



Case study: TETRA radios beat the big chill

Article use of TETRA facilitates Finnish communication

As Finland's northernmost defence force, the Jaeger Brigade (Jääkäriprikaati) conducts training and research in Finnish Lapland – some 130 kilometres north of the Arctic Circle.

There, temperatures can drop as low as -35 degrees centigrade, making it one of the most demanding environments in the world. In these frigid environs, the brigade trains 1,000 conscripts a year, teaching them to carry out versatile military missions.

To manage the troupes during these manoeuvres, officers use TETRA radios. Most of the brigade's 150 radios are handportable THR880i units, and they receive backup from vehicle-mounted TMR880i radios.

Despite the harsh conditions, the radios deliver trouble-free communications, the brigade reports. The rare limitation, in fact, is battery life.

Cold calling: Making batteries last longer

TETRA radio batteries easily last a day or two in summer. But battery life drops significantly in the plunging temperatures of the Arctic winter.

Among the solutions the brigade has developed:

- Soldiers often carry spare batteries.
- Officers are trained to increase battery life by charging batteries only when they're totally empty and allowing them to warm up to room temperature before recharging.
- Users and the radio fleet administrator can disable some radio functions in order to prolong the battery life.

And if soldiers find themselves with a dead battery in the field? They've learned to revive batteries by taking them out of the radio and warming them against their skin.

Of course, it also helps that TETRA batteries can be recharged via a variety of power sources.

Avoiding ice build up

Officers often shield the handheld radios from the worst of the winter weather by wearing them under their jackets and connecting them to a helmet or earmuffs.

Snow or rain isn't a problem, but officers have learned that ice can form inside the microphones if they allow their breath to condense inside. The microphone on the THR880i is easy to use when speaking from a few centimetres away, and that helps prevent condensation. Some users have also developed their own ad hoc protection systems, such as placing small plastic bags over the microphone.

Conditions are easier inside the vehicles. There, officers can easily recharge handheld radios via the carkit or mobile chargers. The external antenna also improves reception when conditions grow worse.

Not just a fair-weather friend

Most of the brigade's radio communications are group calls. The main non-verbal applications are GPS and tracking, which helps officers organize soldiers into a coherent force.

Rescue exercises sometimes call for support from other agencies, such as police and paramedics. The TETRA system – which operates over Finland's national, multi-user VIRVE network – enables this inter-agency cooperation. And, thanks to VIRVE's nationwide coverage, there are no geographical restrictions on radio communications in Finland.

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