BEAST MAX!

PTS SYNDICATE, PERHAPS BEST KNOWN FOR THEIR PROLIFIC LICENSING WITH REAL STEEL MANUFACTURERS, HAS ONCE AGAIN DELIVERED A NEW AEG TO THE MASSES, THE PTS RADIAN MOD 1! DAN HAS BEEN WORKING WITH THIS MODEL, BRAVING WINTER TEMPERATURES TO CONDUCT HIS TESTING, SO NOW HE BRINGS US HIS THOUGHTS ON THE VERY LATEST ADDITION TO THIS GROWING LINE OF UNIQUE AEGS!

The PTS RADIAN MOD 1 marks the third licensed replica created in collaboration with KWA Performance Industries, starting with the Magpul branded PTS RM4 Scout, which kicked off the famous ERG lineup many years ago, then later following up with the hugely popular PTS Centurion Arms CM4-10. With the former releases, these were based around the AEG 3.0 gearbox, which featured fully functional controls, last round cutoff and mechanical recoil.

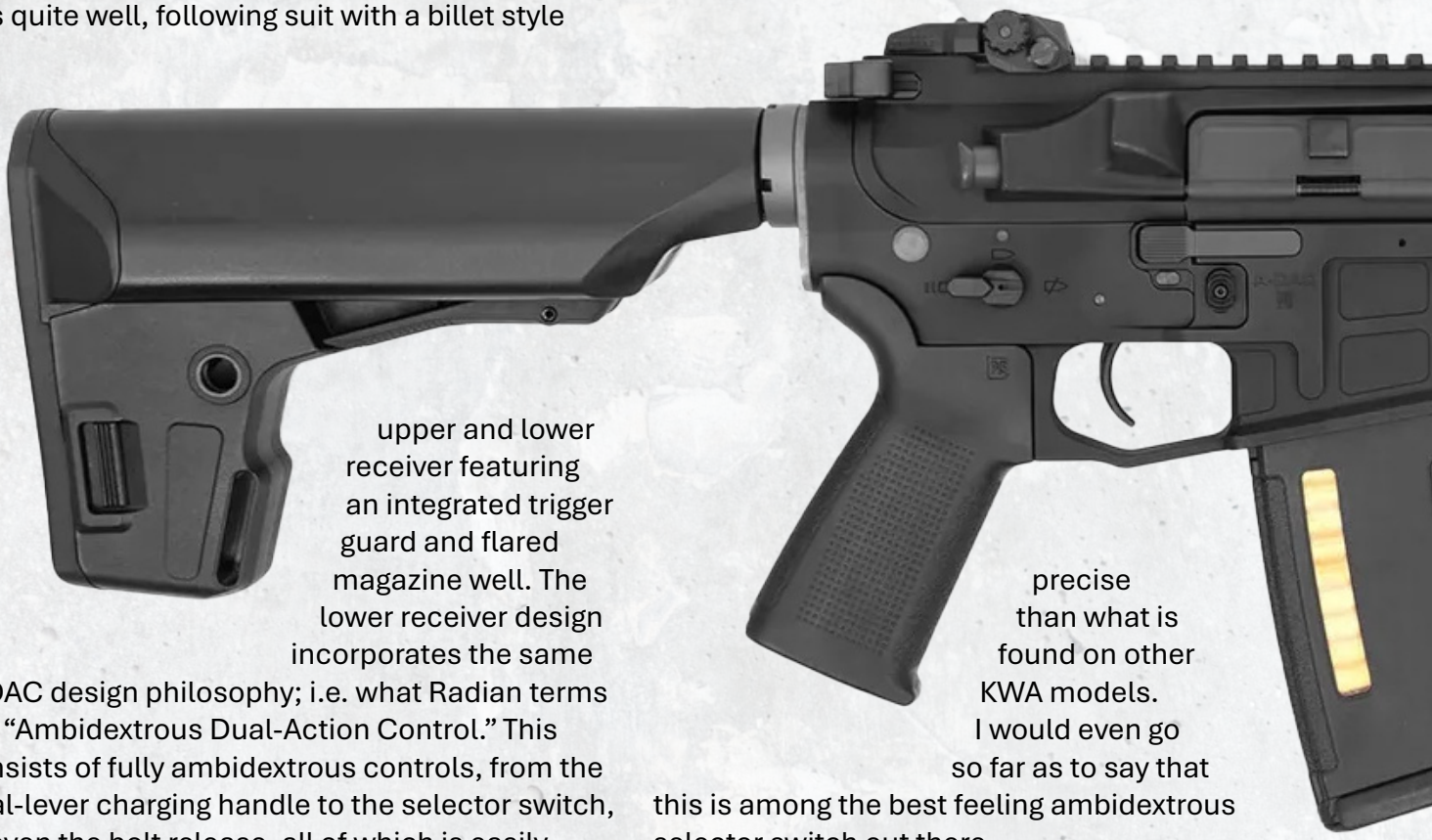
The Radian MOD 1 takes on a different tack with the adoption of the AEG 3.0+ gearbox, omitting the last round cutoff function in favor of an ETU compatible gearbox design, yet still maintaining that simulated recoil that fans of the ERG system have come to love.

Externally speaking, the MOD 1 sets out to

"THE PTS VERSION HAS REPLICATED THIS QUITE WELL, FOLLOWING SUIT WITH A BILLET STYLE UPPER AND LOWER RECEIVER FEATURING AN INTEGRATED TRIGGER GUARD AND FLARED MAGAZINE WELL. THE LOWER RECEIVER DESIGN INCORPORATES THE SAME A-DAC DESIGN PHILOSOPHY; I.E. WHAT RADIAN TERMS THE "AMBIDEXTROUS DUAL-ACTION CONTROL.""

replicate the 14.5" version made by Radian. Among the myriad AR-15 style configurations out there, Radian's certainly stand among the "most distinctive" category in the aesthetics department. The PTS version has replicated this quite well, following suit with a billet style upper and lower receiver featuring an integrated trigger guard and flared magazine well. The lower receiver design incorporates the same A-DAC design philosophy; i.e. what Radian terms the "Ambidextrous Dual-Action Control." This consists of fully ambidextrous controls, from the dual-lever charging handle to the selector switch, to even the bolt release, all of which is easily accessible from either side you prefer to run the gun from. Similar to the iconic Magpul P-MAG, the lower receiver also replicates the pattern found on the sides of a P-MAG, which creates a cool aesthetic when fitted with said P-MAG style magazines.

In my humble opinion, KWA's have always held onto the title for having the best ambidextrous selector switch design in current production. It's crisp, positive, and best of all it does not require that it be disassembled to access the gearbox. This greatly simplifies the disassembly process, which as an airsoft tech I can appreciate. Here, the MOD 1 has closely replicated the design of the Radian Talon selector switches, with some slight differences. There seems to be some added voodoo, however, as the indexing seems to be even better and more precise than what is found on other KWA models. I would even go so far as to say that this is among the best feeling ambidextrous selector switch out there.

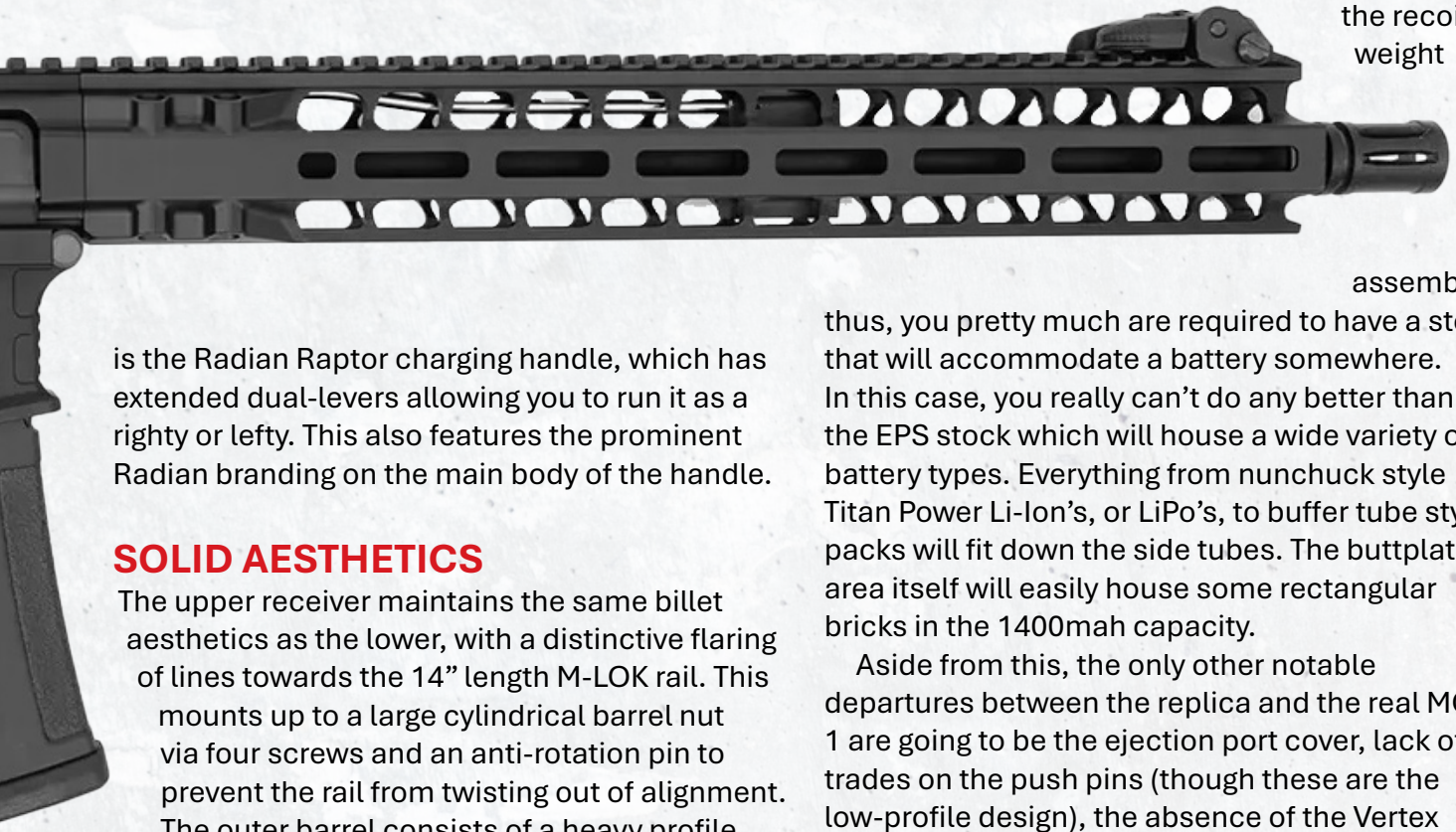


Both the magazine release and the bolt release levers work perfectly from either location. The bolt release serves the function of simply locking the mock bolt plate open to access the hopup chamber. The left side paddle is notably larger than your average AR-15 bolt release, with a similar design to the Geissele Maritime bolt catch. If you're a righty, the right side lever can be actuated with a little effort via the trigger finger, but if one was running the gun as a lefty, it's much easier to just press this home with your thumb as you would on the other side. Curious readers will be happy to note that I have physically verified

"IN MY HUMBLE OPINION, KWA'S HAVE ALWAYS HELD ONTO THE TITLE FOR HAVING THE BEST AMBIDEXTROUS SELECTOR SWITCH DESIGN IN CURRENT PRODUCTION. IT'S CRISP, POSITIVE, AND BEST OF ALL, IT DOES NOT REQUIRE THAT IT BE DISASSEMBLED TO ACCESS THE GEARBOX"

that it is possible to drop in an AEG 2.5/3.0 gearbox and gain the last round cutoff function... with the ambidextrous bolt release levers working without any issue with it, no less!

Rounding out the ambidextrous parts lineup is the Radian Raptor charging handle, which has extended dual-levers allowing you to run it as a righty or lefty. This also features the prominent Radian branding on the main body of the handle.



SOLID AESTHETICS

The upper receiver maintains the same billet aesthetics as the lower, with a distinctive flaring of lines towards the 14" length M-LOK rail. This mounts up to a large cylindrical barrel nut via four screws and an anti-rotation pin to prevent the rail from twisting out of alignment.

The outer barrel consists of a heavy profile diameter with standard 14mm CCW threads, a mock gas block and chrome-plated gas tube. As they come out of the box, you get an anodized orange aluminum flash hider.

The one discrepancy to the visual flair here is that the PTS has a carbine-length gas system installed, whereas the real MOD 1 uses a mid-length setup. Presumably this was done for cost saving measures, though one is reminded the PTS Scout of yesteryear featured a mid-length gas system.

Naturally, being carried under the PTS name this also features the usual bevy of PTS Syndicate furniture; the EPG motor grip, EPS stock and EPBUIS iron sights are all standard equipment here. While the real MOD 1 typically features a Magpul CTR stock, the PTS EPS is a design concession owing to the fact that the buffer tube is taken up entirely by the recoil weight assembly; thus, you pretty much are required to have a stock that will accommodate a battery somewhere. In this case, you really can't do any better than the EPS stock which will house a wide variety of battery types. Everything from nunchuck style Titan Power Li-Ion's, or LiPo's, to buffer tube style packs will fit down the side tubes. The buttplate area itself will easily house some rectangular bricks in the 1400mah capacity.

Aside from this, the only other notable departures between the replica and the real MOD 1 are going to be the ejection port cover, lack of trades on the push pins (though these are the low-profile design), the absence of the Vertex trigger, and the non-fluted buffer tube. All in all though, this is pretty dang close replica of the Radian MOD 1, and also the only one ever done in airsoft. Like any modern KWA, the bodywork is solid, tight fitting and it's well finished throughout.

All of which is also to say... this is a somewhat heavy AEG in the hands. On my scale, I measured 7.6 lbs (3.4 kg) with the magazine. Comparatively, the current flag-bearer of the ERG line, the Ronin T10 is coming in at 6.5 lbs (2.95 kg) with the magazine. I would attribute this weight increase largely to the thicker billet-style receivers, the heavy contour outer barrel, as well as the additional length of the rail and barrel.

In some respects, it is a bit curious that the

"CURIOUS READERS WILL BE HAPPY TO NOTE THAT I HAVE PHYSICALLY VERIFIED THAT IT IS POSSIBLE TO DROP IN AN AEG 2.5/3.0 GEARBOX AND GAIN THE LAST ROUND CUTOFF FUNCTION... WITH THE AMBIDEXTROUS BOLT RELEASE LEVERS WORKING WITHOUT ANY ISSUE WITH IT, NO LESS!"

14.5" length was selected here, when the general trend over the last five or so years has been towards shorter carbines and SBR's. The 14.5" length may feel a little odd to one used to rocking their 10.5" MK18 or the like. Conversely, I could also see the longer length appealing to players who wish to develop their play style and their rifle around an SPR-style concept. If one is familiar, the Radian MOD 1 feels a lot like the Krytac LVOA in handling.

UNDER THE HOOD

Being as this was a new release, I was curious to see if there were any new and notable design changes to the AEG 3.0+ format. Whether you consider it remarkably consistent or not, the Radian remains exactly the same as what is found in other KWA's. Which is to say, under the sleek exterior of the Radian MOD 1, you have a stock Ronin T10 ETU.

Despite the ambidextrous controls, none of these required removal to extract the gearbox, so it's still the same quick five minute job to pull the box and get to the guts of the beast. Here you have KWA's reinforced AEG 3.0+ gearbox shell, which houses their recently released in-house Electronic Trigger Unit. The ETU itself features easy programmability of various functions via the trigger. Pre-cocking, adjustable trigger sensitivity, burst mode, semi-auto only lock, and trigger equalizer are standard features, and as well, the ETU features brushless motor compatibility. Being amongst the beta testers for this ETU in the past, and having spent some time with them in the wild now, I've so far found it to be a pretty good ETU and reliable (knock on wood)... I haven't had any come back in for failures yet.

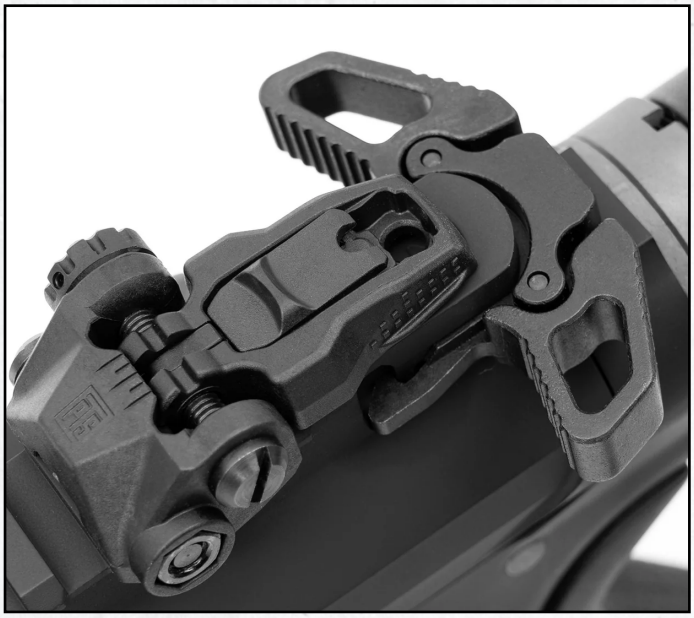
My one and only gripe with the ETU is not with the ETU itself, but with the decision to mill the gearbox shell to increase the available length of pull on the trigger. In my opinion this has been increased to an almost absurdly large degree as few will really want a trigger pull with such long travel. This does not mean you are stuck with a long pull per se, as you can program the firing point so you only have to pull the trigger a minimal distance to fire the gun. But because the trigger itself does not have an overtravel adjustment, you will have a lot of "dead air" behind said firing point. So ideally, outfitting this with an aftermarket trigger that allows you to set the amount of travel you want will result in a cleaner setup in the trigger department.

Some of this could possibly be circumvented another way via the Gate TACTICKER, which is a "real feel" trigger simulation device. I have not had opportunity to check compatibility with the KWA ETU as of yet, so this is just speculation. But the TACTICKER does work perfectly in conjunction with a Gate TITAN II in the KWA AEG 3.0+ gearbox. Unfortunately, the lower receiver has not adopted the larger cutout for the trigger as found on other KWA models, so fitting any aftermarket trigger will require increasing the length of the cutout... again, not hard, just inconvenient.

For those unfamiliar with the ERG system, the recoil impulse itself is generated via a large brass recoil weight reciprocating within the buffer tube on a pair of stiff springs. This has often erroneously been referred to as "electronic" recoil, but is in fact purely mechanically driven by the rearward stroke of the piston. This is a well-established and reliable design... in fact, far more robust and harder kicking than Tokyo Marui's NGRS system! And unlike NGRS, the KWA is 11.1v capable out of the box too. For the US market, these typically will chrono in at 390 - 400 FPS (1.4 - 1.5J).

However, players restricted to sub 350 FPS or lower velocities will likely want to stick with 7.4v's to avoid premature engagement damage of the piston. This can be remedied through technical fixes, so one can enjoy the massive boost in

"THE EPS STOCK (WHICH) WILL HOUSE A WIDE VARIETY OF BATTERY TYPES. EVERYTHING FROM NUNCHUCK STYLE TITAN POWER LI-ION'S, OR LIPO'S, TO BUFFER TUBE STYLE PACKS WILL FIT DOWN THE SIDE TUBES. THE BUTTPLATE AREA ITSELF WILL EASILY HOUSE SOME RECTANGULAR BRICKS IN THE 1400MAH CAPACITY"



trigger response an 11.1v affords. Like anything in airsoft: "there ain't no such thing as a free lunch."

With respect to the rest of the gearbox, you have KWA's usual 9mm caged bearings, steel anti-reversal latch and 18:1 ratio gears. All of these have stood the test of time, and being something of a KWA specialist myself for the past fourteen years of teching, I have very rarely encountered a broken KWA gearset, AR latch or bearing, and I consider them among some of the best OEM parts made.

The motor has been slightly updated to feature a CNC'd end bell, which in theory should help with heat dissipation. This otherwise still appears to be the same 19 TPA format with ferrite magnets; in combination with the gear ratio and an 11.1v LiPo, you should expect around 18 - 19 RPS on average out of it. The ETU has really helped to improve on the trigger response versus pre-ETU models. This can be improved further, notably by changing out the motor, but as it comes stock, it's pretty respectable.

The compression parts consist of the GEN III tappet plate with the integrated polymer air nozzle and O-ring, polymer cylinder head, brass cylinder, billet piston head and polymer piston. These parts are generally fine on their own when the system is run in the ideal velocity envelope of 1.4 - 1.5J, but in my experience they will reveal their shortcomings when you attempt to 'hot rod' the gun, in which case you should consider upgrading the piston and piston head at the very minimum. I would like to see KWA make the transition to ported piston heads and full metal rack pistons at some point.

POINTS TO NOTE

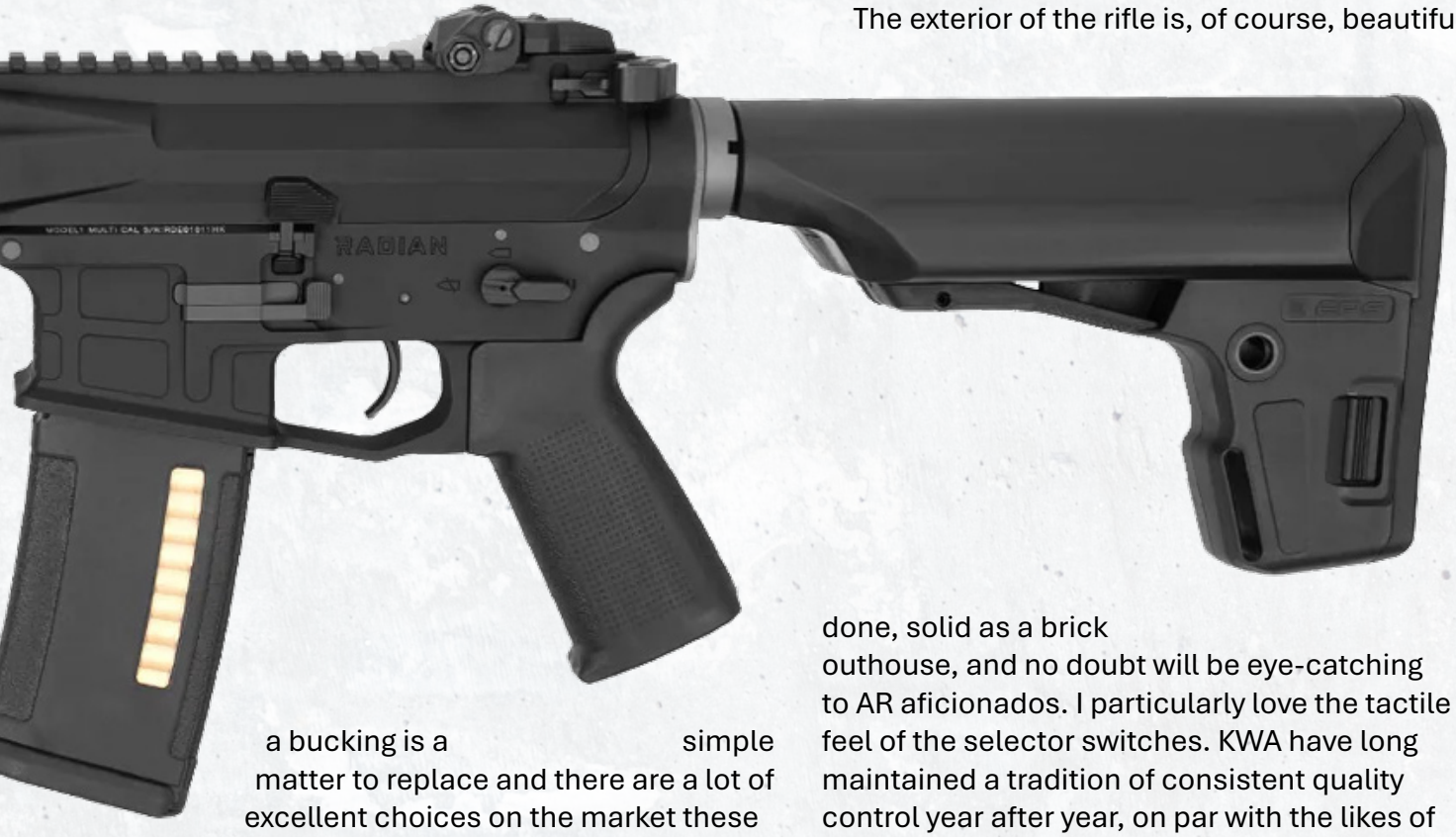
Curiously, this example of the MOD 1 was outfitted with a shorter 6.05 diameter 303mm length barrel. This has been a bit of an interesting trend I've observed with some of the new KWA releases, with both the Q10 and M10 having shorter barrels their outer barrel would otherwise accommodate. Whether this is due to conscious decision or product shortages remains to be seen; that being said, it has no appreciable difference on the outcome as I was still able to turn in a respectable 393 FPS (1.43J) on average with .20g.

The hop up chamber retains the same excellent rotary design. I am not an especially ardent fan of KWA's bucking, but that's also to say I'm not a fan of most any stock bucking. I consider them "placeholders" in lieu of dropping in something better. Reportedly, the KWA bucking has been developed for the warmer heavy humidity climate of their native Taiwan, but in my experience this often struggles in our colder northern climates. I've often seen where it requires a full magazine to be run through the gun to warm up the bucking to where it'll hop properly.

As well, you might struggle to adequately lift heavier BB's; case in point, at maximum adjustment of the hopup wheel, I was able to

"THE ETU ITSELF FEATURES EASY PROGRAMMABILITY OF VARIOUS FUNCTIONS VIA THE TRIGGER. PRE-COCKING, ADJUSTABLE TRIGGER SENSITIVITY, BURST MODE, SEMI-AUTO ONLY LOCK, AND TRIGGER EQUALIZER ARE STANDARD FEATURES, AND AS WELL, THE ETU FEATURES BRUSHLESS MOTOR COMPATIBILITY"

push .30g's at the heaviest, but maybe not quite at the ideal trajectory I would have liked. With .28g's, it did better and I'd say the bucking is really optimized best for .25g to .28g's. Fortunately, a bucking is a simple matter to replace and there are a lot of excellent choices on the market these days. I have been a big fan of the GEN III Tru-Hop and 4UAD Quantum as two notable examples.



All in all, the PTS Radian MOD 1 is a solid choice of an AEG rifle, with some minor quibbles that largely stem from my desires as a tech to maximize everything that passes across the bench. For the average player who doesn't want to crack things open right away, I think the only real detractor might be the extra heft (do you even lift, bro?), but some will not find it appreciable. I would like to see the lineup expanded a bit with the shorter 10.5" version for us SBR nerds, and it would make a lot of sense to also outfit it with the cutoff series gearbox as another option to take full advantage of the ambidextrous controls. Certainly the design of the outer barrel and ease of which one can remove the rail lends itself easily to having a SBR kit sold as an accessory. Time will tell if such a thing becomes available.

The exterior of the rifle is, of course, beautifully done, solid as a brick outhouse, and no doubt will be eye-catching to AR aficionados. I particularly love the tactile feel of the selector switches. KWA have long maintained a tradition of consistent quality control year after year, on par with the likes of Tokyo Marui. You can take KWA parts that were manufactured ten years apart and they'll just plain fit without hassle.

Contrary to internet mythos, KWA's are also in fact quite easy to upgrade, with a lot of options in this department to consider. After conducting my review of this MOD 1, I upgraded it for the new owner with a Ulysses Recoil Kit, Solink SX-1 brushless motor, Gate TITAN II Bluetooth, JVAN CNC 18:1 gears, Angel Custom KRATOS piston, Lonex piston head and cylinder head, stainless steel cylinder, MAXX CNC trigger and air nozzle, and a MAXX CNC M4A rotary hopup chamber, Gen. 3 Tru-Hop and Lambda One barrel...

It's truly a formidable beast now! ***AA***

"ALL IN ALL, THE PTS RADIAN MOD 1 IS A SOLID CHOICE OF AN AEG RIFLE, WITH SOME MINOR QUIBBLES THAT LARGELY STEM FROM MY DESIRES AS A TECH TO MAXIMIZE EVERYTHING THAT PASSES ACROSS THE BENCH. FOR THE AVERAGE PLAYER WHO DOESN'T WANT TO CRACK THINGS OPEN RIGHT AWAY, I THINK THE ONLY REAL DETRACTOR MIGHT BE THE EXTRA HEFT (DO YOU EVEN LIFT, BRO?)"