



NORMANS Trials Update

NORMANS Kompanisett trials are successfully building the business case for a procurement decision

The NORMANS (Norwegian Modular Arctic Network Soldier) programme's Kompanisett trials took place in October last year, putting the 4th company of the Telemark battalion (TmBn), a professional, mechanised unit, through its paces at the Rena training ground in the south of the country.

The week long trial saw the unit going through very extensive and preplanned trials, preceded by a training period which was used to develop some initial Tactics, Techniques and Procedures. The integrated equipment set used was industrialised and developed by Thales and Teleplan, who also used equipment from other suppliers both acquired specifically for the trials and in service baseline equipment. Integration with the vehicle Battle Management System was handled by Kongsberg Defence and Aerospace (KDA).

To prepare for the trials, the organiser, Forsvarets Forskningsinstitutt (FFI), the Norwegian Defence Research Establishment, arranged section level trials at MOP level in May and August. From the beginning of the process, the TmBn Company also provided a section every six weeks to interact either with the Trials Authority which was chaired by FFI or with the industrial partner, either to do trials or to provide design input. Rune Lausund, FFI Project Manager for NORMANS added, "Each six week period, we also held a military judgement panel which gave guidance on the requirement set and to the industrial partner of the relative importance of capability."

Every man in the company trials were equipped with core baseline equipment, currently issued to Norwegian soldiers, which included night vision equipment, weapons and body armour. The company was then divided into two platoons, each of four sections with one platoon, given the additional NORMANS equipment through which to measure comparative performance.

Scenarios

Two scenarios used in the trials; a 36 hour Operations Other Than War (OOTW) mission which was largely

dismounted and a more conventional warfighting scenario.

Discussing the two, Lausund said, "The first was a generic asymmetric warfare situation where you go from one type of activity to another very rapidly, almost peacekeeping to warfighting in seconds. A lot of tactical agility was needed and lots of command and control. We had another mission, which was in effect warfighting which was with CV90s and featured interaction between the dismounted troops and the vehicles' higher level Battle Management System (BMS)."

The FFI noted no substantive difference in terms of the enhanced performance provided by NORMANS between the two scenarios although, it was more marked, as might be expected, in the dismounted mission.

The trials gave each soldier access to an atypically high level of Situational Awareness. Lausund cited the difference in the NORMANS system to other soldier modernisation programmes around the world whose approach has limited the role of riflemen to that of a sensor 'emitter' only. In contrast, NORMANS Light, industrialised and further developed by Thales, has given each individual soldier in the squad, a visual situational awareness tool and considerably more.

The Thales Light system has its own display which is the size of a standard mobile phone screen. Lausund said, "You get a number of things from that; your own position, where North is, direction and distance to the next way point and the ability to vary the scale of the display. It also tells you where your other team members and your commanders are relative to your own position, and the location of the enemy, if you or someone else has put that in. Because the soldiers are enabled they can actually play a much more active part in the prosecution of your business than other soldiers."

Lausund gave an anecdote of an incident he observed during work up trials in which the company commander arrived and wanted to know where the platoon commander was, "He asked a soldier who looked at his screen and said '50m in that direction'."

Individual soldiers were each given a NORMANS Light system. Commanders were given the Advanced System which has more functionality, based around a PDA and also had access to higher level BMS via a VHF combat net radio.

With a professional battalion, the issue of test subject bias arose as many of the personnel would be familiar with the Rena ground, potentially skewing the outcomes. Lausund said, "We overcame that by doing nearly everything at night," He added, "About 90 percent of the missions were conducted in the hours of darkness. Number 4 company is a mechanised company and we also divorced them from their vehicles for the OOTW mission."

The central spine of the Rena training ground is very densely forested, with Cook comparing it to jungle. "It is an area in which GPS can potentially have problems and it also soaks up radio signals. One of the unforeseen benefits of NORMANS was that digital communication can punch through that a lot better. The NORMANS Light system's GPS system has proved particularly accurate." Civil GPS systems were used by NORMANS coupled with a military PLGR at section level and above for commanders. Norway is currently adding DAGR to its inventory.

Rena is a fully instrumented training area and so each soldier and vehicle could be tracked at all times. The system also provided the capability to monitor and record up to sixteen radio nets at a time, which enabled the trials team to better understand the effect of NORMANS. Lausund said, "It is hard to put a figure on it, but roughly 80 percent of baseline traffic was about where soldiers were and the answers were often either quite wrong or misleading. Nearly all the radio traffic with NORMANS was to do with the execution of operations. There was no necessity to ask anybody where they were, because at all times, all the commanders knew exactly where everyone was."

An improvement based on earlier testing was a switch from a 2D to a 3D compass, which Lausund

described as working extremely well. "At relatively short notice, Thales came up with a simple system which, on the face of it, looked like another line on a compass. All you do is point that at a target – a soldier who has gone down or an enemy position, and designate it. You select the range and then it generates a military grid reference which is then available for you to send either within the team or externally."

The Telemark battalion company were also issued with PLRF15C which can be integrated into the NORMANS Light and Advanced systems to generate a grid reference on the system. This was something the troops in the trial valued extremely highly.

While in some cases, NORMANS systems served only to automate existing processes and make them faster, in other areas FFI were pleased to see that the soldiers were using the system to do new things. Lausund explained, "In the OOTW mission, there was a point where they were asked to seal off a road system. They were given three potential tasks, all at night and having to move cross country between them. The minute they hit task three, they got orders from the company commander to set up an ambush. Normally when you set up an ambush, particularly at night, you gather everyone into a central point to brief them and then dispatch them or lead them into position. With NORMANS, we had a situation where the commander set up a plan, drew up his killing area and sent it as an overlay to all his guys. They then all moved from their previous locations which were about 1.5km apart, to their fresh positions, totally independently and just took up their positions. It worked like a charm. That was a classic example of doing something in a totally different way because commanders could monitor at all times, exactly where everybody was."

Modelling

THE 'NATO SOLDIER MODERNISATION MEASUREMENT FOR ANALYSIS: a framework for modelling and trials' document was used to develop the Kompanisett trials.

Lausund said, "The metrics are all to do with the speed of movement. We had the situation where the Baseline platoon was unable to complete all the missions

it was given because they were still trying to find their way through the woods. Because NORMANS gives you air photos and maps, you can select best cover and best going, so you arrive in much better condition to do something."

The NATO document was originally developed from the FIST Technology Demonstrator and was subsequently updated and issued in 2005. It defined specific missions and vignettes and the, MPO, MOE and MOOE associated with the assessment of C2.

Lausund commented, "In that framework, the emphasis is on the trials because in that document, modelling is expressed as an aspiration. Norway is now using that methodology to produce a model and that model is able to take qualitative and quantitative data from all the testing that we have done and turn that, through a scoring process, into a simplified figure that

represents the uplift in capability."

The NORMANS team believes that taking the document and modifying it to apply it to other NATO capability domains could give it a wider audience and appeal.

The ultimate goals of the trial were to assess the business case for potential future procurement and to identify areas of programme risk. The trials, Lausund explained, were very successful in this and outlined the process. "All the data was in put in the model and from that model we generated a number which showed the uplift in capability over baseline. I can't give you that number but it was significant. That number was then used in looking at the cost of baseline soldier versus the cost of NORMANS. I believe we are now at a stage where we can go forward for general procurement." ■



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