

OLD SKOOL COOL... NEW SKOOL TRICKS!



IN HIS RED CELL SPECIAL THIS MONTH BILL MENTIONS THE XM177, A CARBINE THAT WAS A VITAL BUILDING BLOCK IN THE DEVELOPMENT OF THE M4 THAT WE ALL KNOW AND LOVE TODAY! HOWEVER, DAN HAS NEVER BEEN TOTALLY HAPPY WITH THE "XM AEGS" ON OFFER FOR AIRSOFT, SO DECIDED TO GO ABOUT CREATING ONE OF HIS OWN, AND NOW HE SHARES THE DETAILS OF A STUNNING BUILD!

Being a steadfast fan of KWA and their excellent AEG 2.5 / 3.0 system, one of the things I have always wished for was a proper fixed carry handle upper to create some 'old school' builds with the last round cutoff function and recoil. To my knowledge, this is something KWA has never offered, even amongst their original G2X series of AEG's. While they have had a few carry handle models in inventory, they are of the more modern detachable variety, so are therefore unsuitable for replicating older designs such as the M16A1, A2 and XM177 series - not to forget other notables like the GAU-5, CAR-15 and Colt 733.

The modding community has come up with some creative solutions in the past to create fixed carry handle uppers for the KWA platform. The traditional method has been to purchase a G&P upper receiver and cut off the handle flush with the top of the receiver. The KWA receiver itself is still retained, but

here one will have to remove most of the picatinny rail, then through a combination of drilling, tapping, affixing screws and epoxy, mate the G&P carry handle and KWA upper together. After which, an extensive amount of sanding is necessary to seamlessly blend the two components together, finally followed by a complete refinish of the upper. No small amount of work, to say the least of it!

I stumbled upon an alternative method completely by happenstance: one of my customers was attempting to slide a CYMA XM177E2 upper onto his KWA VM4A1 lower, which I had previously built in a "Dissipator" style build for him. Unfortunately he had firmly gotten it stuck halfway on there and requested my assistance in removing it and modding it to fit, if possible. If not, we'd just revert the gun back to the Dissipator build and call it a day. Once I had the rifle on my bench, I managed to tap it apart with some careful prodding with a nylon hammer.

The mock bolt cover was naturally destroyed in the process, but upon closer look, the CYMA upper was remarkably close to fitting the KWA lower. There were just some minor variances to overcome. After a couple of hours of work, I had managed to mate the upper and lower together, and even replaced the mock bolt and had it operating wonderfully. After this successful venture, the bug was firmly planted and I was determined to build a complete XM177E2, a model that I have always been a fan of as an early version of the now ubiquitous M4.

selected this particular model because it has the single-side traditional metal selector and standard charging handle assembly in lieu of the ambidextrous components found on the newer KWA platforms. A CYMA XM177E2 was purchased so I could pull the upper receiver off for the build. It's a bit unfortunate that I have to buy a complete rifle to do this modification, but as a second-hand "boneyard" donor the CYMA's are quite affordable and selling the rest of the unused components off easily recoups the initial investment made.

On my second iteration, I realized I had made a little more work for myself than was necessary when it came to modifying the CYMA upper to fit. After refining my technique a bit, the amount of modification required is divided approximately 50/50 between the upper and lower receivers, with just a tiny



A TALE OF TWO AEGS

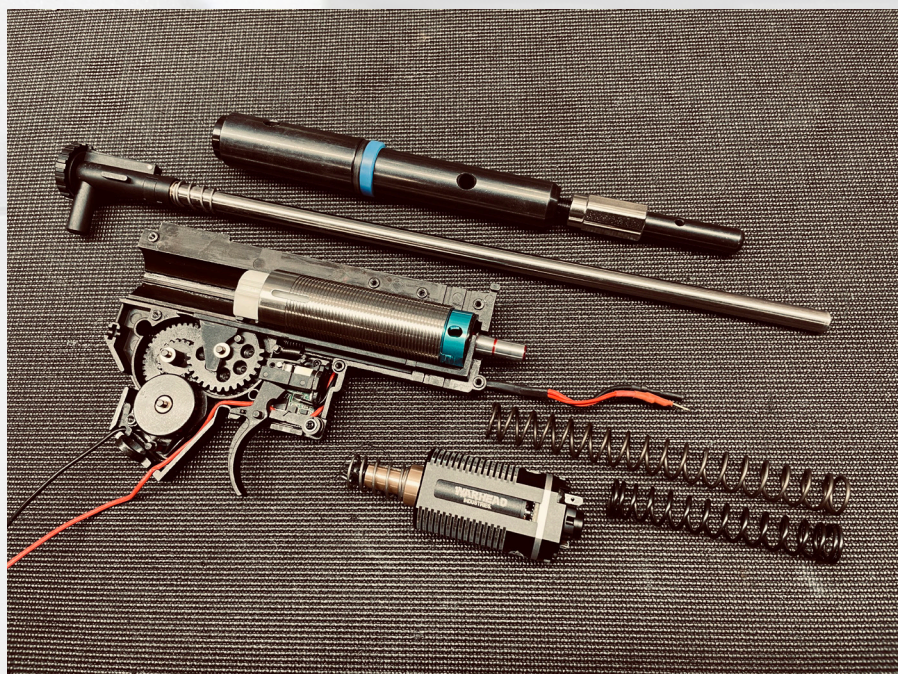
For the subsequent build, I selected the KWA RM4A1 ERG to use as the base to work off of. This version uses the AEG 3.0 gearbox with the last round cutoff function and features KWA's robust recoil system. I also

bit of material having to be removed from the top of the gearbox where the charging handle spring attaches. Much like the original KWA upper, the CYMA receiver has a pair of tabs on the back that index into the lower to prevent the assembly from being able to swing off. In unmodified form, these tabs were hitting the back of the KWA receiver and preventing things from fully sliding together.

The easy option would be to thin down those tabs, but I believe it would create a weakness and thin tabs would be more prone to snapping off if the gun was ever dropped or bumped hard against something, which would result in having to bin the receiver. Since the lower receiver

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has a lot of material around the buffer tube area, it makes more sense to modify this area for clearance and retain the full strength of the tabs. 30 minutes of some careful Dremel work and a milling bit whipped it out and it's solid as can be!



There is also some extra material inside the upper that needs to be thinned down so it will slide over the thicker gearbox casing the KWA uses; in this case, the reinforcements on the front of the gearbox are the main things that need clearance. As previously mentioned, there is also a small little tab on the very tip of the charging handle spring retainer that needs to be filed off too. Otherwise this will drag on the inside of the receiver and make it difficult to slide the assemblies together. One thing to note is the KWA charging handle assembly and mock bolt are retained, so the CYMA parts will need to be removed from the upper before attempting installation.

The only other item that needs to be addressed is the difference

in thickness of the front lug that the pushpin slides through. KWA's lug is a fair bit thicker, so a pair of shims needs to be epoxied to the lower to fill in the gap to either side. This will prevent the upper from being able to be pushed side-to-side otherwise, which would result in the hop up chamber getting misaligned. After that, it's pretty much ready to have a gearbox and barrel installed. Overall, the scope of modifications is significantly easier and far less time consuming than the old method.

During the course of modifications, I elected to change out a few items from the CYMA upper for some better components. Namely the delta ring was swapped to a KWA delta ring. These are the best looking and best fitting ones on the market, in my humble opinion. Oddly, the CYMA comes fitted with the more modern larger diameter handguards, such as would be found on the M4 carbine. I procured a set of correct real steel slim-style handguards with heat shields to replace these. I also switched out the front handguard retainer with a KWA version,



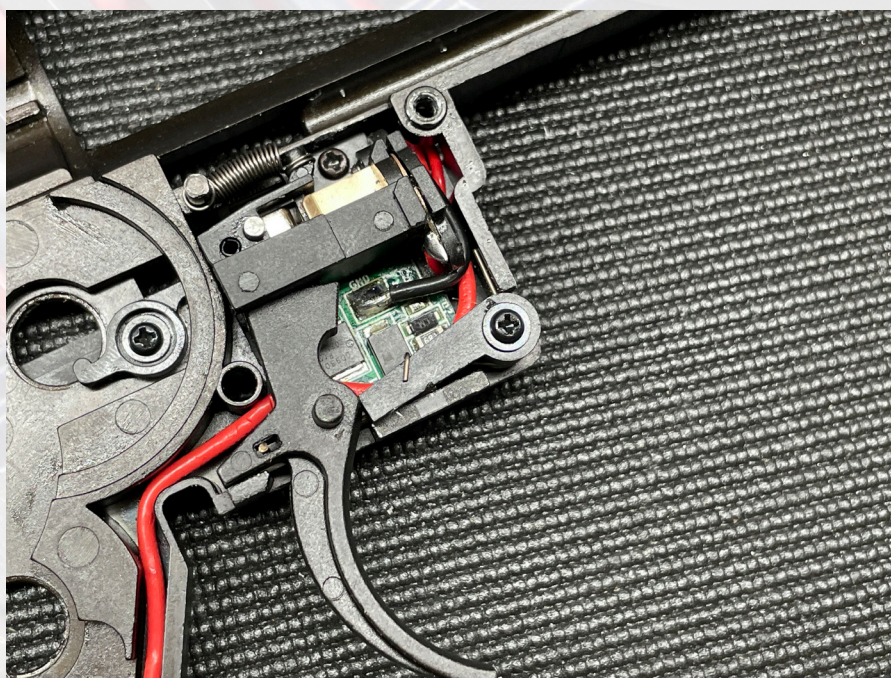
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though I plan to see about modifying a real version to fit in its place at some point. These changes all made for a much more rigid front end and eliminated the previous handguard wobble that was there with the CYMA components.



Moving to the back of the gun, a real steel replica CAR-15 fiber stock from B5 Systems replaced the CYMA version. I was hoping to find an original Colt aluminum stock, but the rarity of this item and the skyrocketing price on the secondhand market makes it bit of a hard pill to swallow. I did retain the smooth A1 style grip from the CYMA, which does the job well. I'm not especially a fan of the A2 grip, with it's annoying finger ridge and sharper angle, but the A1 sits neatly between reasonably comfortable and distinctively retro.

There are, of course, some minor aesthetic discrepancies to be taken care of still. The buffer tube and the castle nut would be one of those. These are a proprietary size unique



to KWA, so the correct type would have to be manufactured entirely from scratch... which would be no small expense! Despite a dearth of laser shops here in the US, I have so far been unable to find a company willing to take on the task of deep engraving the

lower with proper Colt trades and markings. KWA's factory markings are very minimalistic on this lower, at least, and it fortunately doesn't have the ugly "B.A.M.F." markings and skull logo that the CYMA came with.

PERFORMANCE, FIRST AND ALWAYS!

So with the external side largely completed, I popped open the hood of our XM and installed some performance upgrades next! One of the things the aftermarket has sadly neglected to provide for this series of AEG's is a proper MOSFET trigger, or even an ETU. We don't even have the luxury of a drop-in Electronic Trigger Unit from Gate, despite the ERG system outnumbering Tokyo Marui's NGRS by an easy 10:1 in the US! Typically, an inline-style MOSFET

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is your only real option for these, and they have to be installed in an area that can properly house the dimensions of the unit. Since the buffer tube on this gun is entirely consumed by the recoil piston assembly, and the stock doesn't have provisions for housing a battery, this AEG would have to be front-wired. The slim style hand guards are also limited on battery space, so this precludes using some of the larger MOSFET's such as the Gate WARFET.

Following up on a hunch I've had for some years now, I decided to see about modifying an Acetech AceMOS MOSFET to fit. This is a simple and reliable unit that comes pre-installed to a standard Ver. 2 trigger switch. Users familiar with VFC's Avalon MOSFET trigger will certainly note the uncanny resemblance... which perhaps begs the question: who is supplying who?

In any case, after some careful eyeballing I determined it could be made to fit the AEG 3.0 gearbox. The KWA trigger switch itself would have to be retained, as that is proprietary, so I carefully desoldered the wires from the AceMOS and removed the PCB board from the Ver. 2 switch. A couple of minor modifications were necessary to make the board fit within the space constraints of the shell next, after which it was glued to the KWA switch housing. I fashioned a pair of custom trigger contacts so they could be soldered to the correction locations on the board. Fortunately the AEG 3.0 gearbox already has a pass-through hole for front wiring (a carryover from the old PTS RM4 days) so no shell modifications were required here. Up where the Tamiya plug end would sit is a bit of a bulky PCB board that acts as a fuse holder. This was removed and redone with a Deans plug and a condensed 30A fuse assembly. There is just enough room to install an 11.1v 1200mah tri-panel LiPo in this area still.

Owing to the smaller battery capacity we are left dealing with, it makes perfect sense to install a Warhead brushless motor to help this build reduce amp draw significantly. This will allow it to run cooler and more efficiently, without stressing the smaller batteries by exceeding their maximum safe amperage draw. With the Warhead motor, I was able to reduce amperage draw to an operating level of just 9.5 amps. The rest of the gearbox was outfitted with an Angel Custom Kratos piston, Lonex POM piston head, 70D AirPad, Lonex cylinder head, Retro Arms CNC air nozzle and SHS 18.65:1 gears. The proverbial 'icing on the cake' was the addition of a Ulysses recoil kit. This is a CNC'd steel recoil weight that also features an adjustable spring guide for fine tuning FPS, very similar in concept to the VPS system that KWA uses.

This is designed to improve the felt recoil impulse over the stock assembly; and I will say it does exactly that! I've fitted it with an Eagle6 NGRS M110 spring to bring the FPS up to nominal US field velocity of just under 400 FPS.

Since I wanted to be able to use KWA magazines with the last round cutoff feature, I opted to retain the stock hop up chamber. This was outfitted with a Lambda 6.05 stainless steel barrel and R-Hop. While I would absolutely love to have some actual 20 round style aluminum midcaps with cutoff capability, no such options exist. I will have to content myself with the small handful of KWA ST60's for now. Unfortunately these have been long discontinued, so they are pretty much veritable unicorns now.

While I am not particularly into "NamSoft" and opportunities to partake of such events are few to almost non-existent (to the extent that I no longer own any Vietnam themed kit), this was approached more as something fun to build and one of those items I've always wanted to scratch off my personal checklist. This rifle came out phenomenally solid, and even weighs within a few ounces of the real XM177E2. It kicks hard, shoots far, and feels positively lithe in the hands. I'm more than pleased with the performance and aesthetic outcome of this build and will certainly enjoy using it at future skirmishes! **AA**

BUILD SPECS:

- KWA RM4A1 Modified w/CYMA XM177E2 Upper
- Real Steel slim style handguard set
- B5 Systems CAR-15 replica stock
- CYMA A1 style motor grip
- Lambda 6.05 SUS304 stainless steel barrel
- R-Hopped
- Retro Arms CNC air nozzle
- Lonex double O-ring aluminum cylinder head
- Angel Custom stainless steel cylinder
- 70D AirPad
- Lonex POM piston head
- Angel Custom KRATOS piston
- SHS 18.65:1 gears
- Modified Acetech AceMOS MOSFET
- Warhead 30K brushless motor
- Ulysses ERG recoil kit
- Eagle6 M110 NGRS spring
- FPS: 398 w/.20g
- Weight (w/no magazine): 6.2 lbs / 2.73 kg