

Crossing New Frontiers

Steve Rist, Product Manager, reviews the company's integration into Esterline and continuing success in Military Audio ancillaries

Earlier this year Racal Acoustics was acquired by Esterline Corporation. The acquisition is already proving to be beneficial to both sides. Esterline now has a platform from which to extend its commercial and military aerospace product portfolio into the military land communications arena. For Racal's part, the stability of ownership that is in it "for the long haul" with funds available to extend the scope of the business and access to numerous synergistic technology groups, is already proving to be valuable.

The acquisition has acted as a further springboard to establish Racal's Frontier product range in the market place. Deployment of the Frontier1000 communications headset is well underway with the British Army. The Personal Integrated Hearing Protection programme has delivered in-ear hearing protection to over 22,000 troops, many of whom are, or have been, actively using the equipment in Afghanistan and are reaping the benefits of clear communications on a daily basis. Steve Rist, Product Manager, said, "Deployed troops have been using this new and innovative headset and the positive feedback from the field is growing daily. The Frontier has met all of the Key User Requirements set out as part of the UoR (Urgent Operational Requirement) and is providing the levels of protection, communications and situational awareness required."

Esterline Racal Acoustics (ERA) is now making this leading edge product available for other programmes with other radio interfaces. The momentum from the initial work with the UK MoD is being carried forward to provide compatible solutions elsewhere. ERA has also proven its ability to supply custom ear moulds on a grand scale and often at very short notice. Rist explained, "When the British Forces were deploying to Afghanistan and needed hearing protection it meant we had to have a team at the point of departure to get their ear impressions done, no second chances. It was quite a logistics feat to make sure that we got them all completed in time and then ensured the correct plugs were delivered to the right soldier. Sounds easy, not so if it has not been done on this scale before."

As part of the initial deployment ERA has also managed the training of MoD medical staff to enable ear impressions to be taken in the field. "This means the MoD is getting closer to becoming self sufficient in taking ear impressions. Once up and running, they will be able to support any new requirements in-theatre locally with the custom ear moulds being available a few weeks after being taken." Rist explained. "In fact, this activity is normally picked up and managed as part of any pre-deployment preparations, under MoD Logistics control".

Again, the initial success in providing deploying troops with custom moulds and training army staff to support ear impression taking has ideally placed ERA to

offer this capability elsewhere in support of customers of the Frontier product.

The Frontier headset system has itself developed over the last nine months. ERA launched at DSEi the Frontier1200 and 1400 to enable single and dual channel radios to be used with the Frontier capability. The Frontier1200 allows a single radio channel to be keyed whilst the Frontier1400 allows a dual channel radio to be keyed. The Frontier product is small and light, enabling it to integrate seamlessly into the carriage systems on the soldier with minimal addition of weight. Both products follow their predecessor in providing:-

- Clear radio communications
- Hearing protection against wheeled vehicle and impulse noise
- The ability to hear the surrounding environment whilst protected from impulse noise (Talk Through)

In addition, they derive their power for the "talk through" feature from the radio, so the need to replace a battery periodically is removed.

The Frontier1400 effectively delivers dual channel communications from two channels on a single radio source. Dual channel radios, like the Harris 7800 SPR, are becoming more popular in armies worldwide. The ability to support a squad network and a command network on the same radio means two radios are no longer required, with the consequent savings in weight, real estate and provision of power. Being able to deliver one of these communication channels to a specific ear and to manage the outgoing communications to respond to the original receiver is key to improving the speech intelligibility of operational communications.

"The operational scenario is such that a squad commander could have one channel for his squad, and a second channel for an intra-squad communications and a Platoon network that supports the command channel. When he gets into the back of a vehicle, he also needs to maintain communications with the vehicle crew and to



Custom Ear Moulds



The Binaural Passive Raptor headset

previously had ear problems or surgery or just because they cannot get on with a device of this type.

To support this group, ERA has added the CobraPlus (Dual sided Cobra) and the Passive Raptor to its product portfolio. The CobraPlus and the Passive Raptor both provide binaural communications (one channel in each ear) for the dual channel radio. CobraPlus, being a supra-aural device does not block or fill the ears in any way, so allows natural situational awareness in low noise environments. The Passive Raptor is a circumaural (ear muff style) headset that provides a comparable level of hearing protection to Frontier and is ideal for use in low and medium noise vehicles and to protect against impulse

noise. The Passive Raptor style headset is more popular with vehicle based applications and is typically connected to an intercom rather than a radio, although connectivity to the vast majority of soldier radios is possible.

An application that is becoming more popular in the military market is the ability to have a single headset that supports one or more channels from a Personal Radio when dismounted and gives the user the opportunity to connect to and communicate on a vehicle intercom whilst in transit. ERA is in the process of developing a range of switchboxes, that interface to a selection of our headsets, to support this need. ■

► use the vehicle's radio to communicate with his command structure. That represents a significant number of channels on which communications need to be managed," Rist commented.

Other advanced multi-channel radios are providing dual channel capability and are being assessed by armies around the world. The Raytheon Microlight, Thales Star Mille and the Kongsberg SR600 which, amongst others, have the ability to support talk groups in stereo and are being evaluated for the Squad / Platoon leader role.

The entire Frontier product range delivers capability in a lightweight, easy to use package that could be used effectively with a choice of radios on a range of mission profiles.

The Frontiers are not the whole story though, even for dismounted troops. Around ten percent of soldiers are unable to wear and use in-ear devices of any type. This could be due to the shape of their ear canal, having



Soldier of 3rd Battalion The Rifles on patrol in southern Afghanistan wearing Esterline Racal Acoustics' Frontier headset (Photograph by: Sergeant Keith Cotton: © Crown Copyright/MoD 2009)