Modell Ost

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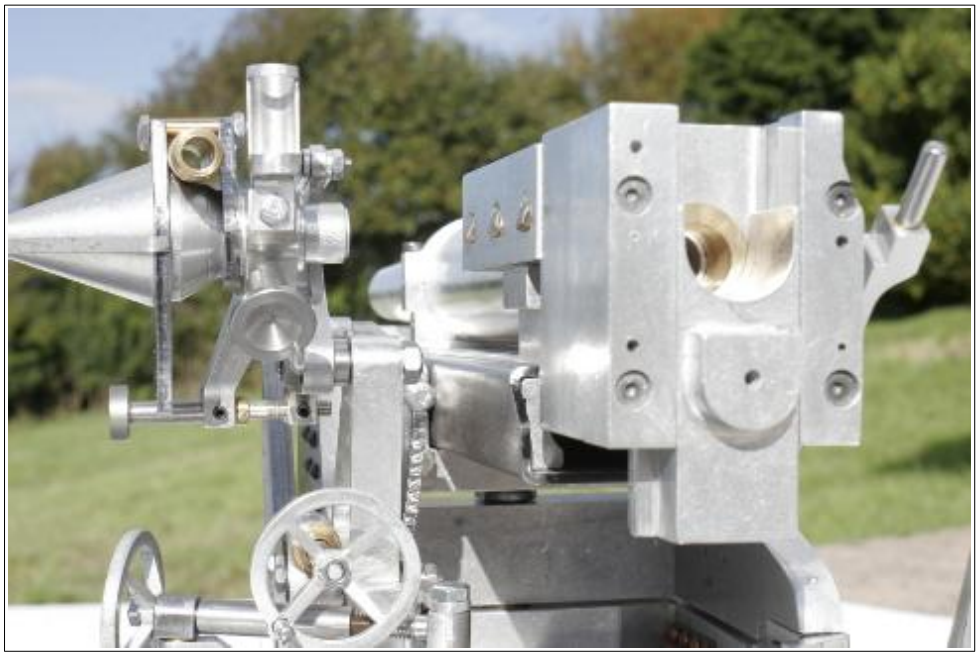
BUILD NOTE

Armortek Ordnance QF 25-Pounder in 1/6th Scale, from an Armortek Kompact Kit - 04/11/15

The 25 Pdr gun was one of the British Army's key artillery pieces being able to serve as both in howitzer - high-angle, indirect targeting - and direct fire roles. From 1943, with the development of a new 'incremental' charge, the weapon could operate in an anti-tank role as well. Though designed before WWII its versatility was such that it lasted in front line service with many Commonwealth and other forces until the mid 80s. Ammunition is still being made for the 25 Pdr apparently in Pakistan, and while the Irish Defence Forces retired their pieces in 2009, a ceremonial troop is maintained over there for official occasions. The gun proper also found its way into the Sexton self-propelled gun, built on the Canadian-manufactured M3 Lee and M4 Sherman chassis.

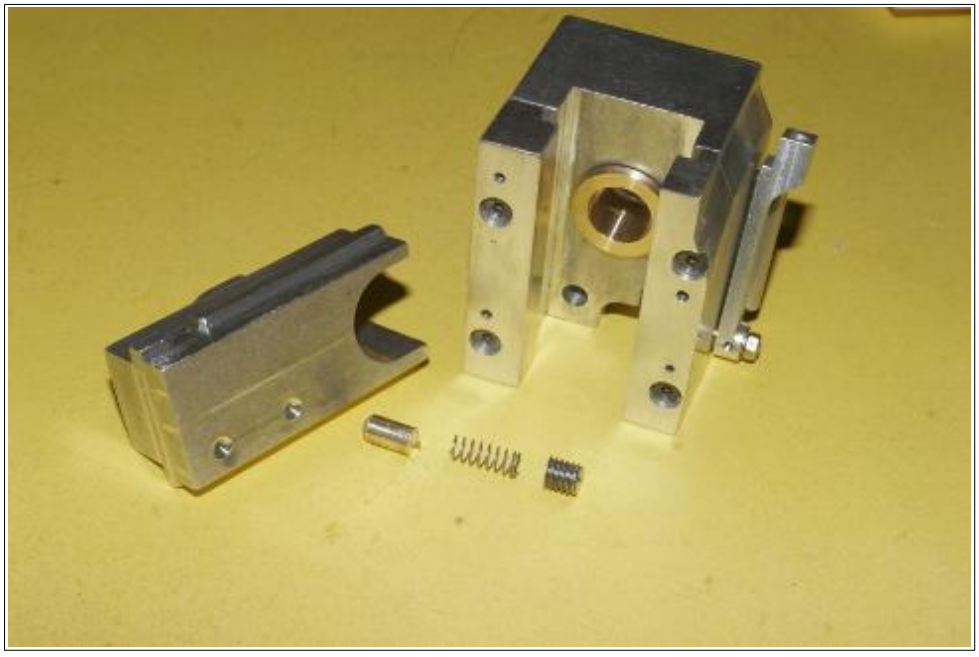
Image: Rodney Rushton

More of some comments as to 'how not to do it', but hopefully of some help to other builders. I started assembly of my 25 Pdr with the breech, as it seemed a smallish assembly to work upon. The two cheek pieces are secured by countersunk screws. You can countersink these about 3 or 4mm deeper to give the screws more purchase in the block proper. I spent some time scraping the ways on both the cheeks and the breech, so that the breech block moves freely.



The outside of the cheek pieces are also scraped down level with the breech, and all the holes and join lines will be filled and sanded down prior to final paint, so that the whole unit looks as though it is one piece. I managed to shear the thread off the end of the cam lever unit that raises the breech block, so had to drill out the shaft from the back, and insert a 6 BA stud so that I could tighten down the operating lever. Added later, is a stop plate underneath the breech (where you can't see it) to prevent the lever from dropping too far down and lettng the breech block travel beyond the detent. A bit neater than just popping in a cheeshead screw onto the outside of the breech methinks...

I also added an M2 grubscrew bearing on a flat filed on the cam lever shaft, plus a washer to hold the lever clear of the surface of the side of the breech, so it would not mark the paint when it was operated later. Of course in the final stages of fettling the unit, I managed to drop it and this tapped one of the cheek pieces out of alignment - hence the four little holes in the back of the breech cheeks, which have loctited-in 2mm studs inserted, just in case I am hamifisted enough to have it happen to me again.



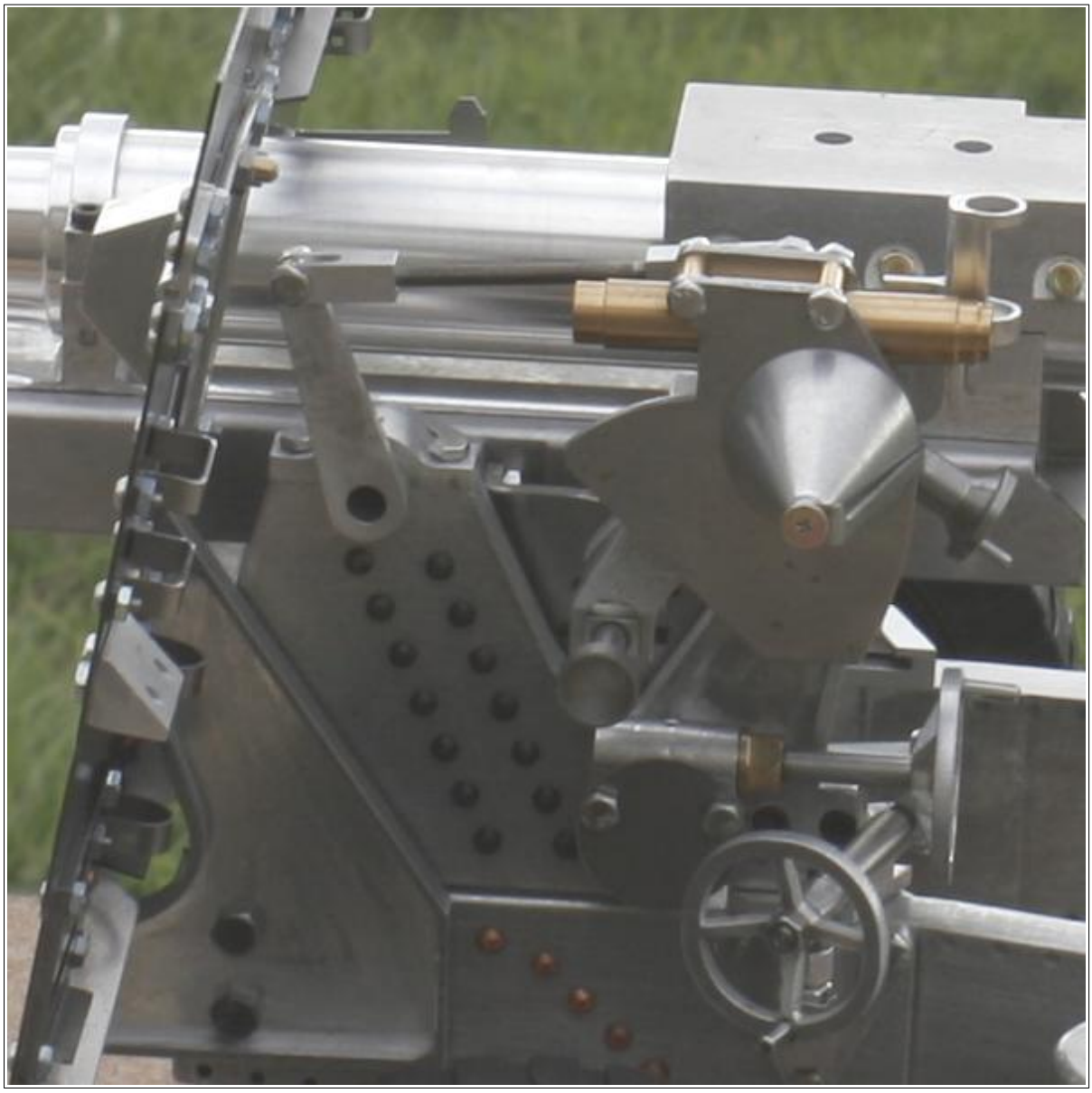
Detent for breech, components from left. Armortek falling breech, with dimples for detent. Detent plunger, made from brass bar turned to 5mm OD and then domed at one end. Cut down biro spring. Screwed adjuster plug - actually an offcut from an M6 bolt with a slot cut in the rear with a junior hacksaw for screwdriver. Visible behind in the breech block is the 5mm hole drilled through from the rear of the breech to take the assembly. Only the rear 10mm is tapped M6, so as to leave the bore smooth for the detent plunger and spring. To get the correct positioning of the dimples in the falling breech, I spotted the raised and lowered positions through from the rear of the breech with a 5mm transfer punch inserted in the detent bore. After centre-punching, a 2.4mm drill was used to create the pilot shallow dimple in the falling breech, followed with a 6mm drill to enlarge the recess so that the detent would ride in and out easily. Adjustment for pressure to allow reliable retention of the falling breech, yet still allow easy operation of the lever, is achieved by screwing the adjuster plug in or out from the rear. There is no need to use loctite to secure the plug as the spring tension will keep it in position.

Image: Rodney Rushton

Breech on the real thing. The colour is a moot point. Some guns appear to have been left bright metal, and on others the standard green was applied to everything except the falling block. This shot also shows how the over-centre levers either side of the trail are used to secure the gun's ground plate for transit. Of which, more anon.

Gun sight now completed. Could not resist making the side to side tilt mechanism for the sight operative, so filed, drilled and tapped new brass block to take handwheel screw, then added collar with M2 grub screw to allow side to side movement. Pivot pin to secure two arms of sight mechanism replaced with screw to allow disassembly later for painting. Brass sight bored out from front and back to allow sighting through, and possible later fitment of plastic lenses and cross hairs.

Sighting cone is secured into casting using handwheel. Small brass plug at bottom of picture is wedge that is locked in place by turning up handwheel. Ranging cone and sight can therefore be set exactly to angle required when barrel, breech and recoil slide are finally assembled. Also shown are turned brass spacers that fit around the M2.5 sight clamping screws, which provide a flat surface to clamp up against so as to stop any tendancy of the smaller (RH) gun sight plate to pivot around the brass sight tube when tightening everything up. Grooves in the sight and also the top recess in the ranging cone assembly need to be deepened to suit.



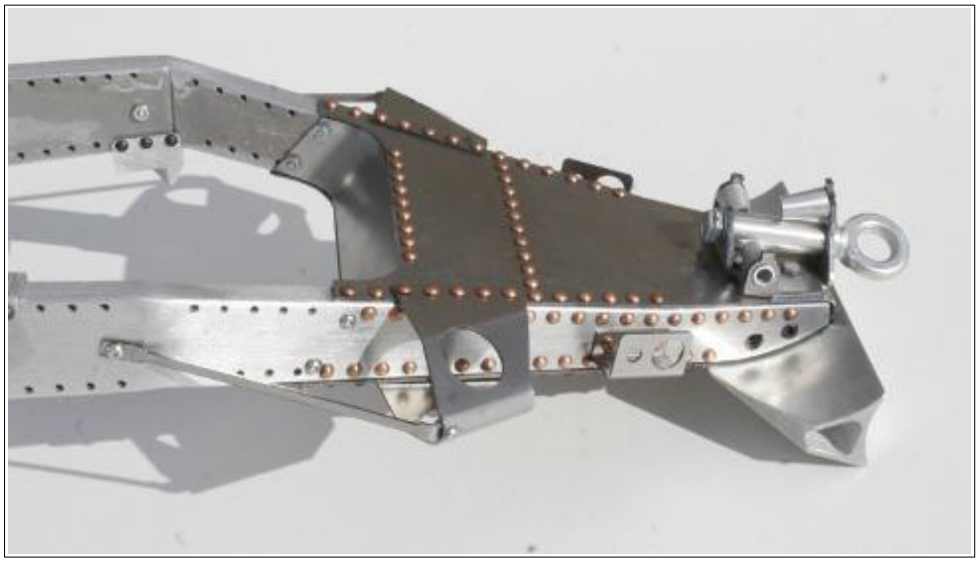
Sight now mounted. Complete assembly is hung on thje pivot pin, which goes into the LH support plate. Rod with clevis connects to crank fixed to LH gun trunnion, to allow sight to move in concert with gun as barrell is elevated. Just visible are the oil holes in the trunnion bearing caps, and similar for the elevation screw worm gear box. The gearbox incidentally is dowelled to the frame so it can't get out of mesh. Each bearing cap for the trunnions is marked, so they can go back the same way and on the same trunnion.

Compare this to a view of the full-size gun sight, below -

Image: Rodney Rushton

As I had promised that I would have something more or less presentable for Tankmod, I managed to get a round tuit, albeit one of the smaller variety...

The gun is unfortunately incomplete, but it was only 10:30 on the Friday before Tankmod that the wheels went on. The slew gear still needs a bit of work - another 1mm sliced off the left shoe mount should do it, I think... - but that's a job for next week.



Here's the the rear of the trail, assembled very much as per the kit's instructions, apart from the split pin in the towing eye retaining nut. Which, I freely admit, is something of a touch of vanity... The pin now pivots, so this 1/6th version will at least have no problems in following its limber and tractor over rough ground without lifting a wheel.

Image: Rodney Rushton

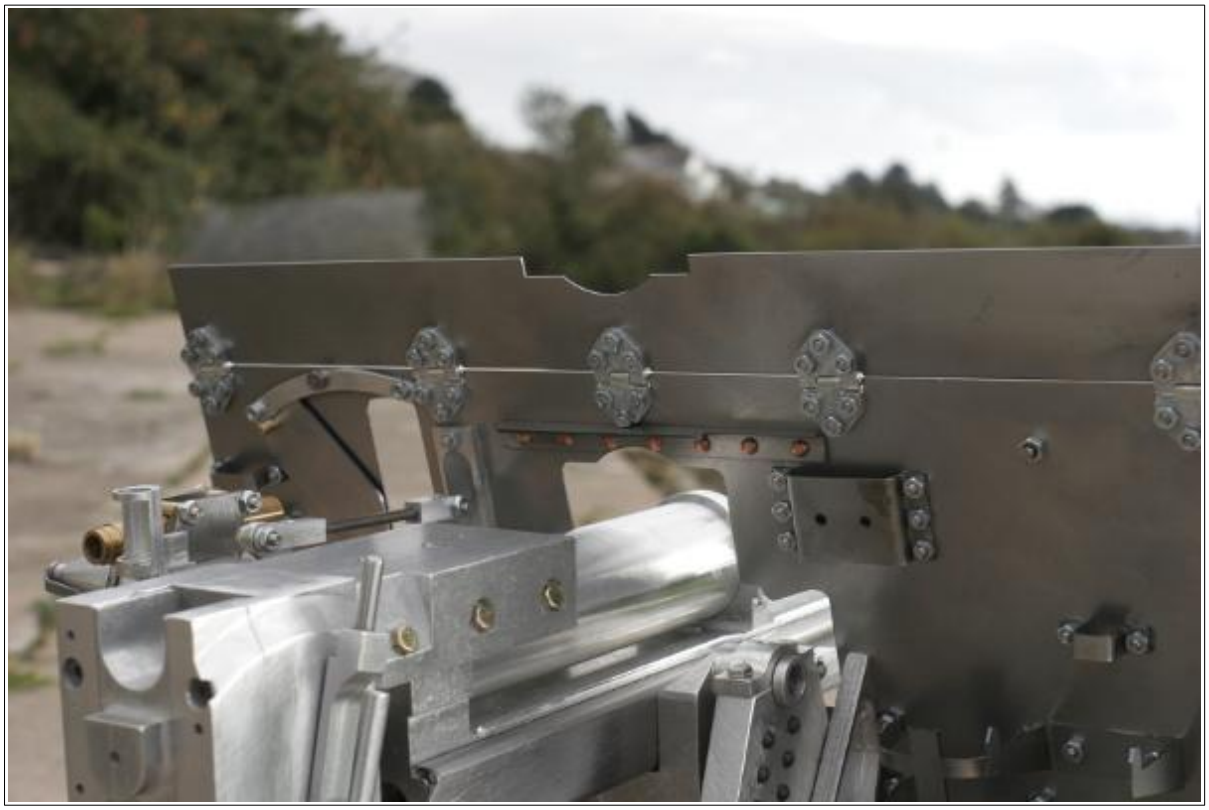
On the 1/1 scale item, the towing eye is retained by a whopping big castellated ring - its not precisely a nut. The Australians apparently welded all their 25 Pdr trails, whilst the British and Canadian examples stuck to the traditional riveted construction.

I have to admit that this the first time I have photographed something this big - most of my work to date has been in the 'braille scales' of 1/76th, 1/43rd with a dabble or two in 1/35th. And no, your eyes deceive you not. The 25 Pdr IS sitting level. It is only the hedge which is running downhill at 10 degrees (that reminds me: I really must get the hedgetrimmer on the tractor and give the blackthorn a haircut...).

What you can't see, hidden behind the two shield supports, are the 2mm locating dowels that prevent the trail side sections from ever getting out of alignment if the carriage gets an involuntary knock (or perish the thought, is ever dropped..!). And yes, the two side plates supporting the trunnions are similarly dowelled.

Well, at this point it is a week on from Tankmod 2015 (sort of), and whilst the pressure is off, and I am beavering away to finish the field piece. Barring some rivets on the outside of the trail, everything according to the kit instructions is now done - except for the various equipment bags, tools and wooden cases. All of which can only be fitted after painting.

The front shield is now on, and worth a closer look as with the drop down hinged top section, things are not as straightforward as they seem.



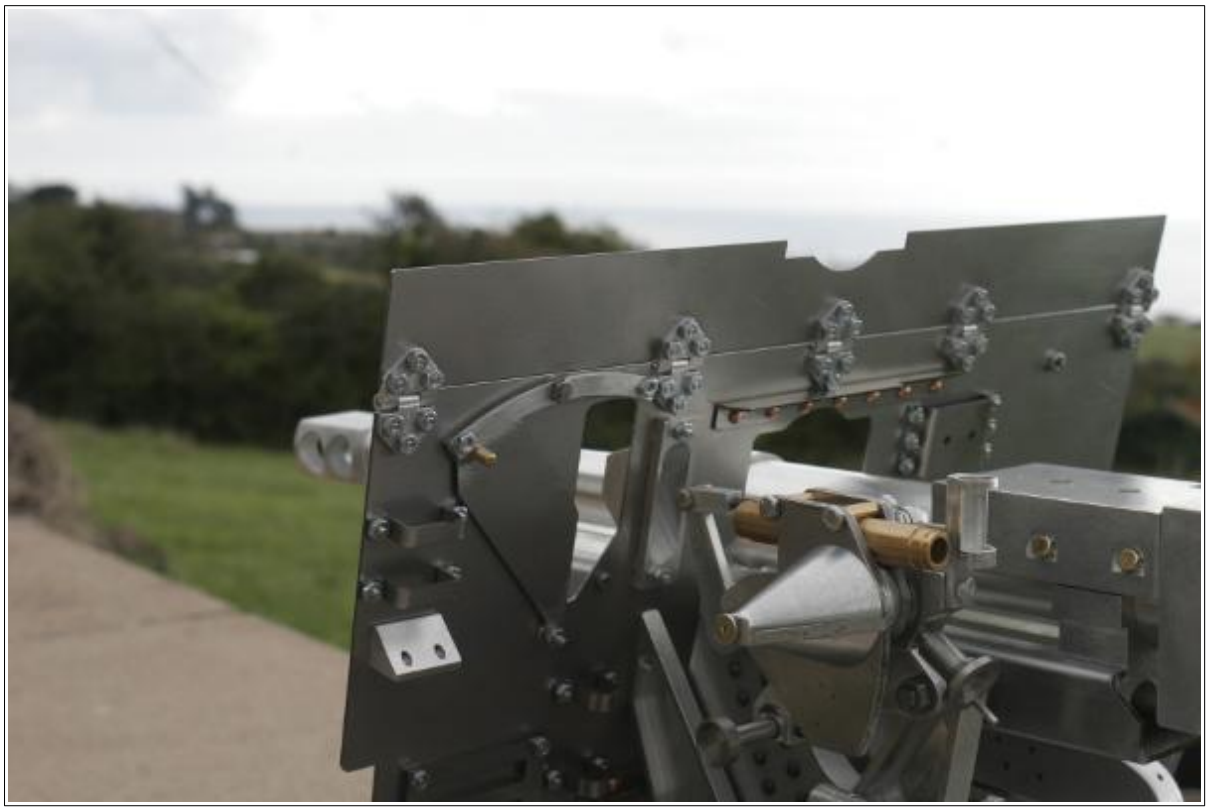
The hinges needed a quick ream through with a drill to clear them for the pins, and then were loosely assembled onto the drop down section and the main shield plate. Only then were all the button headed bolts tightened hard up, to allow the hinges to 'find their own centre' as it were. I still needed to draw a couple of the holes with the needle file, which is where the time goes on building these things, if you want to get it 'just so'.

Image: Rodney Rushton

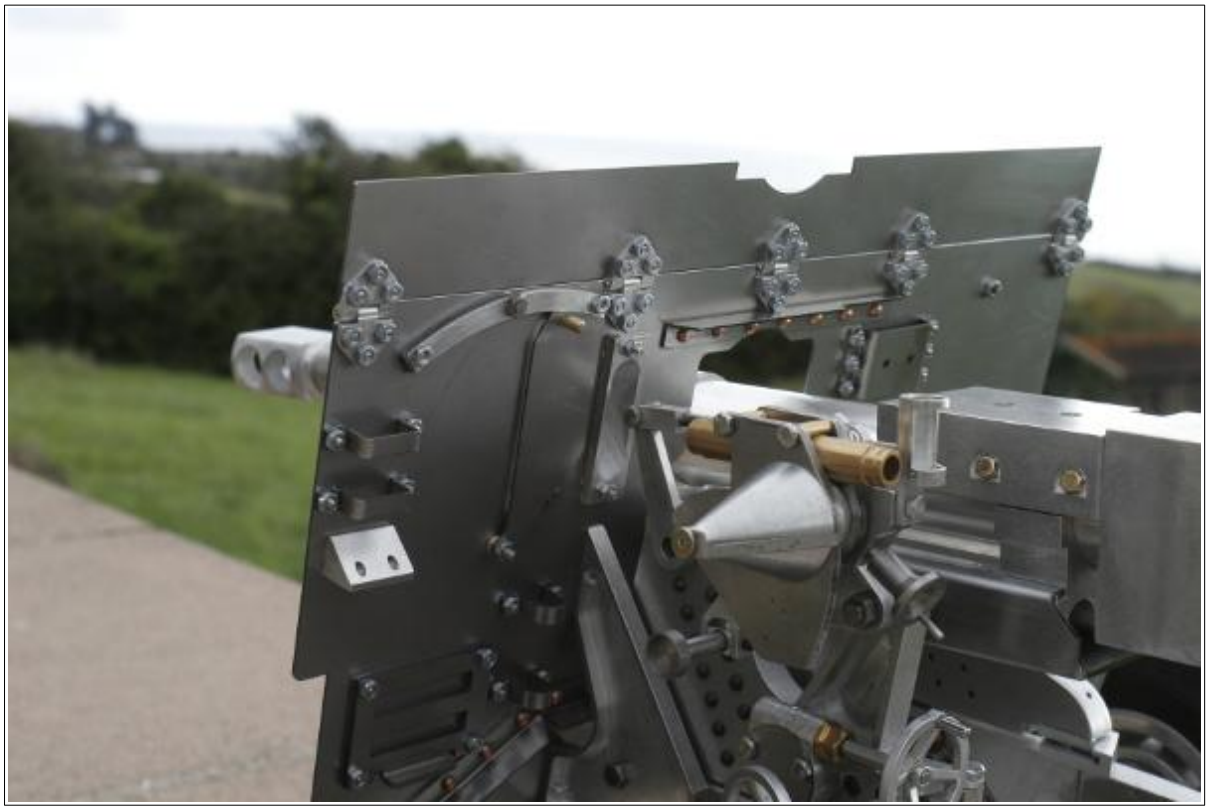
The real 25 Pdr has an elaborate system of catches and stays to keep the hinged top

plate folded down, and up. Luckily, there seems to be enough 'spring' in the - relatively - thin shield plate on the model, to create a 'friction hinge' effect so as to keep the top plate up or down. Not sure whether those red reflectors are a standard 1940s fitting....

I was however pleased to find that when I traversed the gun fully, nothing touched either side, though at the extreme elevation, the barrel clamp just kisses the top of the shield opening. Perhaps I'll take a file to it when it all has to come off again for painting....



Sight guard plate open...



...and closed.

I have deviated from the instructions and added a third curved guide layer for the sight shield segment to move in, to keep this part clear of the inside of the shield after it has been painted. The topmost button head bolt on the curved guide was replaced with a countersunk screw, as I found that otherwise the head would prevent the top shield plate from sitting fully horizontal.

Image: Rodney Rushton

The full sized shield has a nice locking knob, that I looks as though it can be screwed down tight to stop the moving plate from jumping closed during recoil after firing. Mine is just a stub of brass with a sholder turned on it so that it can rivetted up to the moving shield. It may not satisfy the rivet-counters, but at least you can still flip the plate open and closed with a touch of the little finger.

As the laser cutting process can produce some quite sharp edges, so I took the precaution of just touching the shield top edge with a warding file, both for safety and also to provide a more rounded surface for the eventual paint finish.

*T*he gun is now sitting on the ground plate - or 'firing and targeting platform' - as the official nomenclature would have it.

This platform is normally either carried on the limber, or slung underneath the 25 Pdr. itself. It is dropped to the ground on reaching the firning position, and the gun run on over it. The plate and the stays together effectively prevent the gun from dancing around or sinking into soft ground, on the recoil.

Around the spokes, just behind the periphery of the inner ring hoop, are a series of hooks. Two of these - diametrically opposite each other - are used to secure a pair of links, chains and turnbuckles, which in turn are tensioned by the two over-centre levers on each side of the trail. So far, I've left off adding these details, but have drilled each spoke M2.5 to take a single ecuring bolt (yes, I know there should be two...rivets, that is) which could be used for some hooks - all 12 of them... If you are contemplating something similar, bear in mind that the hooks will have to be steel or brass castings at best, as resin or cast white metal just won't be up to the clamping forces involved.

For completeness' sake, I thought I would add some notes of how I put the targeting and firing plate together. I started by assembling the inner and outer 'steps' of the ring first, working from the opposite side to the fishplated joints. For the larger, outer, ring, I got myself into a tizzy where somehow, the only way forward was to make a new, smaller, fishplate. Care needs to be taken that all the bent up tabs securing the inner, upper, ring are all at 90 degrees before starting upon the riveting. And, if you need to draw any holes over to get the rivets in, do it only in the plate next to the head - otherwise when you come to peen over the head, you will find at best that it is not as big as its neighbours, or

at worst, tries its best to spread into the 'ole. not on top of it.

After this, the hub and spokes are a piece of cake. Sort of. I loosely riveted four spokes to the centre, and then went around and set one rivet in to the outer ring. Again still loose at this stage. Enough to stop the rivet dropping out, but not tight enough to stop the parts moving around. Only then is the second outer rivet put in and rivetted up. Proceed to doing the same with the spoke opposite, and then do the other two of the 'cross'. Now, the centre plate should have located itself, so those four rivets can now be takled. From then just work around filling in the spokes, opposite pairs at a time. "Seemples." (If you are a Meerkat that is....)

'Tis done. Finally. The muzzle brake is still just a push fit, in case I decide to finish the model in pre 1942 specification. I've shown this to a couple of people already, and they have suggested that it would be a shame to hide the level of finish and detailing under a coat of paint, so I might just leave it as it is. For those who like statistics, this particular 25 Pdr build has taken 110 hours, with perhaps another 25 hours to go once paint and transfers are factored in.