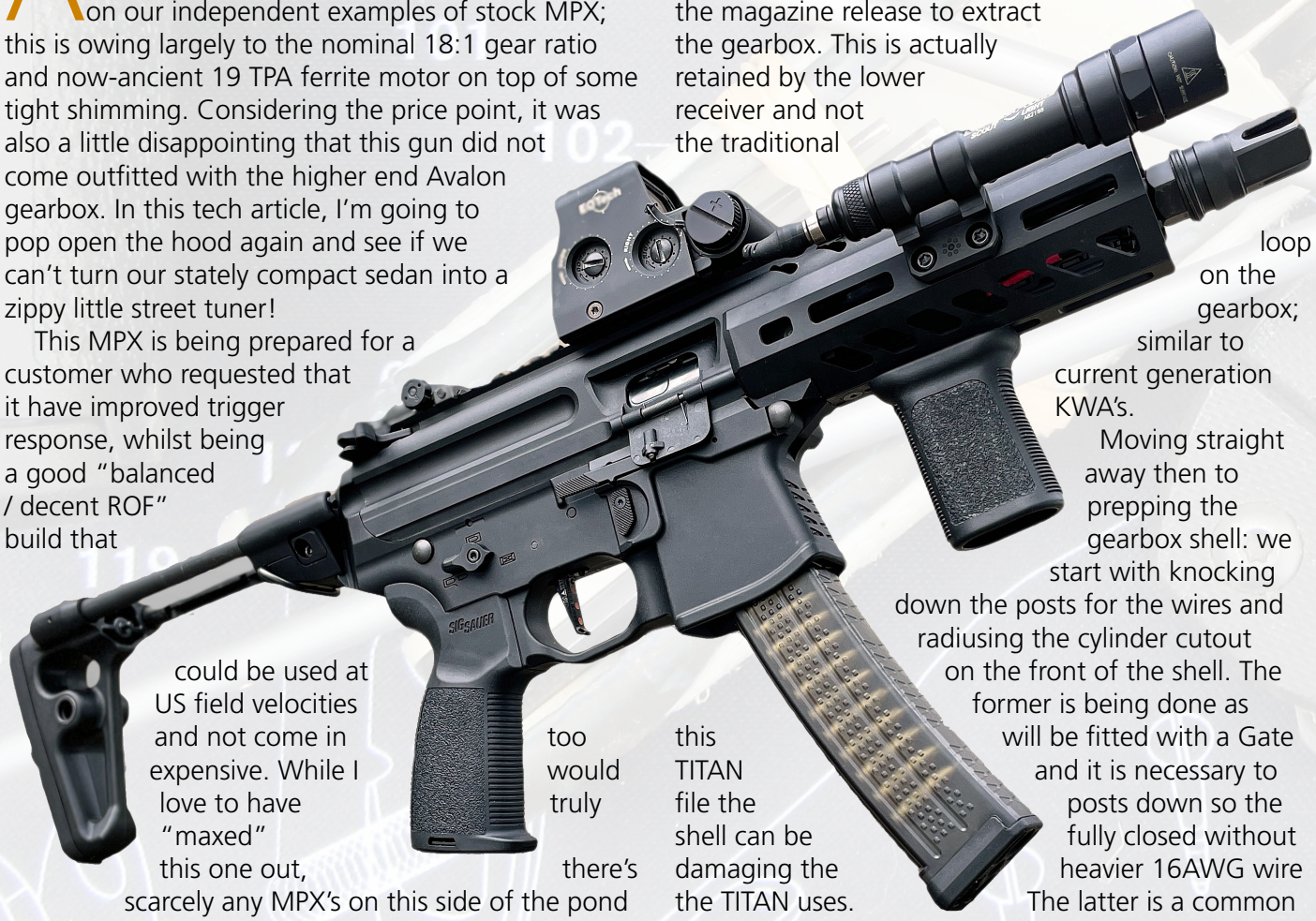
POTENTIAL FULFILLED!

ISSUE 134 OF AIRSOFT ACTION MAGAZINE SAW US TAKE AN EARLY PEAK AT THE HOT NEW RELEASE FROM VFC: THE MUCH SOUGHT AFTER SIG MPX. WHILE THE RECEPTION TO THE NEW MPX HAS BEEN LARGELY ON THE POSITIVE SIDE, THERE WERE A FEW THINGS WE WISHED TO SEE WORK TO THEIR MAXIMUM POTENTIAL, SO DAN TAKES UP THE CHALLENGE!

As previously reported, both John and I were left a little unimpressed with the anemic response on our independent examples of stock MPX; this is owing largely to the nominal 18:1 gear ratio and now-ancient 19 TPA ferrite motor on top of some tight shimming. Considering the price point, it was also a little disappointing that this gun did not come outfitted with the higher end Avalon gearbox. In this tech article, I'm going to pop open the hood again and see if we can't turn our stately compact sedan into a zippy little street tuner!

This MPX is being prepared for a customer who requested that it have improved trigger response, whilst being a good "balanced / decent ROF" build that could be used at US field velocities and not come in too expensive. While I would love to have truly "maxed" this one out, there's scarcely any MPX's on this side of the pond and won't be for some months yet, so I have to work within the parameters of what's passed onto me for upgrade.



I won't needlessly dig into disassembly again as that was previously covered in Issue 134. However, one interesting anecdote worth passing on is I've since learned that it is not necessary to remove the magazine release to extract the gearbox. This is actually retained by the lower receiver and not the traditional loop on the gearbox; similar to current generation KWA's.

Moving straight away then to prepping the gearbox shell: we start with knocking down the posts for the wires and radiusing the cylinder cutout on the front of the shell. The former is being done as this TITAN will be fitted with a Gate file the shell and it is necessary to can be posts down so the damaging the fully closed without the TITAN uses. heavier 16AWG wire stress reduction The latter is a common technique used to prevent cracks from forming in the corners of square cut windows due to impact from the piston coming home.

GETTING IT READY

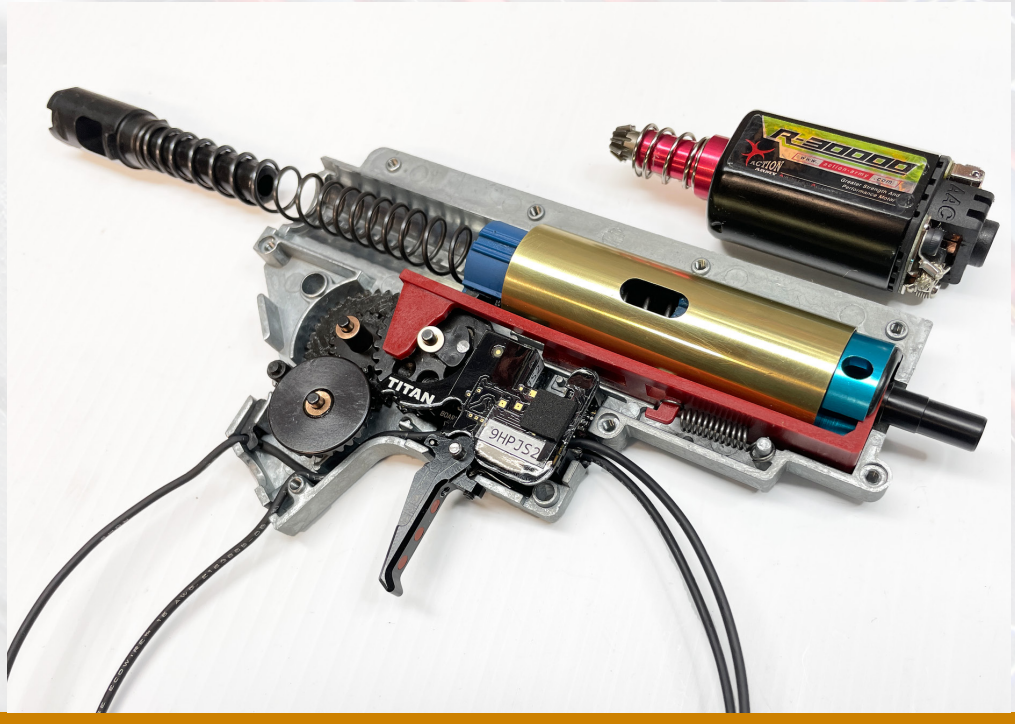
Before this prep work kicked off though, I happened to notice one of the bearings under the spur gear side was looking a bit warped. I believe this was due to the spur side being shimmed too tight, which put excess lateral pressure on the bearings. Rather than risk the whole foundation to likely failure, I opted to knock out the bearings and install a set of 8mm FLT bushings. These are some of the very best bushings on the market and conceivably will outlast even the gears. FLT's fit very tight in the VFC shell and consequently required the assistance of a Modify bushing installation tool to seat them properly. One can do it 'old school' and pound them in with a punch, but without properly supporting the backside of the shell fully, you risk bending it out of flat when pounding in tight fitting bushings.

Next up is a quality motor: in this case, that would be the excellent Action Army R30000, which is a 16 TPA Neodymium magnet motor. This motor has a more traditional body design as opposed to CNC construction on the comparable ASG Infinity series, which can be tight in some motor grips. I already had some reservations about available space in the MPX's motor grip (which held true, as I later discovered), but as I quite liked the feel of this grip, I was determined to see if I could make it work.

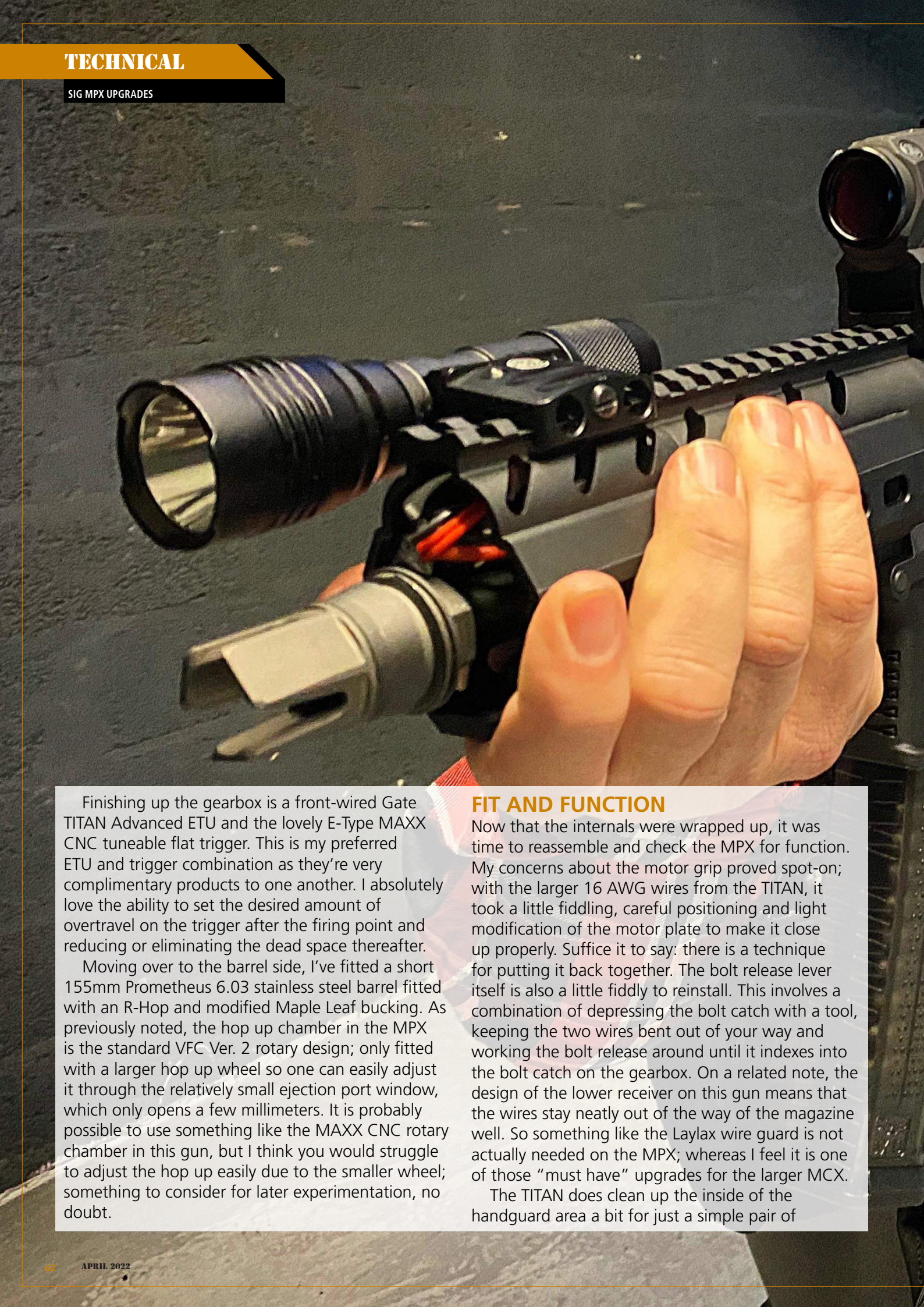
I've upgraded the gears in this build with a set of SHS 16:1's (which are actually a true ratio of 17.28:1). These have been short-stroked three teeth off the pickup side. In conjunction with a trimmed Guarder SP130 spring, this will bring the gun right into US field velocities while avoiding any possible issues of premature engagement of the piston due to the higher cyclic rate and a steady diet of 11.1v LiPo's.

The stock cylinder was replaced for a ½ ported style, which is more appropriate for the tiny barrel length as fitted in this AEG. An SHS piston with the rack AOE corrected and epoxied was fitted next, with the stock ported aluminum piston head retained. As reported in the previous article, despite being new, the cylinder head on this example already had evidence of hairline fracturing stemming from the air nozzle downward to the 6 o'clock position. This is an endemic problem with VFC cylinder heads, so it was replaced with a Lonex double o-ring aluminum cylinder head. On the backside was affixed a 70D AirPad which assists with both AOE correction and further shock reduction.

I've retained the stock tappet plate and the excellent VFC O-ring air nozzle. VFC's tappets have fortunately swung back into reliable territory again, and this is usually the best one to stick with if you're planning on keeping the stock nozzle and hop up chamber and want to avoid dancing around nozzle feeding and compression issues. The front face of the tappet was lightly filed down to seat the nozzle slightly deeper and improve air seal. The tappet spring was also trimmed 2 coils and re-looped. By shortening the tappet spring you can increase the tension of the spring on the tappet plate and also help reduce instances of "midcap syndrome" whereby the stack pressure of a fully loaded midcap magazine forces the nozzle out of alignment, leading to a loss of FPS and poor range and accuracy.



"MY CONCERNS ABOUT THE MOTOR GRIP PROVED SPOT-ON; WITH THE LARGER 16 AWG WIRES FROM THE TITAN, IT TOOK A LITTLE FIDDLING, CAREFUL POSITIONING AND LIGHT MODIFICATION OF THE MOTOR PLATE TO MAKE IT CLOSE UP PROPERLY."



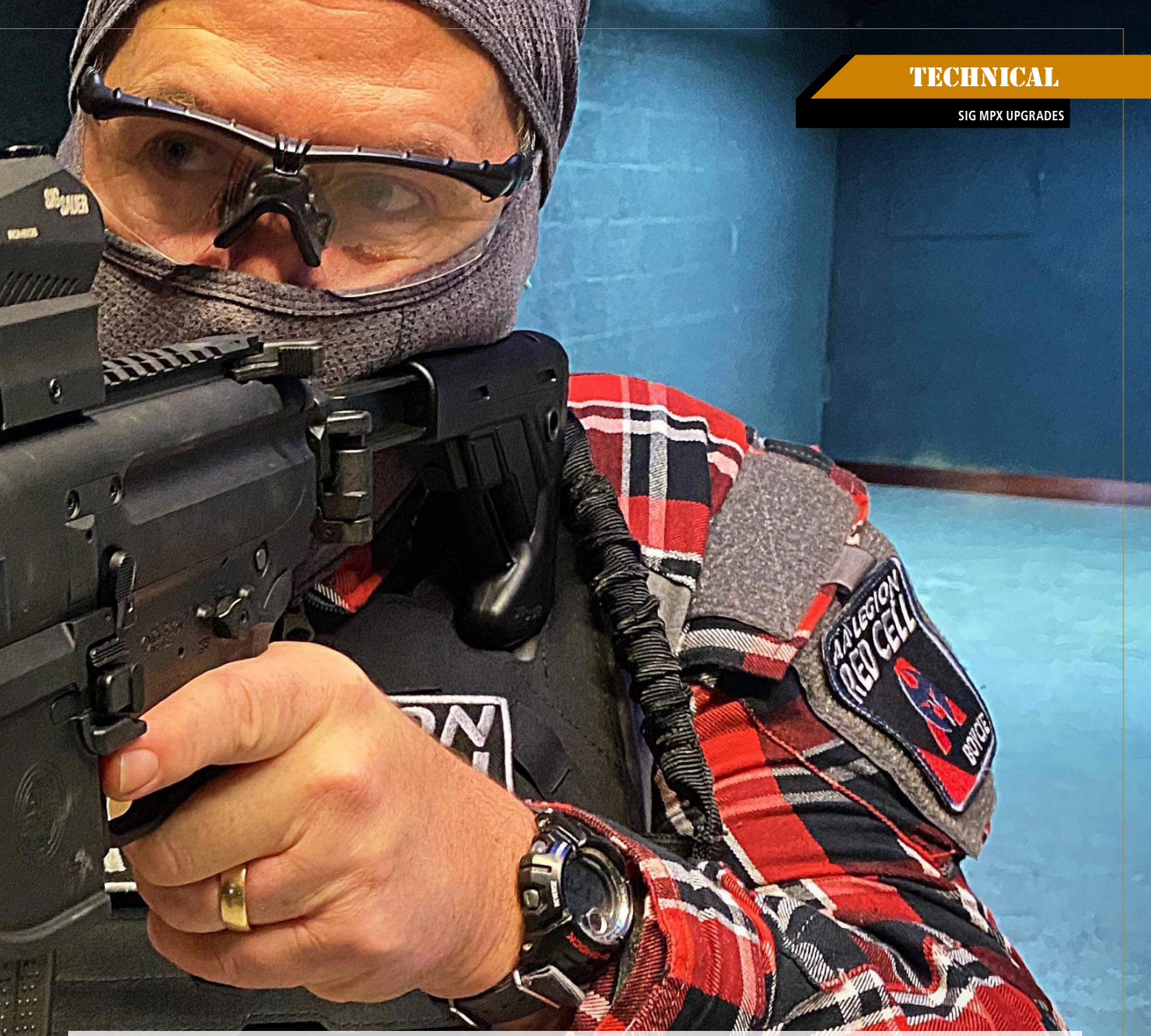
Finishing up the gearbox is a front-wired Gate TITAN Advanced ETU and the lovely E-Type MAXX CNC tuneable flat trigger. This is my preferred ETU and trigger combination as they're very complimentary products to one another. I absolutely love the ability to set the desired amount of overtravel on the trigger after the firing point and reducing or eliminating the dead space thereafter.

Moving over to the barrel side, I've fitted a short 155mm Prometheus 6.03 stainless steel barrel fitted with an R-Hop and modified Maple Leaf bucking. As previously noted, the hop up chamber in the MPX is the standard VFC Ver. 2 rotary design; only fitted with a larger hop up wheel so one can easily adjust it through the relatively small ejection port window, which only opens a few millimeters. It is probably possible to use something like the MAXX CNC rotary chamber in this gun, but I think you would struggle to adjust the hop up easily due to the smaller wheel; something to consider for later experimentation, no doubt.

FIT AND FUNCTION

Now that the internals were wrapped up, it was time to reassemble and check the MPX for function. My concerns about the motor grip proved spot-on; with the larger 16 AWG wires from the TITAN, it took a little fiddling, careful positioning and light modification of the motor plate to make it close up properly. Suffice it to say: there is a technique for putting it back together. The bolt release lever itself is also a little fiddly to reinstall. This involves a combination of depressing the bolt catch with a tool, keeping the two wires bent out of your way and working the bolt release around until it indexes into the bolt catch on the gearbox. On a related note, the design of the lower receiver on this gun means that the wires stay neatly out of the way of the magazine well. So something like the Laylax wire guard is not actually needed on the MPX; whereas I feel it is one of those "must have" upgrades for the larger MCX.

The TITAN does clean up the inside of the handguard area a bit for just a simple pair of



quick-connects and a Deans plug. A 21 x 16x 116mm 11.1v 1450mah buffer tube LiPo fits in the surprisingly spacious area above the barrel. I have no doubts that dual-panel or tri-panel LiPo's would similarly drop right in too.

Taking the MPX to the range for testing shows the upgrades made a dramatic felt improvement in responsiveness on this gun. Gone was the previous sedate and sluggish rate of fire, then clocking in at 18 RPS with an 11.1v, now exchanged for a crispy 25 RPS. Also pleasing is the stock magazine is capable of keeping up with the higher rate of fire as well. Despite the short barrel, with the R-Hop and .30g's, this gun is capable of easily slugging it out at 250+' with quite excellent accuracy to boot. I've tuned the FPS output to sit at 370 FPS with .20g's, which accounts for the joule creep experienced with the short barrel. With a .28g we're sitting right at 335 FPS / 1.46J, just a hair under field limits on my part of the USA.

On the external side, she's been dressed up with the original retractable stock from the VFC MCX, which I feel looks more appropriate on this little SMG than the stock it ships with. A real SIG 3-prong flash hider, modified for 14mm CCW threads is also fitted and looks the part better than the ol' A2 birdcage. An EOTech XPS2 and some Surefire, Modlite and BCM goodness round it out.

Having all of it now, the only thing we are truly lacking for is extra magazines! As of early 2022, there is still a distinct lack of spare magazines available for this gun. So as much fun and as effective and competitive a build it is, it still regrettably remains somewhat of a range toy until that void is filled. That being said, when those inevitably start filtering in, this little beast will be ready to hit the field with the best of them!! AA