



MARS-L One Year On

It is a year since the new MARS-L weapon system was introduced into the New Zealand Army. *Army News* spoke with weapon replacement capability integration lead MAJ John Lawrey about the new system.

How has the rollout and integration of the new MARS-L weapons system gone?

This process is still ongoing but the early phases of introduction into service and conversion have been fairly straight forward. What's helped us is that units and personnel have been very keen to get out there to start training with the new rifle. What takes the real time is the little things, the detail such as some of smaller ancillaries and integration pieces like the vehicle weapon racks. As an example these need to be designed from scratch and have bespoke solutions for each type of vehicle. There is also a lot of background work such as updating Training Management Plans to reflect the new equipment and terminology that most users won't see. We continue to get a lot of good feedback on the MARS-L from users and with all rifles having now been issued it won't be long before all personnel in the three Services have had the opportunity to shoot the new rifle.

What are people saying about the benefits of the new weapon?

We get lots of good feedback and anecdotal reports from units and individuals but we are also doing some analysis of the recorded AWQ scores. This information will eventually be used by Army to redesign the WQ. That data has shown that there are fewer people not qualifying on the shoot and more people passing it with good (marksman level) scores. In fact the data so far shows twice the number of people are now shooting to marksman level.

What are some of challenges the project has faced?

This phase of integration into service is where all the little issues are ironed out so the kit can serve us well throughout the remainder of its life of type. As the rifles start to get some good use out there we learn more about how they will be supported. A couple of examples are; recently we worked out we needed better tools and standards for testing trigger pulls. The MARS-L's trigger

is exceptional for an assault rifle but without the right test equipment our armourers can't check and service them properly. The project has now bought all new digital trigger pull gauges to replace ones that hadn't really changed since WW2. We also saw some early breakages of firing pins so after an investigation by DLEM and the manufacturer (LMT) we determined that although the pins meet the US Army's Military Standard we could do better by introducing a new quality assurance (QA) test. Hence we now have a stronger, superior firing pin that we are putting into all rifles.

At the end of this process and once the capability has reached Full Operational Release all of these small niggles will have been straightened out and all of the requirements met. The design of the rifle remains well proven and the enhancements over the standard M4 or AR15 will mean this rifle will remain class leading throughout its life.

Is it like learning to drive a new car when you roll out a new weapon? I heard some people were finding the scope difficult to use?

Certainly there will be things shooters need to get used to but also our trainers who have only just learnt to use the rifle themselves are working out how best to teach it. As the collective experience with the MARS-L grows these difficulties will decrease. The Army Depot has done some good work developing detailed lessons plans from the Book 4 (ed. NZP 99 Book 4), and these are available online. In terms of the rifle's ACOG scope we did have a small number of shooters getting bruises and minor cuts from what's generally known as sniper's eye. There are contributing factors such as firing position and eye relief but after some investigation the fix turned out to be as simple as reversing the emergency iron sight on the side of the ACOG as that was what was hitting the shooter's forehead. Problems like this that arise need to be reported through RODUMs and if an injury is caused then SRS. This helps us in being able to investigate and test solutions.



2/4 get familiar with the MARS-L

By John Cosgrove

Personnel from 2/4 RNZIR had their first live fire application shoot with the MARS-L weapon system recently.

Eighty-three soldiers from throughout the South Island converged on the West Melton rifle range for two days of training to upskill during in a familiarisation weekend in preparation for their upcoming annual weapon qualification.

Soldiers were excited to be using the new weapons system especially working with the new ACOG sighting system over multiple ranges up to 300M.

2/4 RNZIR S5 MAJ Ian Piercy said he was really impressed with the accuracy of the new weapon system particularly the new sighting system.

"The accessories of this system ensure maximum comfort for the firer which I am convinced will improve the accuracy of rounds on target.

"It was pleasing to see the soldiers quickly adapting to the new system with some very accurate shooting during the application phase of the weekend," MAJ Piercy said.

MAJ Piercy added that by completing the application shoot it will make it easier for those who attended to confidently qualify on the upcoming AWQ.

Was this a first for LMT to provide this many weapons to one military?

LMT have had other military contracts including for the UK but this has been their largest single order. To support demand for their rifles both in the US domestic market and international sales the LMT factory runs 24hrs/7 days. Our rifles were produced in batches of about 2800 each, which helped us with our delivery pipeline as we only had the ability to test, receipt and issue so many weapons at one time. There has been a lot of detailed co-ordination to get the right weapons and spares out to the users – a new rifle is no good if you don't have spares, tools and trained armourers behind you to back the capability up.

What is the life of type with this weapon?

Life of Type (LOT) is a figure given to all types of equipment we introduce, and for MARS-L it's 15 years. It's based on our ability to support the kit rather than how long the actual kit lasts. During its LOT a weapon may have new barrels and parts fitted, and if new parts kept being fitted it would last well beyond the expected LOT. LOTs are continually reviewed, and if in 10 years we can support the rifles with no issues and the maintenance procedures are still working then the LOTs can be extended.

You represent the NZDF on a NATO sub-group for weapons and sensors. How does our procurement stack up against what other militaries are buying?

That NATO group is all about interoperability but is also a great way for countries to share information about procurements. As an example our sniper rifle project has benefited from the recent experience of the Norwegian Army who had a project running a few years ahead of ours. As we have now just got our evaluations other countries have been really interested in what we have selected and have been after our reports.

In terms of assault rifles there are only a couple of countries with full replacement projects going on. Germany, for example, is replacing its G36 rifles after well documented faults have led to a loss in confidence of that design. EU politics, however, has meant the German Government had to specify that the new rifle has to be manufactured in Europe. Our projects have the freedom of being able to look globally for the best solutions available. The feedback I've had from members of the NATO group is that our procedures and procurement approach are pragmatic and flexible with a higher emphasis on the user testing. Some other countries' procurement procedures are more prescriptive and dictated. In terms of the actual rifle itself it's obvious there are a number of countries who still run rifles that aren't fully ambidextrous (forcing all to shoot right handed) and that still rely on iron sight for most of their troops.

We also continue to do more testing and work to ensure we are as interoperable as we can be with our ABCANZ and NATO partners. For example, recently DMMG has sourced samples of all of the 5.56mm ammunition types in-service with ABCANZ and we will test them through MARS-L so we can measure the exact zero shift and produce shooting tables that can be used if deployed on exercise or operations with a partner's ammunition.

Is there anything else we should know about what the future holds for ISWRUP projects?

ISWRUP delivers the last two capabilities (sniper and anti-materiel rifles) this year, and after that the programme will close. However the ongoing work to continually review our small arms capabilities and upgrade them where necessary will be handled by the relatively new Soldier Modernisation Office (SMO). A branch of SMO will be responsible for the lethality part of the soldier capability. They, together with Capability Branch's Land Capability Working Group, will be responsible for continually updating the user

requirements and Concept for Employments documents for each of these capabilities and making sure upgrades or future replacements are appropriately budgeted for. This will ensure the New Zealand soldier is equipped with the right tools for the job.



LCPL Caleb Amner

So what do soldiers in the front line think of their new weapon?

The MARS-L is more reliable at longer ranges as the ACOG sight is calibrated for that particular ammo nature, says LCPL Caleb Amner, a Light Armoured Vehicle Commander from Queen Alexandra's Mounted Rifles, and a top shooter from last year's ASSAM competition.

The heavier grain ammo is less affected by environmental factors at longer ranges, he says. "Being an ambidextrous weapon makes carrying out weapon I.A's more efficient. Another comparison with the Steyr is that the MARS-L is more front heavy which helps with a little recoil control but becomes a strain in some positions, like standing unsupported."

The challenges with the new weapon, he says, is like with anything new. "It's just getting a decent amount of exposure with it so that the drills become second nature and you can focus more on accurate shooting and applying marksmanship principles."

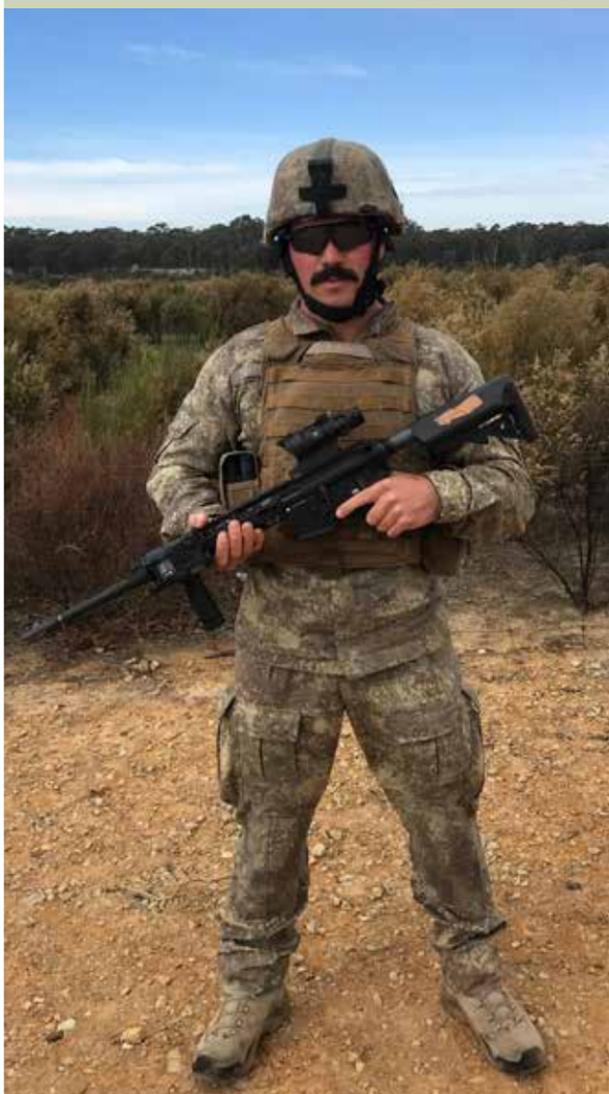
Another challenge with the MARS-L soldiers have found is that what worked with the Steyr may not be suitable for the MARS-L. "As firers we have to change and adapt to the new style of shooting that the MARS-L provides."

LCPL Amner says when he helped coach the 2018 ASSAM team he tried to instil that just because the MARS-L is a new weapon with a new 4 power scope it doesn't automatically make a soldier a better shot.

"Taking their time to get the correct eye relief and the correct extension of the stock is key. Firers just need to find what works for them because everyone is different. What works for me may not work for someone else. But once they find out what works for them then they can focus on other things like different grips and positions.

"Firers need to keep in mind that being confident with the MARS-L will help a lot with their shooting. Some firers get on the mound and aren't confident and end up being controlled by the weapon instead of controlling it. The magazine also is longer when fitted to the MARS-L than it is on the Steyr causing a seesaw like movement when firing in the prone position making it more difficult to control recoil."

The MARS-L has many attributes the Steyr lacked, says another of the Army's top shooters, Private Cam Nicol.



PTE Cam Nicol

The main improvement for the left-handed soldier is the ambidextrous controls on the weapon, but there are more advantages, he says.

"It has a telescopic stock so the correct length of pull can be acquired no matter the size of the user and if you are wearing body armour or not.

"The 4x ACOG sight allowed me to release the shot with confidence that my point of aim was correct, especially at the longer ranges 500-600m."

With the MK262 77grain ammunition he says there is a huge improvement in accuracy over the Steyr.

"The modularity of the rail system means you can quickly alter the setup of the rifle for both the firer and the mission, for example PEQ15 lasers and fore grips etc."

There are challenges with the MARS-L too, he says.

"The safety cannot be engaged when the weapon is not cocked, and as a result of this the "load-action" drill has been altered so you cock the action and apply the safety before installing the magazine. For myself and others we had to really concentrate on the drill to insure we then cocked the weapon a second time after the magazine was installed to chamber a round."

The firer needs to be aware of his or her quick detachable scope mounts and accessories to ensure they are tight. Failure to do so will result in loss of zero or that part may fall off. The shooter must be constantly aware the drills have changed,

PTE Nicol says the MARS-L has different ergonomics to the Steyr. "So what may have been your preferred grip or stance with the Steyr may now need to be altered or changed. That is the individual's job to work out what works, no set style is right for everyone!"

"In my opinion the MARS-L is a better weapon in almost every way, but don't expect to go out and be a better shot without practice and real time application on the range. With enough trigger time and ammunition down range it is a great tool to make every Kiwi serviceman/woman more effective than ever."