QUESTIONS & ANSWERS
FRR - FIRST RESPONDER RESPIRATOR NIOSH

QUESTION
What is the Scott Safety First Responder Respirator?

ANSWER
The Scott Safety First Responder Respirator (FRR) is based on the revolutionary Scott General Service Respirator (GSR) platform that incorporates a number of advanced design features. While the GSR is a superior option for military use the filter specification and attachment means are not compatible with regulatory approval standards required for civil use. The FRR is approved by various regulatory bodies allowing it to be utilized globally by civil First Responder groups. Like the GSR, it offers significantly higher protection factors against CBRN agents while providing greatly reduced physiological burden.

QUESTION
What regulatory standards does the FRR meet?

ANSWER
The FRR has been approved to the stringent negative pressure respirator standards of NIOSH CBRN Cap-1 APR, NIOSH 42 CFR 84 along with other global standards such as EN 148-1:1999, EN 136:1998 Class 3, EN 137:2006 Type 2, BS 8468-2:2006, and AS/NZ 1716:2003 (there are no CBRN based standards in Australia and New Zealand) via the use of standard DIN 40mm threaded filter cartridges. As relevant civil use respirator standards specify single filter use a suitable blank is employed on the mask for the second filter port on standard negative pressure APR applications. The filter can be mounted on either side of the mask.

QUESTION
Who uses the Scott FRR?

ANSWER
As stated, the FRR incorporates many of the "next generation" advanced features of the military GSR mask into a unit approvable for civil use. This makes it an ideal choice for many users whose concepts of operation do not exclusively involve firefighting. The FRR is an ideal choice for emergency services groups who may be required to respond to or protect staff from CBRN agent releases such as Police, Hazmat, Customs/Excise, Medical/Ambulance, Border Control and other first responders. There are other military and non-military specialist users where CBRN is not an incidental risk, but a specific responsibility. Examples of these groups include national or regional law enforcement agencies, Joint CBRN regiments, Special Forces, Explosive Ordinance Disposal (EOD) squads and Hazmat teams (both civil and MoD). Some of these groups will employ the FRR mask as a primary component of a combination respirator ensemble, the Scott Modular Respiratory Protection System (MRPS).

QUESTION
What exactly is a Scott Modular Respiratory Protection System?

ANSWER
This unit, termed the Scott MRPS, is able to provide the user a choice between supplied or filtered air via the combined use of an SCBA and a PAPR and/or an APR via use of inlet adapters. The FRR is able to perform as either a positive or negative pressure face piece to accommodate these options. Switching between the air supply alternatives is quick and intuitive and facilitates the ability to perform in extended duration operations. PAPR, SCBA or combination use is currently only approved
under relevant EN standards. NIOSH approval of the FRR with PAPR and SCBA is being pursued. Much more detailed information about MRPS configurations and capabilities is available from Scott Safety.

**QUESTION**
How can Scott claim that the FRR provides higher protection factors when it uses the same type of CBRN filter cartridges found on other masks?

**ANSWER**
In addition to the highly effective filtering capability of the Scott CAP-1 or Model 32/22 CBRN canisters, only Scott can offer a patented secondary filter system that provides the highest levels of particulate protection against biological and nuclear/radiological material threats. This optional inline secondary filter is incorporated into an internal oro-nasal inner mask (“mask within a mask”) module. Additionally, the secondary filter provides the unique capability of automatically removing sweat away from the mask. The main mask body itself also utilizes a self regulating twin seal design that guarantees maximum protection against inward leakage.

**QUESTION**
What other features does Scott offer on the FRR in addition to sweat removal to substantiate the claim of providing a greatly reduced user burden?

**ANSWER**
The chemically hard mask body and twin seal system are made of a proprietary butyl blend material that provides a comfortable fit even in long duration use. The FRR is also able to provide very low breathing resistance, excellent visibility with the flexible single piece lens, air flow that minimizes misting and a hydration system that offers drinking rates up to 3-4 times higher than competing systems. The mask has a balanced weight distribution and the FRR without external filters is only 680 grams.

**QUESTION**
Does the FRR offer any unique strategies to ensure a comfortable and secure fit for every user?

**ANSWER**
Yes, there are a series of features and capabilities that guarantee an optimal fit for virtually any user. First, both the main mask body and the secondary inner mask come in 4 different sizes each that can be combined to provide the best fit characteristics for any face (10 combinations). The 6-point mask harness is designed for maximum mask stability and the top 4 straps are outfitted with adjustable stops that can be set to lock the harness buckles after fit testing to maintain proper fit every time the mask is donned. Only the bottom two straps need to be tightened when donning the mask and stop bars fitted here allow the fitted user to pull to the same tension every don. In addition to standard methods fit testing can be performed with use of the innovative Advanced Respirator Test System (ARTS) which can confirm the unprecedented protection levels supplied by the filtration system.

**QUESTION**
How does the Scott FRR accomplish a low breathing resistance in the exhalation valve?

**ANSWER**
The FRR does utilize a twin exhalation valve cartridge design that provides a clean airlock as well as leak tight operation. Despite the critical extra protection afforded the efficient modular design adds minimal weight and an insignificant increase in exhalation breathing resistance. Exhalation valve cartridge options also include fixed and auto biased designs to meet operational requirements when using the FRR with a combination respirator system. The exhalation valve system also helps facilitate meeting the required regulatory limit of 1% Vol. CO2 in the mask dead air space.

**QUESTION**
What type of arrangement is made for the incorporation of communication systems?

**ANSWER**
The communication louver on the GSR mask, an easy snap-in replacement for the standard louver, has been proven to function very well in extreme environments. Material construction of the louver has been further upgraded in the FRR to pass the EN 136 950°C Flame Test. The standard microphone incorporated into the mask louver is an electret (condenser) type that permits optimum integration with modern communication systems. Integration with most manufacturer communication systems is possible and options include voice amplifier (VPU) and/or radio interface including Push-to-Talk (PTT) mode. Systems can be wireless or wired if extra security is required. The incorporation of specific requirement into the optional communication louver makes this capability job, not man, specific, but the FRR also offers on-mask communication alternatives as well.
**QUESTION**
What about visibility?

**ANSWER**
The single flexible lens provides superior lateral, downward and binocular vision combining to give an overall exceptional field of vision. The lens design also makes it possible to easily integrate sighting systems, night vision goggles and other associated equipment. Corrective vision systems, including progressive lenses, are readily incorporated without affecting the safe and comfortable fit.

**QUESTION**
Are outserts available for the mask to help meet different concepts of operation?

**ANSWER**
Yes, while the lens itself has been tested to meet the EN 166 standard for safety goggle protection, there is always the need for additional forms of visor enhancement to meet different CONOPS. Tight fitting, rigid shaped lens outserts are available for additional protection against harsh environmental conditions, sunlight, flash and laser blindness. Outserts are easily fitted or removed, even when using gloves.

**QUESTION**
What hydration options are available for high drinking rate system?

**ANSWER**
In addition to the standard canteen adapter, a “universal” adapter is available that will interface with any brand of backpack style reservoir system by incorporating the brand’s own connector. A higher volume backpack system would be most popular incorporated with the Scott MRPS. Mask hydration connectors have also been upgraded to meet the EN 950°C Flame Test requirements. The minimum 500 ml/min flow capability easily outperforms competing systems.

**QUESTION**
What storage criteria must be met to protect the integrity of the FRR mask and filters?

**ANSWER**
Standard long term storage temperature conditions range from -10° to +40°C to facilitate full 15 year storage specification. Excursions outside this temperature range (uncontrolled storage conditions) will cause a reduction in shelf life. A mask former is provided with each mask used to maintain mask shape during storage in haversack. Different haversack storage options are also available.

**QUESTION**
How long can the FRR mask be expected to last?

**ANSWER**
The minimum target mask (excluding filters) service life is 10 years provided the unit is properly used and maintained. Service requirements are minimal and the modular design means no tools are needed for level 1 (user) maintenance.

**QUESTION**
How easy is it to incorporate the FRR into the other components of a responder ensemble?

**ANSWER**
The respirator integrates readily with various styles of helmets, CBRN suits and body armor, not impeding movement or jeopardizing protection.