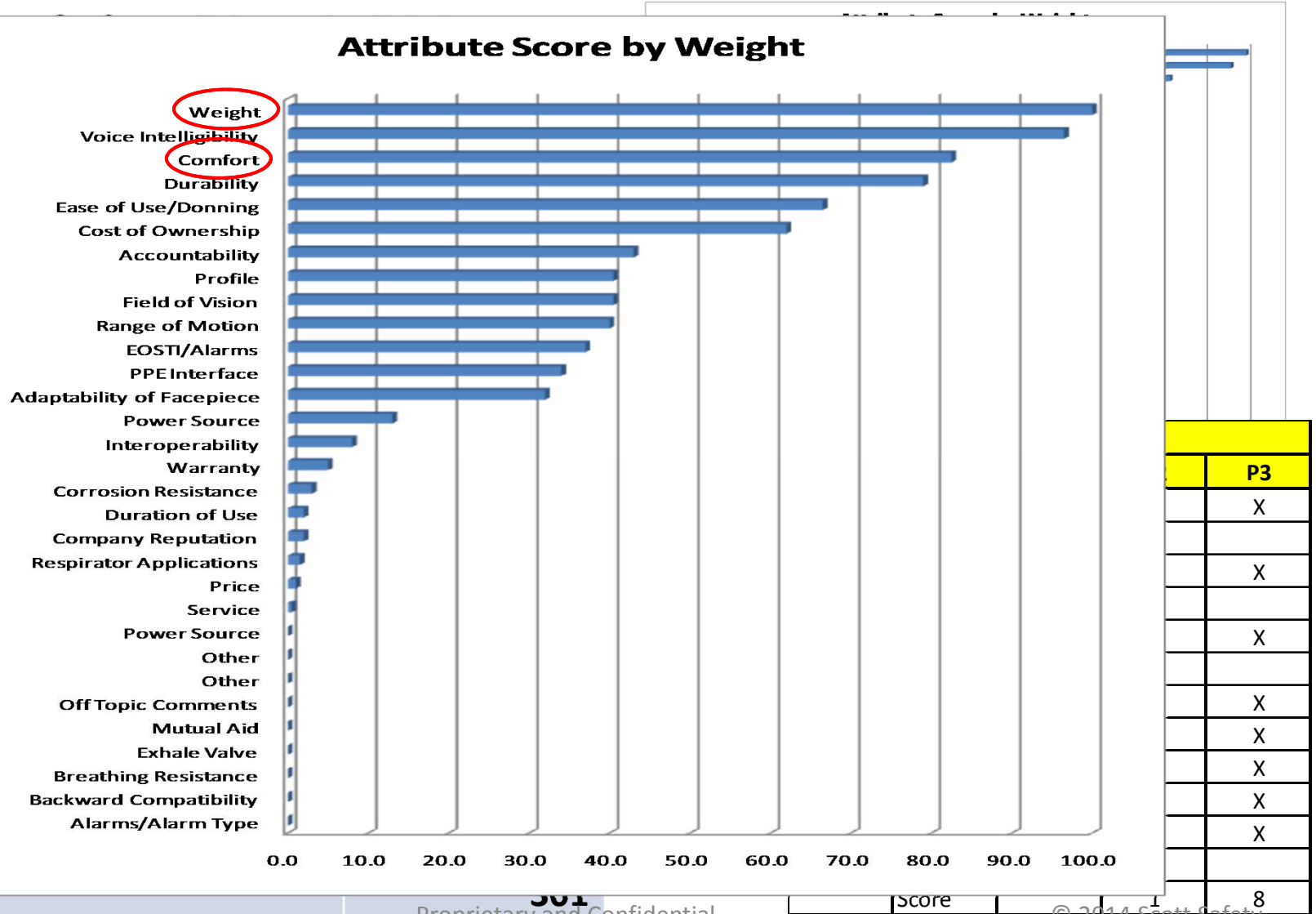


End-User Input (VOC)



- So
- ne
- Th
- an

- Feed
- Initial
- UAC
- Com
- RM C
- Cons
- Com
- VOB
- FDIC
- Total



NFPA 2013 Value Proposition



Air-Pak SCBA Value Proposition



Scott Safety's Air-Pak SCBA is the most **trusted**, **durable** and **easy to use** SCBA in the fire service, and is the only SCBA to meet the stringent requirements to be labeled "Made in the USA."

- **Trusted** based on its proven reliability and redundancy of safety features
- Unmatched **durability**, providing the lowest Cost of Ownership
- **Easy-to-use**, due to extensive firefighter design input and real-life testing

AV-3000 HT Facepiece



Introducing the AV-3000 HT Facepiece



Advanced Technology, Proven Design



- Proven AV-3000 SureSeal faceseal technology for superior comfort and fit
 - Reverse Reflex U-Shaped Channel
- Designed for Top Down Convertibility to reduce fit testing, training and inventory for lower cost of ownership
- Meets the new 2013 Edition testing requirements for high heat and flame, radiant heat, and increased voice intelligibility

AV-3000 HT Facepiece - Features & Benefits



Proven **AV-3000 SureSeal** faceseal technology for **greater comfort** and **reliable fit**

High visibility inhalation valves for easy inspection and added safety

High temp polycarbonate lens and high temp nylon bezel for **added durability** and enhanced wearer safety



ANSI/ISEA Z87.1-2010 Standard. **Impact rated Z87+**

Redesigned ducts for **improved voice intelligibility**, with or without electronic communications

New open bracket with robust attachment for added safety



Top Down Convertibility reduces fit testing, inventory cost, and training for lower cost of ownership

Right or left side mounting for user preference

AV-3000 HT Facepiece - Innovative AND Smart



Advanced Technology, Proven Design



- Backward compatible – Customers can purchase AV-3000 HT and retain NFPA approvals with '02 or '07 Edition SCBA
- Forward compatible – Customers can purchase AV-3000 HT facepieces now for use with their '02 or '07 Edition SCBA, and upgrade to 2013 Edition SCBA at a later time

AV-3000 HT Facepiece - Approvals



SCBA	Approved with AV-3000 HT Facepiece
'97 Air-Pak Fifty	No
'02 Air-Pak Fifty	Yes
'02 Air-Pak NxG2	Yes
'07 Air-Pak 75	Yes
'07 Air-Pak NxG7	Yes
'13 Air-Pak 75	Yes
'13 Air-Pak X3	Yes

Top Down Convertibility:

- AV-3000 HT approvals received:
 - Air-Pak 75i
 - ISCBA
 - APR with 742 cartridges and 40 mm cartridges
 - Proflow 2 PAPR
 - C420 Plus PAPR
 - ACSi SCBA
 - SWAT-Pak SCBA
 - E-Z Airline Respirator
 - Ska-Pak family of respirators
- AV-3000 HT approvals pending
 - CBRN APR (Estimated October 2015)

Air-Pak X3 SCBA



Introducing the Air-Pak X3 SCBA



The Air-Pak X3 SCBA platform was driven by the NFPA 2013 changes, the Value Proposition, and End-User Input (VOC). The result is:

- Emphasis on **enhanced comfort**
- Improved **hose and wire management**
- Better **weight distribution**
- Ease of **serviceability**
- Enhanced **fire ground communications**
 - Electronics that are forward compatible for blue-tooth technology, radio compatibility and Air-Pak status recognition
- AV-3000 HT facepiece with
 - Improved communications due to optimized location of voicemitters
 - Accommodates the EPIC 3 family for voice communications



Air-Pak X3 - Comfort



Item	Comfort	Features	Benefits
1	Weight Management	Waist-mounted pressure reducer	Less stress on shoulders; Optimized center of gravity
2	Ergonomic Design	Design focused on backplate contours	Reduced pressure points along back
3	New Harness Configuration	Articulating shoulder strap assembly Sewn Drag Rescue Loop (DRL)	Mirrors movement of wearer during reaching and other exercises; Resistant to shoulder pad rolling



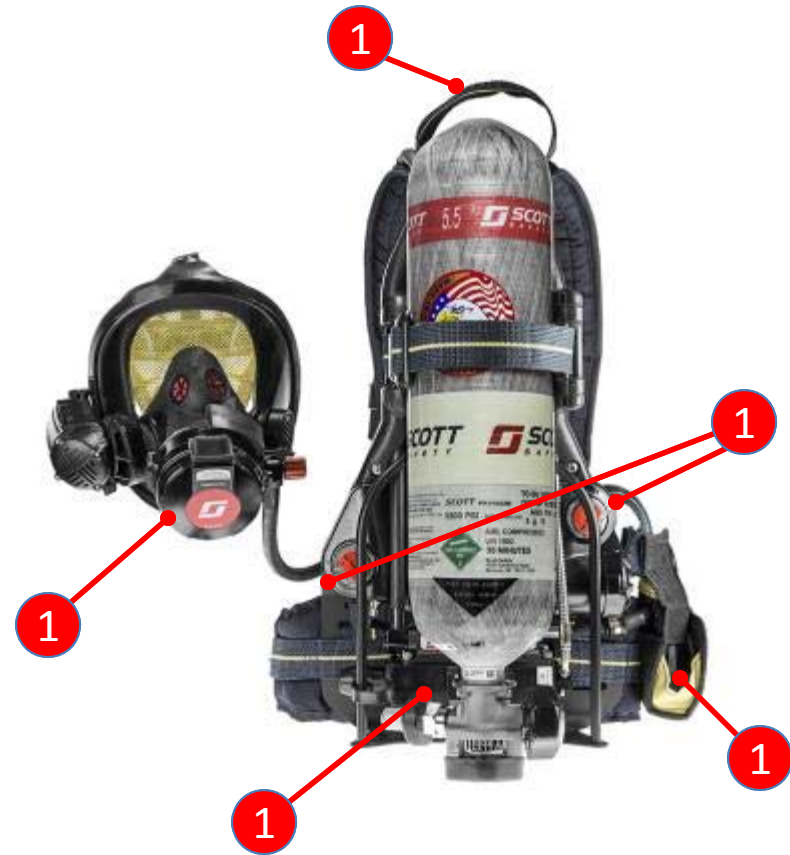
Waist-Mounted Reducer available with either a CGA or Snap-Change Cylinder Connection



Air-Pak X3 - Safety



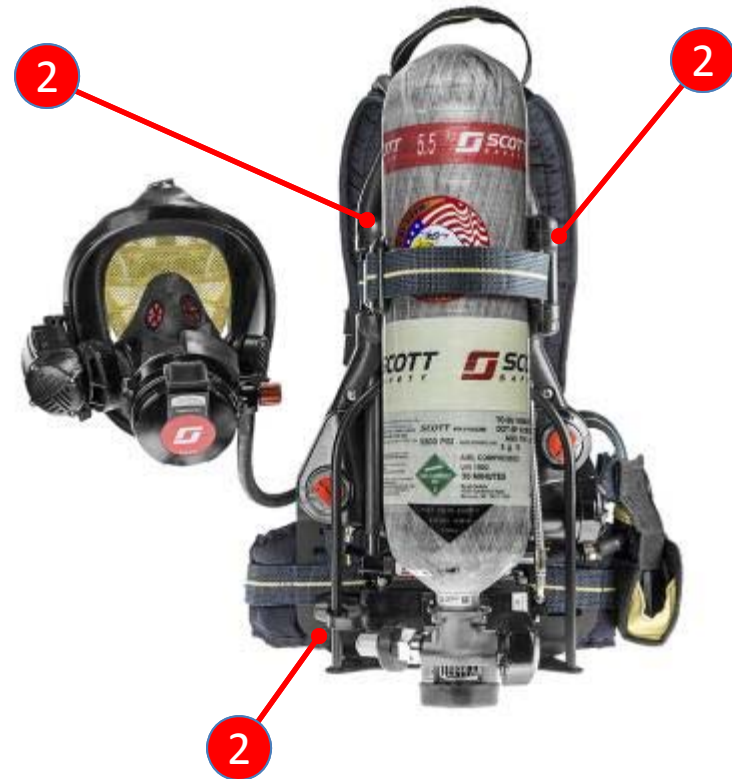
Item	Safety	Features	Benefits
1	Redundancy	Pressure Reducer, Vibralert, Piezos, "Buddy Lights", Dual EBSS, Drag Rescue Loop (DRL)	Redundancy of safety features gives firefighters the confidence their equipment will not fail
2	Streamlined Design	Hose / Wire Management, Cylinder Latch, RIC/UAC Fitting	Minimizes chances of wires or other objects getting caught on the Air-Pak
3	Console Design	Large Sweep Gauge, External HUD PASS Status Indicator	Easy reading of cylinder pressure remaining (individual/team), Positive indication of PASS activation



Air-Pak X3 - Safety



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Air-Pak X3 - Firefighter Status Indicator



Item	FF Status Indicator	Features	Benefits
1	Status Lights	"Buddy Lights"	Optimized positioning for improved visibility
2	Non-Verbal Communication	"External HUD"	Unspoken team communication about air status



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Scott PASS Devices



PASS Applications



PASS

- Search and Rescue
- Interior Structural Firefighting
- Industrial Fire brigades

Pak-Tracker

- Search and Rescue
- Interior Structural Firefighting
- Industrial Fire brigades
- RIT

SEMS II

- Search and Rescue
- Interior Structural Firefighting
- Industrial Fire brigades
- RIT
- Haz-Mat
- Air Management
- Remote monitoring
- Evacuation acknowledgment



Pak-Alert X3 - Overview



- Pak-Alert X3 is an SCBA integrated PASS device.
- NFPA compliant to NFPA 1982, 2013 edition
- Compliant w/ NFPA 1500
 - States PASS must meet NFPA 1982



Pak-Tracker - Overview



- Pak-Tracker is in addition to the Pak-Alert X3 and has all of the same features and approvals as Pak-Alert X3.
- Transmits signal when PASS is in full alarm
 - Instant transmission for manual activation
 - 10 second delay if alarm caused by no motion to reduce false alarms resulting in deployment of RIT team
- Remote notification of PASS alarm activation
- HHR or 320 w/ Pak-Tracker may home in on transmitted signal



SEMS II - Overview



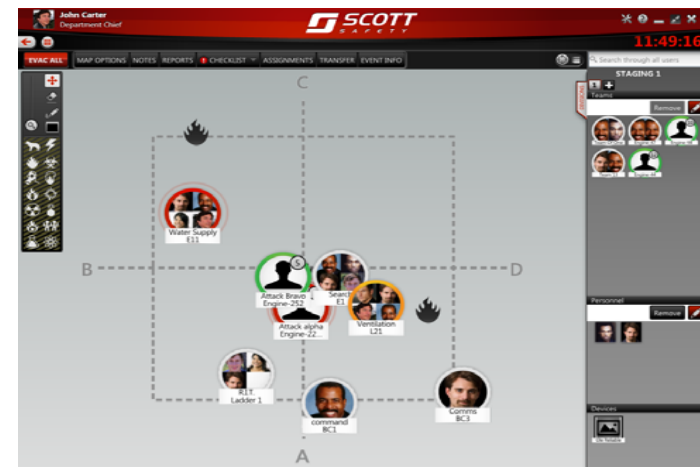
- SEMS II as part of an upgrade kit or SCBA purchase includes Pak-Tracker and Pak-Alert X3 and has all the same features and approvals
- Remote real time monitoring
 - PASS Status
 - Air Pressure
 - Evacuation Status
 - Withdraw Status (self evacuation)
- MESH network for increased range
 - Each SEMS II SCBA is a mesh network repeater
 - Range 3,500 ft. line of sight between units
 - Units can hop up to 10 times (potential range of up to 35,000 ft. line of sight)



Imperium - Overview



- Imperium is an accountability suite (not SCBA dependent) designed to improve both tactical and strategic event management
 - Automated Level 2 Accountability
 - Supports Team Assignments
 - Pre-Planning Templates
 - Supports Staging and Mutual Aid Activity
 - Automated Report Generation
 - Scalable Solution
 - SEMS II Features (when used with SCBA)
 - PASS Status
 - Air Pressure
 - Evacuation Status
 - Withdraw Status (self evacuation)



VALUE PROPOSITION



- A collaborative partnership between two fire market leaders to address common customer needs while improving customer safety and increasing situational awareness



PRODUCT OVERVIEW – FRI Concept



- Bluetooth pair Air-Pak X3 SCBA to Motorola APX radio.
- Demonstrate Scott Safety SCBA telemetry passing through ASTRO 25 Conventional Digital network
 - SCBA General Indications
 - PASS Alarm Notification
 - Pak/Radio ID

Concept Presentation



Tyco RFModem Form v1.0

Protocol Settings ▾

TCP

Connect

IP Addr (RF Modem)
192.168.128.1

COM Port (Loopback)
Select port...

COM Port:

Test Msg Send

Debug Log

RF Modem CAI UDP/IP Tyco Host Tyco Demo Marketing

SCOTT SAFETY **MOTOROLA**

A Tyco Business

Radio ID MFD2489

Tank ID SFDE3A

MOTOROLA

Zone 4
Channel 11
Emergency
Zone Resp (Call) Call

© Scott Safety

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Concept Presentation



Tyco RFModem Form v1.0

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A Tyco Business

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© Scott Safety

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Concept Presentation



Tyco RFModem Form v1.0

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A Tyco Business

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Tank ID SFDE3A

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Concept Presentation



Tyco RFModem Form v1.0

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SCOTT SAFETY **MOTOROLA**

A Tyco Business

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Air-Pak 75 – 2013 Compliant



Air-Pak 75, 2013 compliant



- Similar look and design to 2007 edition AP75
 - Differences
 - 33% EOSTI
 - New gauge face to match 33% EOSTI marking
 - New regulator cover
 - New PASS sensor module with new PASS sounds
 - AV-3000 HT as the only approved facepiece



EPIC 3 Voice Communications



EPIC 3 Communication System



The EPIC 3 communication system

- A state of the art communication system for use in a multitude of applications.
- EPIC = Enhanced Performance Integrated Communications
- 3 = Three in one communication system
 - Voice Amplifier
 - Radio Interface (RI) – coming soon
 - Talk Around – coming soon



EPIC 3 Voice Amp



- Similar size, appearance, and capabilities as first generation EPIC voice amp
 - Hands-free Amplification
 - Bayonet Mount Design
 - Tactile On/Off Switch
 - Directional Speaker
 - Auto Shut-Off (after 20 mins)
 - Low Battery Warning
- Improved Functionality
 - Increased Volume
 - Increased Intelligibility
 - STI Testing >0.65
 - Longer Battery Life
 - > 50 hours



- Has all of the same features as the EPIC Voice Amplifier
 - Directional speaker
 - Auto Shutoff
 - Easy to clean speaker
 - 3 AAA batteries
- NFPA and NIOSH approved accessory
- ~30 hours of battery life



EPIC Communication System – Radio Interface



- Also has a Bluetooth link that allows this amplifier to be used with the EPIC3 RI console and other standard Bluetooth devices
 - May be used as a stand alone amplifier
 - When linked, allows for remote communications via the EPIC 3 console or other Bluetooth devices
 - Speak positioned near the users ear to improve ability to hear incoming radio traffic
 - Speaker has no moving parts



EPIC Communication System Console



- Two Versions available
- High temp Lapel Mic
 - No wireless interface
 - Test to NFPA Heat and flame test
 - Test to NFPA high heat and flame
 - Very rugged
- Wireless high temp console
 - Same features as the lapel mic, plus:
 - Also has a Bluetooth link that allows interface with the EPIC 3 RI or other Bluetooth accessories such as jaw bone
 - UL and ATEX approved intrinsic safety
 - Attaches to a variety of portable radios
- Remote PTT – Paddle and Ring options
- Battery life info
 - Over a year of operation connected to an energized radio
 - ~30 hours of continuous Bluetooth link



EPIC Communication System – Talk Around



- Multiple Channel standalone radio system
 - Programmable channels
 - User selectable channels
- Range greater than 300 ft.
- Variants include RI and/or Amplifier functionality
 - When combined w/ RI
 - Radio communications come into the console
 - Talk around communications come to the RI Speaker



Thank you!

