

Introduction

The Broken Arrow Fire Department secured **\$840,000** in funding for the purchase of new Self-Contained Breathing Apparatus (SCBA) from a successful bond issue voted on and passed in June of 2014 for the City of Broken Arrow. The bond funding will be utilized by the Broken Arrow Fire Department to purchase 120 Self Contained Breathing Apparatus (SCBA) with dual EBSS (buddy breathing) and outfitted with three masks and two cylinders for a total of 360 masks and 240 cylinders. The committee is also looking at the purchase of two (Rapid Intervention Crew (RIC) packs. The committee would also like to see the purchase of a telemetry system with RFID tags to help maintain crew integrity and give more safety features on the fire ground. The purchase will also include four Supplied Air Respirator (SAR) packs outfitted with four 10-minute escape bottles, as well as four 60 minute cylinders along with other miscellaneous items that may be required to make the switch to a new brand/ manufacturer. The committee also plans to purchase with the allocated funds, 30 of the 120 SCBA's equipped with integrated thermal imaging cameras (T.I.C.'s). It is crucial to note that SCBA's are a critical and fundamental safety component to firefighters and part of the minimum safety ensemble at fires and hazardous materials incidents. Therefore, the committee performed due diligence to get all the supporting information needed in making this process thorough and decisive.

The SCBA Committee was formed in July of 2016 through a joint effort from both Local 2551 and management of the Broken Arrow Fire Department. The committee was appointed by both Management (Fire Chief Jeremy Moore) and Local 2551 President (Captain John Cockrell). To provide equal representation Local 2551 made three appointees to the committee and Management made three appointees as well for a total of six appointees as well as one committee chair for a total of seven personnel. The committee members included Captain Joe Annan (B-Shift), Captain Derek Fulps (B-Shift), Lieutenant Chris Hughes (C-Shift), FF Dusty Bates (C-Shift), FF Jay DeShields (A-Shift), & FF Bill Wilkinson (B-Shift). The committee chair person was Training Officer Bryan Myrick (Administration).

Based on manufacturer presentations, field evaluations, and process further outlined in this document, the committee wishes to place a sole-brand purchase. This report will give a detailed description of the process, selection criteria, and events that led to the final choice.

The Broken Arrow Fire Department is the sole agency involved in this report and responsible for facilitation of purchases with City Bond funds. The City of Broken Arrow Logistics Procurement Services Division has established six criteria for justification of a sole-brand purchase:

- # 1. If the product requested is a one-of-a-kind item, provide information on how this was determined.
- # 2. Provide information about why the particular product or vendor was selected.
- # 3. State what other vendors were contacted and why the particular product or vendor was selected.

- # 4. Provide information about other brands/models that were considered and explain why they were rejected. Include brand/model names, vendor names, and the name and phone number of the person(s) contacted.
- # 5. If the requested product has unique features which are required to successfully perform a required function, identify those unique features and explain why they are required.
- # 6. If an item must match, be compatible with, or be related in some special way to existing equipment, including quantity, brand/model, and why the need to match, be compatible with, or otherwise relate to existing equipment is necessary.

Utilizing the above criteria, this document will present a detailed sole-brand justification for purchase of the MSA G-1 SCBA.

The initial purchase will include 120 Self Contained Breathing Apparatus (SCBA) with dual EBSS (buddy breathing) outfitted with three masks and three cylinders, and one spare battery per pack for a total of 360 masks, 240 cylinders, and 120 spare batteries for a total of 240 batteries (SCBA and spare). The purchase will also include four Supplied Air Respirator (SAR) packs outfitted with four 10-minute escape bottles, as well as four 60 minute cylinders for the supplied air units. It is the intent to purchase two RIC packs as well. The committee also anticipates the purchase of two fit testing module adapters with one respected matching fit testing machine (TSI portacount), one POSI-check software, and twelve adapters for fill stations (cascades). Along with the spare batteries, it is the intent to purchase (14) battery charger/tenders. The committee would also recommend purchasing MSA's SCBA telemetry to include RFID tags. It is also the intent of the committee to equip 25% (30) of the SCBA's with integrated Thermal Imaging Cameras (TIC) along with other miscellaneous items that may be required to make the switch to a new brand/ manufacturer.

HISTORY

Currently, the Broken Arrow Fire Department utilizes the brand of Survivair, which is no longer in business. However, in the last 18 months, Survivair has been bought by Honeywell Industries and is now being supplied under the name Honeywell (Titan). Currently the BAFD has approximately 85 Survivair SCBA's and approximately 125 Survivair 4500psig cylinders, as well as approximately 175 Survivair Masks. Upon the initial purchase of our current SCBA, our department had approximately 95 members that supported five fire stations with approximately 15 apparatus. With the rapid expansion of our department over the last decade, the current number of SCBA's do not support the rank and file, which includes the addition of two fire stations, 20+ apparatus, 173 personnel, as well as in-house fire academies where up to 21 SCBA's need to be pulled from the field in order to outfit the current cadet class. Combined with SCBA's that are broken, we are constantly running out of SCBA's in the field and often have no SCBA's for reserve status or replacement. This is the reason for the request for a minimum of **120 new SCBA's** along with the recommended number of masks and cylinders. The BAFD is

approaching the shelf life of 15 years for our current SCBA's, and with litigations and other issues with Survivair, it was vital for the BAFD to secure funding and move forward with the purchase of new SCBA's.

The fiscal impact to the City of Broken Arrow will be minimal while transitioning to new SCBA's based on the fact that we will be utilizing monies secured through a bond issue as well as moving towards a vendor that will offer a multiple consecutive year warranty. The opportunity to explore multiple SCBA brands for purchase was made possible by the citizens of Broken Arrow from the successful passage of the 2014 bond. It is also the committee's contention to allow other smaller departments in the metro to utilize our information and data to build a similar committee and use the shared results and bid specifications to secure matched pricing in the event they choose to go with the Broken Arrow Fire Department's recommendation for new SCBA purchase.

In July of 2016, the SCBA committee was formed. A joint effort between both Local 2551 and Fire Management established a *six man SCBA committee* with *one chairperson* for a total of *seven members*. The first meeting was held on **July 07, 2016**. The primary purpose of the meeting was to establish the mission of the committee, identify objectives, and create an overall timeline to accomplish the goal.

The committee established minimum requirements, objectives, a timeline, and selection process, which included SCBA manufacturer presentations, field evaluations by line personnel, and a scoring/grading metric. A Request for Information (RFI) by both email and phone resulted in five manufacturers that conducted presentations: Drager, Honeywell, Interspiro, MSA, and Scott. It should be noted that the committee was informed of a company named Avon, formerly known as ISI, after all demonstrations had been completed. Contact information was taken from Avon's website and they were contacted. Upon contact and leaving a message with the customer service Avon representative, we were assured that a local vendor would contact the committee. However, there were no returned phone calls or emails to the committee, so the decision was made to move forward and eliminate Avon from the evaluation process.

Manufacturers presented their SCBA on **August 3rd and 4th, 2016**. The committee reviewed the presentations of the five manufacturers present and agreed that they all met the minimum standards and therefore were moved on to the field evaluations. Drager responded to an email from the committee asking what features we would like to see, and how many packs, cylinders, and masks we wanted to demo. However, Drager did not produce SCBA's for field demos, even after they were contacted by both email and phone. Because of the non-commitment from Drager at that point, the committee recommended to stop contacting Drager and subsequently eliminated them from the process. Field evaluations were conducted on **August 16-18, 2016**. The site for field demo evaluations was the Broken Arrow Fire Training Center. We had three consecutive days, morning and afternoon, at the Phase II building and training grounds. By offering the field evaluations as our weekly company training the committee was able to get approximately eighty-five percent participation. We had *over 125+ personnel*, plus committee members participate in the evaluation process of four SCBA brands.

As mentioned before Training Officer Bryan Myrick was mutually selected by both Local 2551 and Management to be the Chair of the committee. T.O. Bryan Myrick was also designated as the official spokesperson for the committee charged with preparing the committee's recommendation report as well as creating and writing the bid specifications. During the first committee meeting all of the guidelines and expectations were discussed. At that time 5 of the 6 committee members were assigned to research and

fact find information on each of the manufacturers that would be present during manufacturer presentations. During the course of the selection process, the committee conducted *six meetings, five SCBA manufacturer presentations, and three days of field evaluations*, totaling approximately *420 staff hours*. In addition, as mentioned above, individual hours were spent on project- specific tasks, research, and meetings/phone calls with other departments that use these different brands of SCBA's, bringing total staff time to approximately *544 hours* to reach the sole-brand decision.

SOLE BRAND JUSTIFICATION CRITERIA

The following section will describe *five of the six* sole-brand justification criteria utilized in forming the sole-brand choice.

(# 2.) Provide information about why the particular product or vendor was selected.

(#3.) State what other vendors were contacted and why the particular product or vendor was selected.

It is important to note that a 3-phase selection process was conducted including manufacturer presentations, field evaluations with a scoring metric, and a committee recommendation.

MANUFACTURER PRESENTATIONS

An RFI by both email and phone to each vendor started in June 2016. T.O. Bryan Myrick, Committee Chair, made the initial contact with each of the respected SCBA manufacturers and their local vendors. Drager, Honeywell, Interspiro, MSA, and SCOTT, responded to the RFI and agreed to participate in the manufacturer presentations on **August 3-4, 2016**. It should be noted again that AVON (formerly ISI) wasn't initially requested because the committee did not know they existed. However, as noted earlier in the report once we found out about the company AVON, we initially researched them and made contact. After leaving word with a representative off of their website they assured us a territory vendor for Oklahoma would contact us. After not hearing anything back and the committee recommended to move on with the five vendors listed above. Each manufacturer that attended our demonstration period was given two hours to conduct the presentation and answer questions. The presentations were attended by committee members and detailed notes were taken as well as extensive hands on segments to properly learn how each SCBA functioned.

Each manufacturer provided abundant information and literature regarding their respective unit. Questions were asked specifically regarding compliance with minimum standards, technical support, maintenance and warranties.

At the conclusion of the presentations, the committee processed the information and expressed concerns about Drager due to failure of the company representative being able to explain multiple documented issues from other departments with their brand of SCBA. The committee also noted that the Drager representative didn't really know his product and mentioned multiple times that he would write down our questions and have to get back with us upon returning back to his work. However, after emails exchanged about getting SCBA demo models in, Drager chose not to send anything to the Broken Arrow Fire Department for field evaluations.

It was at this point that the committee decided to eliminate Drager from the upcoming field demonstrations since they did not send SCBA's to demo. Likewise, with no response from AVON, the committee decided to move forward with field demonstrations on the four remaining brands.

FIELD EVALUATIONS

After the presentation phase was completed, Honeywell, Interspiro, MSA, and SCOTT were invited to the field evaluations conducted on **August 16-18, 2016**. To have a legitimate sampling of the represented agency line personnel field trials were done during normal rotation of weekly training at our Training Center, where approximately ***85% of line firefighters participated*** in the evaluations while on duty.

Listed below are the numbers of on duty personnel from each shift whom participated in the field evaluations:

- August 16th 2016 (C Platoon) - 45
- August 17th 2016 (A Platoon) - 46
- August 18th 2016 (B Platoon) - 43
- August 16-18 2016 (Committee Members) 7
- **TOTAL - 141 personnel**

The field evaluations were performed at the Fire and Police Training Center located at 4205 E. Omaha St. Broken Arrow, OK 74014. Each day ran simultaneously all brands of SCBA's by rotating each company from one brand to the next with two sessions each day at 0900 and 1300 hours. Each committee member that was assigned a specific brand early in the process was designated to stay with that brand during field trials to answer any questions that line personnel had over the individual brand of SCBA. Over three days a total of six sessions were completed. Approximately ***536-line staff hours*** were spent evaluating the units. Companies were selected and coordinated by the on shift Battalion Chiefs from each respective shift during field trials in order to provide as many objective evaluators as possible.

SCOTT, MSA, Honeywell, and Interspiro were all invited to attend all three days of the field evaluation sessions. Prior to the evaluations each manufacturer sent SCBA's FED EX/UPS to our training center. Honeywell sent four 45 min SCBA and two 30 min SCBA's brand new out of the box. Interspiro sent

four 45 SCBA's and two 30 minute cylinders' brand new out of the box. MSA brought four SCBA's with 45 minute cylinders and two 30 minute cylinders that *were not* brand new out of the box. SCOTT hand delivered six 45 minute SCBA's brand new out of the box. The reason for noting new or not was due to some issues we had with MSA during field trials on their demo units. We had a unit not work with its electronics as well as a cylinder blow an O-ring and another unit not be able to work on the quick connect attachment. These issues were a concern and were noted and also noted that they weren't in the best of condition either from probably being abused demo units. The reason for inviting vendors to attend the field trials was to allow each vendor more one on one time with field personnel and to be able to answer questions from field personnel. It was our intent to also offer better orientation to the SCBA user than a committee member could, and diagnose any issues that came up with their respected SCBA. However, in light of our dates conflicting with some prior obligations of some manufacturers, SCOTT was the only manufacturer that secured a local vendor representative. SCOTT also secured a manufacturer representative. The committee discussed this and was not extremely pleased with only having one brand supply representatives during the field trial phase. On the day of field trials each brand of SCBA had specific station location where line personnel would rotate in and out of evaluating that specific air pack. When SCOTT arrived, they were briefed on the purpose of the evaluation, and assigned to their SCBA station. Once again, the objective of the field evaluations was to gather information regarding the selection criteria of usability, comfort, and ease of breathing and each member that rotated through was given an evaluation form to rate information above mentioned.

Each SCBA was evaluated utilizing a series of tasks but not limited to the tasks listed below:

Donning & Doffing Air Pack



Crawling/Search





Raising and Extending 24' Extension Ladder



Cylinder Change and Refill



Buddy Breathing



Pike Pole/Breaching Ceiling



Communications

Hose Roll

In addition, some personnel evaluated the units in total darkness for ease and simplicity of use. PASS devices, alarms, gauges and Heads Up Displays (HUD) were all tested in a pitch black limited view environment by some personnel.

After each firefighter completed all or some of the above exercises as well as others listed on *Appendix A*, he/she filled out an evaluation form for the respective SCBA and gave a final recommendation of Yes or No.

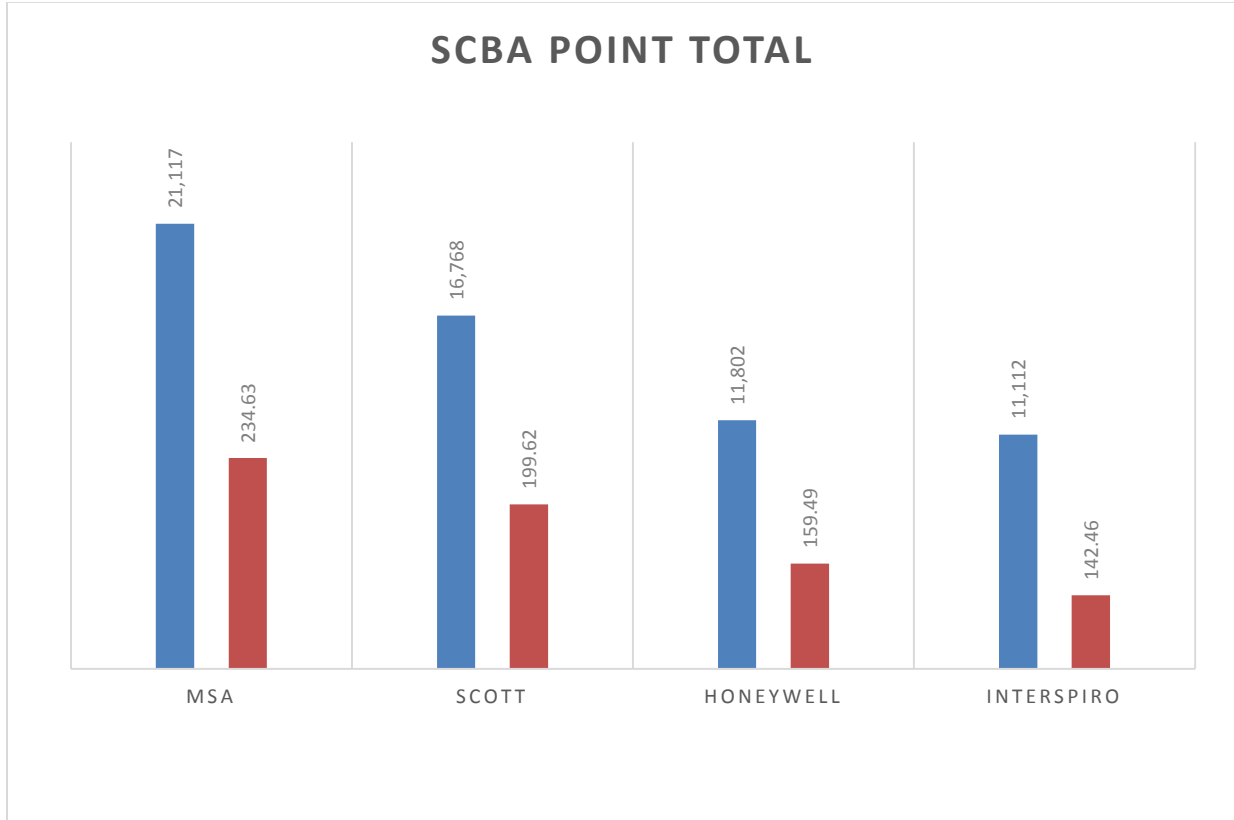
Appendix A is the actual form that was used and everything from those evaluations were scored on a point system.

Evaluation forms were broken down into 10 sections, with the 10th section being only a Yes or No of recommendation of the SCBA that individual evaluated. A perfect score on an evaluation sheet had a total of **285 points**. Due to the fact that some companies were dispatched on calls while at training/evaluations and some chose not to turn in evaluations the committee met and discussed the fairest way to evaluate and tally the point totals. First thing in the meeting was to separate each evaluation form into the four different brands. In that meeting it was decided to tally each individual evaluation on its respected point total and then add all the evaluations together for a total sum score for that entire brand. Once we had an entire sum score for each brand we then divided that total number by the number of evaluations that we had for that specific brand, thus giving each SCBA an average score based off of total numbers and numbers of evaluations. The committee also kept individual track on each evaluation as to whether a line personnel member gave the recommendation of Yes or No to buy that SCBA for the department.

After all four SCBA brands were evaluated, and forms completed, and the committee tallied manually all results, results were logged and saved on the T-Drive on the city network. The results listed in *Figure 1* bar graph show the total points in descending order as well as their respected average. The results in *Figure 2* pie chart show the results of the recommendation to purchase said SCBA.

FIGURE 1: Total points in descending order as well as average raw score

Choice of SCBA by Broken Arrow Fire Department



MSA was the favorite overall with a total point value of **21,117** with an average score of **234.63**. *SCOTT* came in second, followed by Honeywell, and Interspiro.

Figure 2 (2.1-2.3) Pie chart of recommendation of purchase of SCBA

SCBA choice by Yes or No or Indifferent

Figure 2.1 (YES)

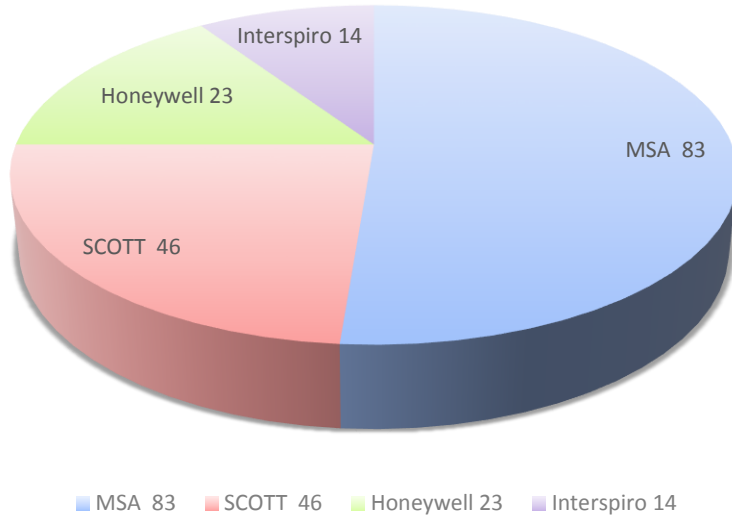


Figure 2.2 (NO)

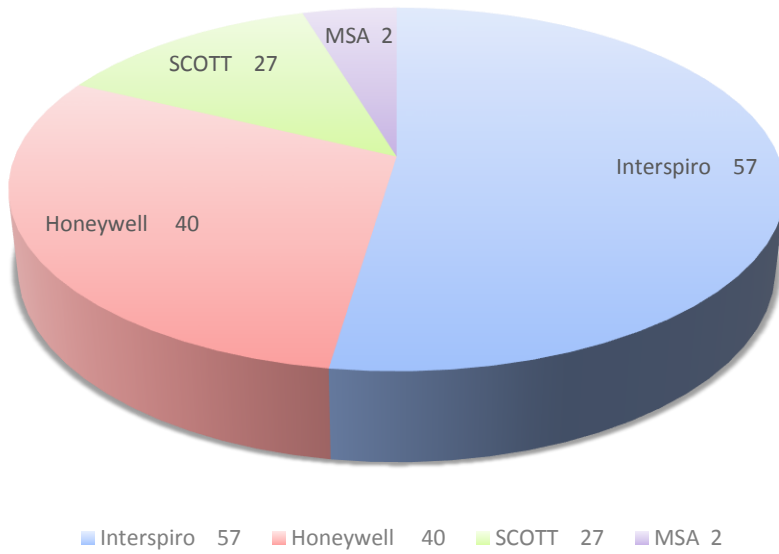
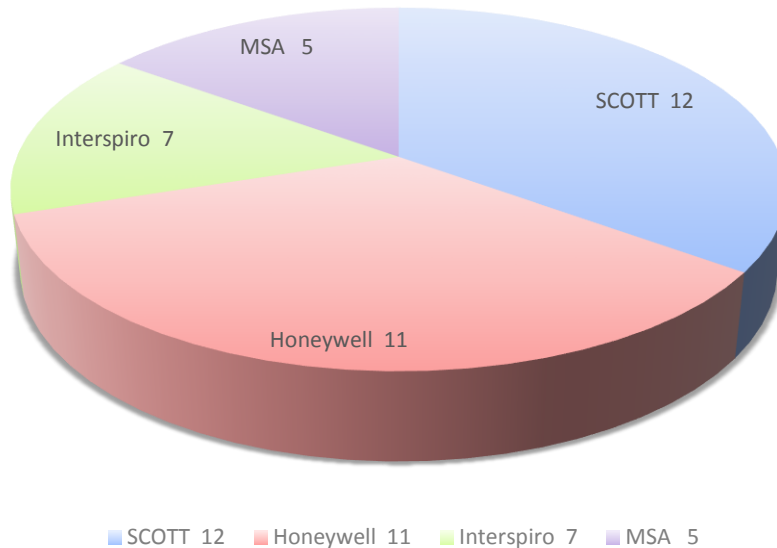


Figure 2.3 (Indifferent)



AGENCY POLLING AND INTERVIEWS

Between presentations, committee meetings, and field evaluations the polling of agencies that use MSA, SCOTT, and Interspiro were done. Polling was not done on Honeywell due to the fact it is essentially similar to the current SCBA we use and they did not have anyone locally that was in a Titan SCBA. If any outstanding issues were identified, or if a tiebreaker was needed, the interviews would provide the necessary information. Due to the overwhelming choice by the line personnel field evaluations, a tiebreaker was not necessary. It is noted that several departments in Texas and Oklahoma were contacted off of a supplier sheet that was given during presentations to the committee from CASCO industries. These departments revealed some initial issues with software/firmware updates on the MSA SCBA's as well as a caution to the holder where the cylinder slides into. However, after research and phone interviews with fire departments in Oklahoma such as Norman, Muskogee, NW Rogers, Verdigris, and in Texas such as Round Rock, Carrollton, Midland, Arlington, Coppell, and Farmers Branch, the committee felt assured that the issues had been resolved with MSA and that all the departments contacted were happy with the SCBA of choice.

(# 4.) Provide information about other brands/models that were considered and explain why they were rejected. Include brand/model names, vendor names, and the name and phone number of the person(s) contacted.

As outlined in the above section, Drager and Avon were all considered and rejected. Drager was eliminated due to the fact they didn't respond back to an email exchange requesting exact demo models, even though they requested the information. Attempts were made to make sure they were going to send demo units, but Drager did not reply again thus not sending any demo units to Broken Arrow. Avon was eliminated from the beginning due to the fact they attempted no contact with the committee. A phone call was made to the company and we were assured that a local vendor would be reaching out to us, but they never did. Due to the lack of Avon equipment around the Tulsa metro, the committee decided to move forward on the remaining vendors and brands of SCBA's.

The dates of the presentations and field evaluations are outlined in the previous section. The names and phone numbers of the persons contacted for each respective agency are as follows:

SCOTT: Clay Carter

Clay Carter [Key Account Specialist]
Northern Safety Company, Inc..
5514 South 94th East Avenue | Tulsa, OK | 74145
918-671-8217 (cell) 918.665.2330 [phone] 800.256.1002 [toll-free] 918.665.3515 [fax]
ccarter@northernsafety.com
www.northernsafety.com

Drager: Paul Tarter

Regional Sales Manager
Responder - Texas
Draeger, Inc.
505 Julie Rivers Drive
Suite 150
Sugar Land, TX 77478
Mobile +1 210 243-6483
Paul.Tarter@draeger.com

MSA: Terry Graham

Sales Representative
Casco Industries, Inc.
Cell: 918-527-8333
tgraham@cascoindustries.com

Interspiro: James Gunter

INTERSPIRO, INC. | A MEMBER OF THE OCENCO GROUP
10225 82nd Avenue, Pleasant Prairie, Wisconsin 53158

262.947.9901 – Main Office 281.217.1689 – Mobile

james.gunter@interspiro.com

Honeywell: Tom Gray, QSSP

SCBA Sales Specialist
Central US Region
Honeywell First Responder Products
Cell: 901-355-7026
Email: tom.gray@honeywell.com

AVON (ISI)—Company Representative (Susan)

Avon Protection Systems
Business Innovation Group
1361 Brass Mill Road, Suite F
Belcamp - Maryland - 21017 – USA

Customer Service: [+1 \(888\) 286 6440](tel:+18882866440) www.customerservice@avon-protection.com

(# 5.) If the requested product has unique features which are required to successfully perform a required function, identify those unique features and explain why they are required.

There are several unique features of the MSA pack that is different from all other packs. First, the MSA SCBA is the only manufacturer that provides a telemetry system with their SCBA that alerts a firefighter of the need to evacuate through a LED running man in the HUD. At the same time, it locks out the PASS device into a RED LED Running Man mode that forces the FF to acknowledge the evacuation signal to the IC. Further, the telemetry system module lets the IC know how many FF's are on scene, what company they are assigned to, as well as how much air is remaining in their cylinders. All of this telemetry is obtained via RFID tags that are issued to each firefighter and they are able to scan their individual SCBA every morning at shift change and by doing that it stores that FF's information on the SCBA for 24 hours and beacons the information to the data terminal for the IC. The committee deemed this very necessary as this would help the IC keep track of their firefighters as well as add an added safety

feature by being able to lock out all firefighters on their PASS devices to make them acknowledge an evacuation signal.

In addition, the MSA SCBA is the only air pack activates all electronics once the bottle is turned on, to include the wireless/Bluetooth capable voice amplifier that is synced to the face piece/regulator. This is a unique feature because all other brands you have to either turn on some of the electronics independently from the turn of just the air cylinder. This is something the committee liked due to ease of turning everything on and ease of turning everything off as to not deplete the battery life of running lots of electronics.

Something else very unique that only MSA SCBA can provide at this time is the lithium-ion rechargeable battery packs for their SCBA. This not only means less weight on the SCBA, but also ease of being able to recharge your battery instead of throwing batteries away and changing them constantly. After consulting with some fire departments that utilize MSA's rechargeable batteries, most said they were getting as much as six months out of one charged battery, which is more than we get on our existing shelf batteries. Another unique design about this battery system is that it cannot come out unless you use a tool to remove the battery. Yet another feature about the battery is the tool is located on the pack itself, which is the buckle of the waist band.

Something else unique but not subject to only the MSA pack is the ability to adjust the height of the SCBA and the fact it has a swivel plate that is placed on the lower back of the firefighter. These features not only help the SCBA fit the firefighter better, but also allows more freedom of movement and comfort with maneuverability.

Lastly, something completely independent and unique to the MSA SCBA is the ability to order your PASS device/air gauge with an integrated Thermal Imaging Camera (T.I.C.). This is a huge safety feature that no other brand offers. For a minimal amount to the overall cost of the SCBA, you can get an added safety feature on the air pack not only for finding downed FF's, but also by knowing where other FF's are and at the same time recognizing hot and imminent dangerous hazards around you at a moment's notice. This TIC would also help in a rapid sequence located victims in a fire. Due to how much the cost of a regular sized TIC is, this feature would allow more company officers and firefighters to do their job more efficiently by having multiple TIC scanners in a hostile environment greatly reducing risks and increasing safety for all firefighters and potential victims.

(# 6.) If an item must match, be compatible with, or be related in some special way to existing equipment, including quantity, brand/model, and why the need to match, be compatible with, or otherwise relate to existing equipment is necessary.

Currently, Broken Arrow Fire Department utilizes Survivair so there isn't any compatibility of picking MSA or any other brand except Honeywell. However, our own Physical Resource personnel Bruce Wallace, who is responsible for maintaining/servicing all SCBA's, has stated that MSA is the closest brand to our current brand that he is authorized to work on.

MSA is also one of only two brands that offers a full 15year warranty. MSA also will retro-fit with the 45 minute cylinders in all of our current apparatus holders. MSA supplies with their quick disconnect fittings

attachments to all our current Mako Cascade systems, so there is no need to retro fit or upgrade our current cascade systems. The cylinders can also come with non-quick connections, which will allow us to fill our portable boats and supply air to our air struts, pneumatic tools, SAR units, and air bags.

It should also be noted no matter which brand, we will have to switch out our 60 minute cylinders for our supplied air unit for confined space as well as the four SAR packs and 10-minute escape cylinders.

SUMMARY

In summary, the SCBA committee combined with field personnel spent approximately 1080 staff hours during an extensive selection process that has spanned four months. Five out of six criteria, as identified by the City of Broken Arrow Procurement Services Division for sole-brand purchasing, have been detailed in this document. The three-phase selection process has yielded the justification of a sole-brand purchase of the *MSA G-1 SCBA*. Due to the positive feedback from field personnel both during and after field evaluations matched with the scoring metrics from the evaluations reports, as well as the overwhelming support of the committee, the committee recommends the sole purchase of the *MSA G-1 SCBA*.

Date: October 10, 2016

Report prepared by Committee Chair

Committee Chair

Training Officer Bryan Myrick

Committee Members

Captain Derek Fulps

Captain Joe Annan

Lieutenant Chris Hughes

Firefighter Dustin Bates

Firefighter Jay DeShields

Firefighter William Wilkinson
