


UNLEASHING POTENTIAL



DAN HAS SOMETHING OF A “REP” WITHIN THE AA CREW NOW WHEN IT COMES TO GETTING THE VERY BEST OUT OF AEGS, AND THIS TIME HE TAKES ON THE BEAST THAT IS THE LAMBDA DEFENCE MK48 MOD 1 TO SEE IF HE CAN GET IT TO REACH THE POTENTIAL IT PROMISED FROM THE OUTSET!

In the early 2000's, United States Special Operations Command (USSOCOM) was seeking a suitable replacement for their aging fleet of 7.62mm M60 General Purpose Machine Guns.

The M60 was more portable

Designated the Mk 48 Mod 0, this proved itself to be more reliable than the M60 platform, while also being lighter weight and having the benefit of sharing the same manual of arms as the M249.

Naturally, the airsoft market will always desire anything fielded by US Special Operations, but for many years there was not an airsoft equivalent to the MK48 series to meet the demand.



and ergonomic than the much heavier M240 series, which clocked in at a hefty 27.5 lbs. and measuring over 49" long, but was not without its flaws in the reliability department. Despite several variants that improved upon the original design, it was determined that fielding an all-new machine gun would be a more desirable option.

In 2001 USSOCOM solicited a request for this new machine gun and Fabrique Nationale Herstal submitted for trial a scaled-up version of the M249, which had already been in service since the early 80's.

Honorable mention should go out to Killen Customs for pioneering the first retrofit kits that could be fitted to the Classic Army / A&K series M249. These were custom CNC machined components that were largely bolt-on and intended to be fitted with surplus MK48 box magazines. Owing to their limited production run, they were expensive, scarce and generally out of reach for many. As nice as these were, they also couldn't quite overcome some of the more fundamental design differences between the M249 and the MK48, simply because of the base gun it was using.

It wouldn't be until many years later that a fully fleshed out MK48 would finally be offered: enter Lambda Defence with their MK48 MOD 0 and MOD 1. Perhaps one of the most accurate and to-form replicas offered, an absolute unit of built of solid steel throughout and in at massive 22 lbs. with the magazine attached. Outside of Real Sword, I have yet to find

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TECHNICAL

LAMBDA DEFENCE MK48 MOD 1 OPTIMISED



another AEG replica that feels quite like the real thing as this does. The model specifically covered here is the MOD 1 version, which features a retractable stock and lower profile handguard and heat shield arrangement. Full disclosure: this replica was sent to me on behalf of one of Amped Airsoft's employees who had purchased it new, but reportedly had issues with the gun straight out of the box. Despite some efforts at remedial teching, it still never fully ran 100% and had a gamut of problems. Everything from spitting BB's, to poor feeding, low FPS, and various other assorted maladies. At this stage in its life, it was a veritable US\$825 (and quite heavy) paperweight.

Admittedly, I don't normally like to work on LMG platforms (oh REALLY, what about THAT PKM??? – Bill) because they often require an inordinate amount of time compared to what one can realistically charge for the labour to get them running smoothly. The crux of the problem is it always boils down to them having low-quality internals with sloppy tolerances. Therein, my major gripe with LMG platforms as a whole is the price-point they command does not really align with the lackluster internals they are typically outfitted with. Complaints aside, I wanted to at least get some familiarity with the Lambda so I could speak from a position of experience next time someone wants to send one in for work or get an opinion on the viability of the platform.

GETTING INSIDE

So, all that being said, despite its lofty price tag the Lambda does not defy norms and expectations and comes equipped with... an A&K M249 gearbox. Cue the salty sigh of resignation...

The first order of business would be to pull the gearbox and rebuild the foundation. This was supplied with a few upgraded internals as part of the previous effort to fix it. Since those components were largely still in new to like-new condition, they were retained for the purpose of upgrading this. Anytime I rebuild a gun, it gets a full teardown to the individual components. This is mainly so I can start from a "known base" – which is to say, it's always beneficial to start from scratch with the full knowledge of what you have installed and how you installed it as opposed to making an assumption those parts were installed

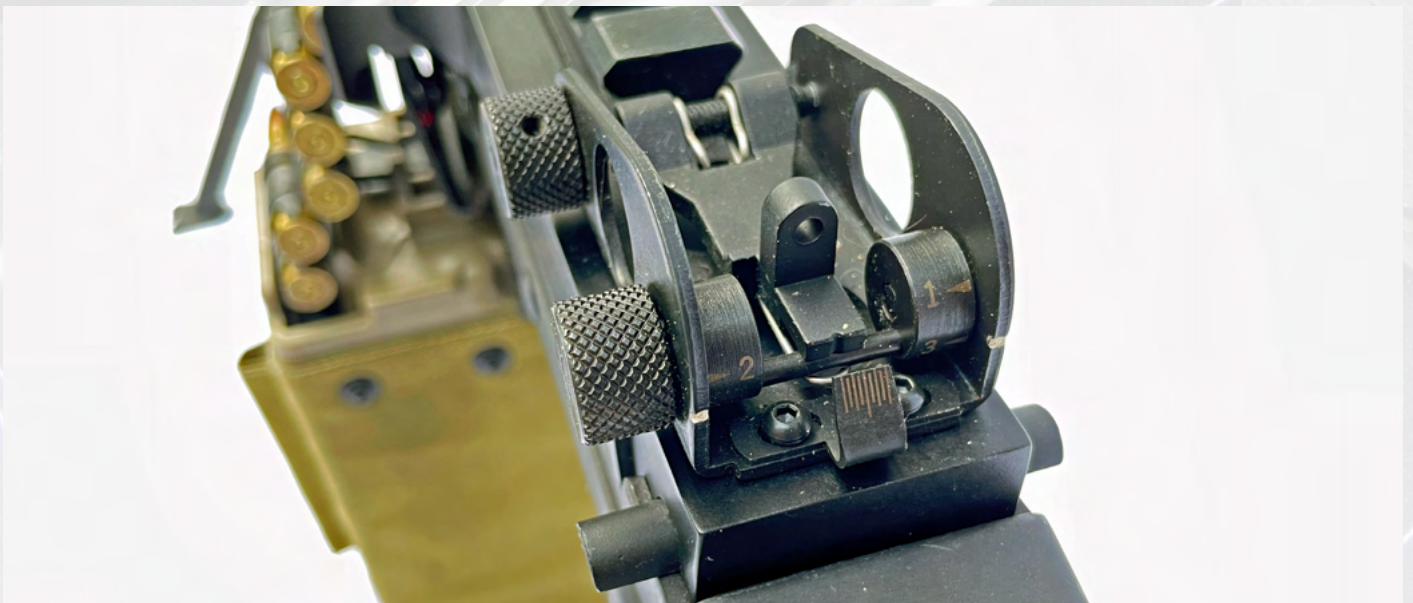
correctly before. With respect to LMG builds, my philosophy is to build them to be durable and to last. These see a volume of fire that far exceeds that of a typical AEG - sometimes in a single game day even.

Disassembly of the Lambda MK48 is sublimely simple, and mimics the A&K version nearly identically; save for one less screw to remove and not needing to remove the charging handle either. On that latter note, the charging handle does not interfere with the closing of the feed tray cover like it does on the A&K SAW. Just like the A&K, depressing a lever will handily remove the outer barrel and hop up assembly too. I will say that the spring for the barrel takedown lever is remarkably weak. You have to be careful about ensuring the barrel assembly is properly locked in place as it is possible to not quite get it indexed and have it fall out of the gun. This is probably the only area where the A&K trumps the Lambda design since the spring for the barrel retention lever is much stronger.

The plan for this build was to use a Warhead 27K Base brushless motor and a set of Rocket 17.28:1 gears for the drivetrain. I quickly found out there wasn't really enough room for proper shimming of the bevel gear, even with the supplied 7mm FLT bushings. The bushing shoulders just sat too high and the gears were simply too tall. I ended up taking both shell halves to my mill and milled in some recesses for the bushing shoulders so they would sit flush with the interior of the shell. The FLT's were pressed in place with some Loctite 638 retaining compound, which is designed for press-fit applications such as this and would ensure the bushings would never spin out in their recesses. Now that there were enough clearances to work with, the gears could be properly shimmed out, starting from pinion to bevel, spur then finally the sector gear.

On the compression side, the ever-excellent Angel Custom KRATOS piston was installed with a Lonex POM ported piston head, which was itself fitted with a 70D Viton O-ring. I switched to using these as a matter of course some years ago as they are vastly more durable and longer lasting than anything supplied with Airsoft parts. Then I added a 70D AirPad to the SHS CNC cylinder head, which was installed into a MAXX unported stainless steel cylinder. For the

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tappet, I replaced the stock A&K with a Guarder Ver. 2 tappet plate. Initially the air nozzle I selected was a G&P 21mm CNC nozzle. This was based on what I now believe is erroneous reporting of what the stock Lambda nozzle uses (the original nozzle was missing, so I wasn't able to verify its length). But also because a straight-wall nozzle design is required in order to fully index into the hop up chamber. Anything with a stepped base will simply not fit into the chamber otherwise.

The last bit was to rewire the gun for a Gate WARFET MOSFET. I built a custom wiring harness using 16AWG AlphaWire EcoWire and hooked up the trigger microswitch with the supplied dual-signal wire. This was set up to sync the box mag to feed when the trigger was depressed. A Guarder SP130 spring was dropped in to start with for baseline testing. Since these gearboxes have a true quick-change spring guide setup, it would be a simple matter to swap spring to bring the gun inline to our desired LMG limit of 450 FPS.

While in stock form the gearbox is fully A&K, the hop up chamber is definitely not. This is basically a near clone of the Bullgear CNC chamber, albeit made from casting. Much like the Bullgear chamber, it places the hop up nub in a more optimal horizontal position as opposed to the hard vertical cylinder used in the A&K SAW chambers. This was outfitted with an EdGi stainless steel barrel and Maple Leaf MR Hop bucking and Omega nub. This chamber is a good improvement over the original design, but is nearly impossible to adjust when the barrel assembly is locked into place. This is because there is a spring-loaded detent that prevents the hopup wheel from being rotated, sort of a 'lockout' device. In order to easily adjust it, I found it was necessary to pull the barrel release latch so the chamber could be cocked forward and not have undue resistance from the detent. This is somewhat inconvenient and can be complicated by the fact that it is occasionally possible to experience what I call "BB lockup" which is where you have a BB sitting in between the entrance to the hop up and the internal feed tube. This can prevent you from removing the barrel entirely unless you remove the box magazine too.

TESTING TO PERFECTION

On first testing, I immediately determined the air nozzle was far too short... erroneous reporting indeed! On the chrono, the gun was turning in a piddly 238 FPS / 0.52J! Now I had moved to the stage of testing different nozzles to land on the perfect combination of both feeding well and sealing perfectly. There are some techniques to determining what you might need with good approximation, but obviously nothing is the arbiter of truth like actually firing the gun and observing what happens. I initially bumped up to a Retro Arms 21.40mm, which was too long to feed well, but did fit the chamber. I eventually ended on a Raptors RTQ CNC nozzle, which had the stepped base turned down and modified to 21.31mm in length. Now we were feeding! Albeit quite hotly, as the SP130 was sending them out there at a massive 535 FPS / 2.6J. An SP110 seemed to do the trick and allowed for a comfortable safety buffer with the joule output of the heavier .32g this would normally be run with.

Against my expectations, I was encountering some mild premature engagement issues with the piston, however. After another dive back into the gearbox to short-stroke two teeth from the sector and bumping the spring up to an SP120 to adjust FPS again, we were back in business and purring... well, almost.

The Lambda has a reasonably well-built 5000 round box magazine, but a woefully anemic and tiny motor to power it. Many users have reported their MK48's simply do not feed well unless set to "constant on". I personally do not like the idea of having a box mag constantly running whilst not doing things like actually shooting. The toggle switch is also in an inconvenient location on the underside of the magazine, which has to be accessed via a zippered flap. I would have loved to drop in a Bullgear box mag insert, but none exist for the Lambda yet. It is reportedly possible to modify a SAW insert to fit, but owing to the location of Bullgear in Russia, their products have been quite difficult to obtain lately. Here the WARFET came to the rescue with its handy ROF reduction feature. Turning it down 10% seemed to do the trick and allowed the box mag to keep up with the gearbox.

Related to the feeding issues, one of the big things inhibiting feeding is the internal feed tube

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that sits inside the body of the gun. Unlike the A&K M249, which feeds in from the side, the MK48 feeds from the underside, much like the PKM or G&P M249 series. There is a short feed tube that bridges the space between the feed port and the hop up chamber. This tube is kind of weirdly placed and it makes a tight little S-curve owing to the fact that it's only held in place with tension. During assembly of the gun, you have to be very careful not to knock it out of alignment. There is also an alignment bracket for the hop up chamber that can also cause problems if the screws holding it in place are over tightened. This will essentially cause the chamber to not fully index into the gearbox, which creates an air gap between the nozzle and bucking. I found it was best to just leave those screws slightly loose.

At last, we now had a fully functional MK48... and I must admit this beast absolutely dazzles with range and accuracy now! While it took a fair bit of work, I was happy that I was able to make this a skirmishable platform. My arms were also bit thankful for finally being allowed to put the gun to rest too. Carrying this hulking beast up and down the stairs from my shop to get it outside to test fire it was a physical exercise unto itself!

Overall, my impressions of the Lambda MK48 MOD 1 are admittedly a mixed bag. On one hand, I definitely appreciate the quality of the body construction and attention to detail therein. Even the screws and hardware used are much higher quality than the soft and easily stripped bits you normally encounter. It's simply beautiful to behold and gives

one an appreciation for what it must actually feel like to pack a (admittedly light for its type) machine gun around. The disassembly process to pull the gearbox is simple and quick and the stock can even be removed without the need for hammer and punch like so many of the overly-tight A&K and Classic Army variants require, all of which makes changing springs a breeze. The bipod is also frankly one of the best-built replicas out there and doesn't feel like the flimsy brittle steel that one is usually acquainted with.

On the other hand, there are definitely some problematic areas with this gun that I hope will be addressed with future revision. The barrel latch spring is weak, as is the carry handle; the latter of which actually arrived broken. The trigger is a spectacularly floppy affair that hangs off a single roll pin. Then you have the internals, which are frankly disappointing to say the least. Why such an expensive gun comes outfitted with a gearbox from a manufacturer that hasn't produced a lick of innovation for decades now is an unfathomable mystery.

Would I recommend the Lambda? If you want a MK48 replica, it absolutely is the only game in town. For the most part it is an excellent replica on the merits of the body alone, but like any other existing production, or for that matter, any discontinued LMG platform out there, you should expect to sink some time, money and sweat into making it a competitive gun on the field.

Many thanks goes out to Izaac from Amped Airsoft for giving me the opportunity to work on his MK48 MOD 1... it's been an experience! **AA**

