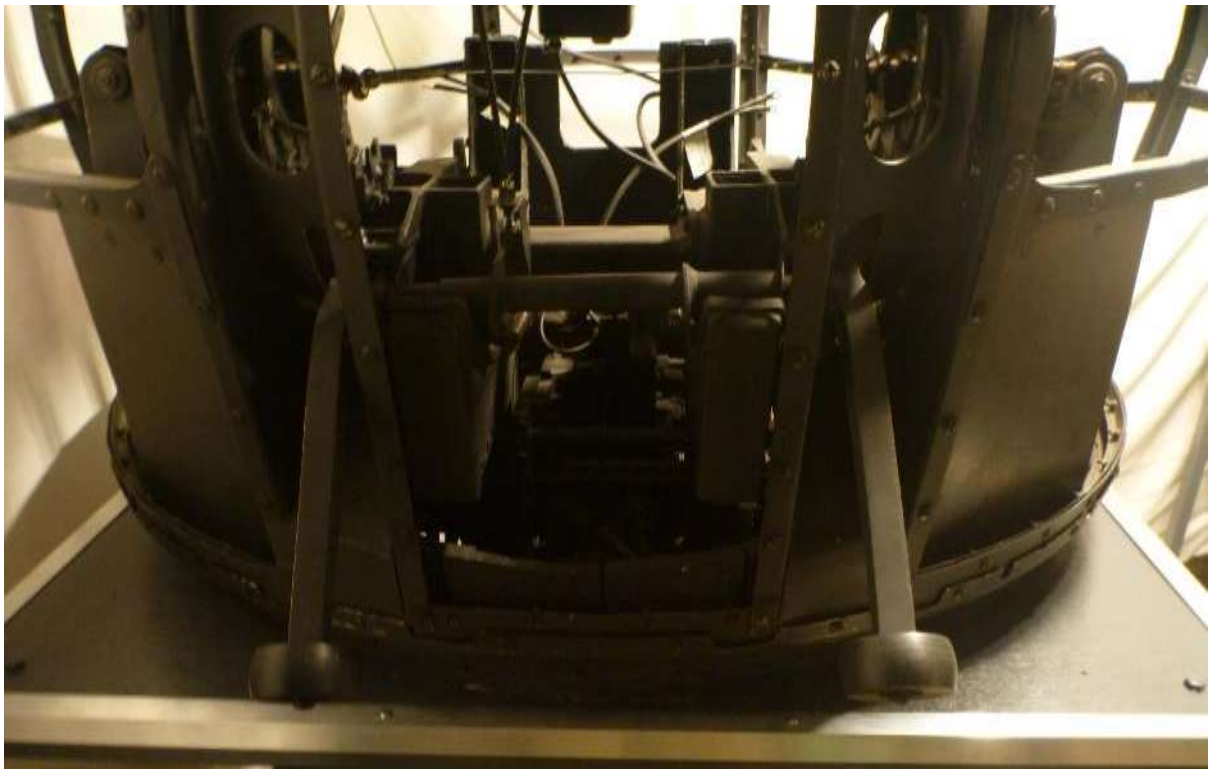
FN-150 Turret update January 2020

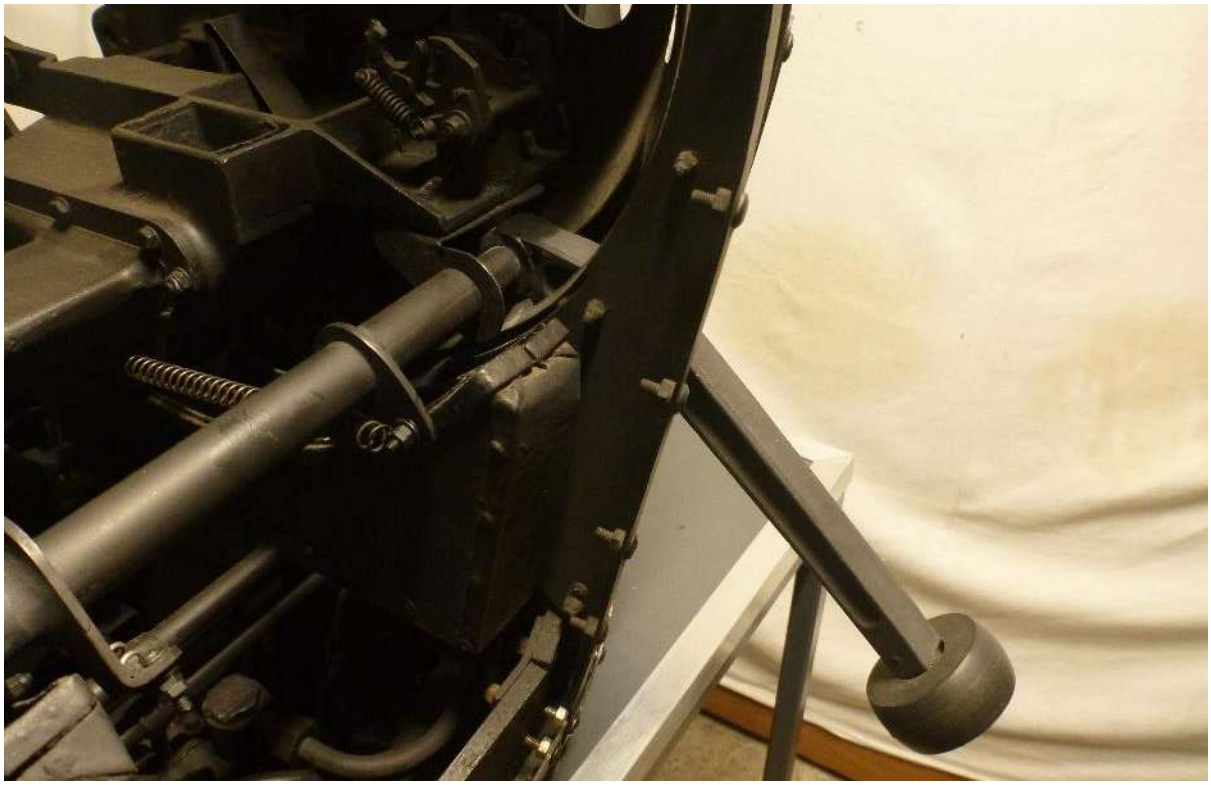
The priority for December and January was to complete the Travel Interrupter System. What the Travel Interrupter does is prevent the guns from striking the airframe when they are traversed at low angles of elevation. In essence when the guns are traversed, the rollers move around a cam that is fitted to the fuselage. As the rollers rise, they elevate the guns through a Bowden cable system. This system shouldn't be confused with the Gun Fire Interrupter, which is completely independent - and electrical.

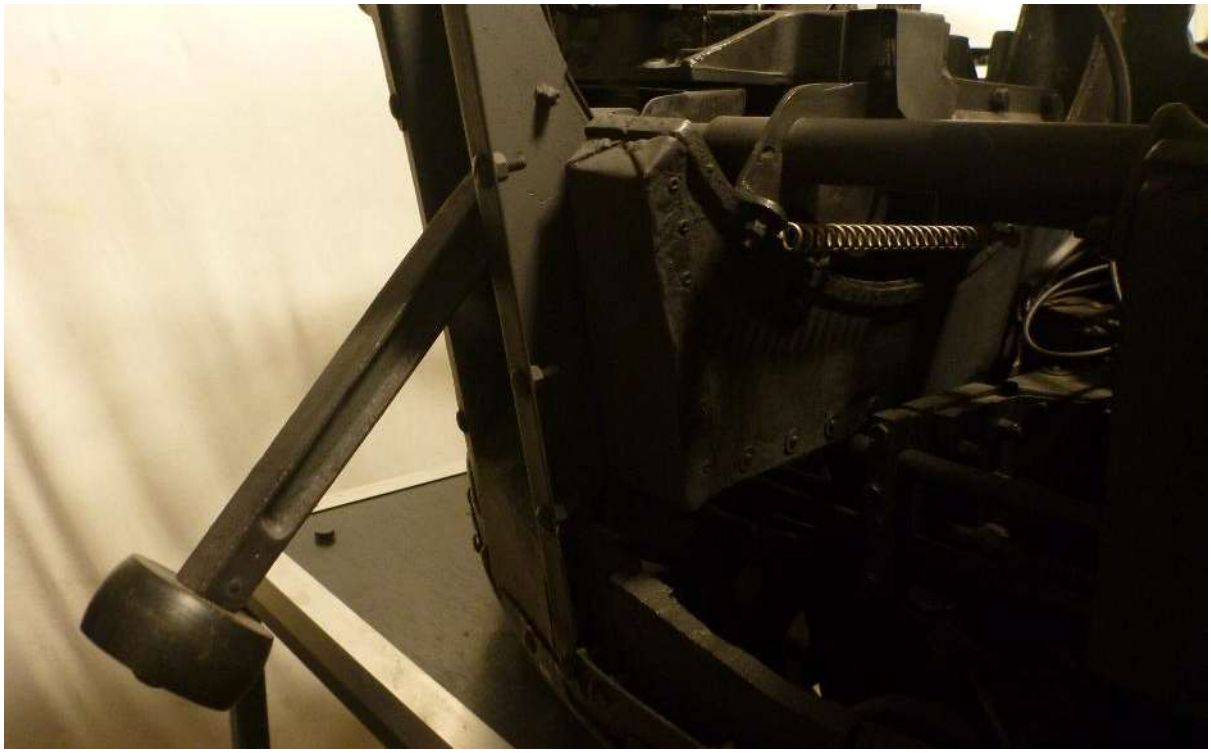
The big difficulty with this part of the restoration is that virtually nothing of the system remained. Even the castings that support the transverse rod and levers were absent, as the gun cradles are from an earlier model of turret (probably FN5). In fact, all I had was the two main levers with rollers attached.



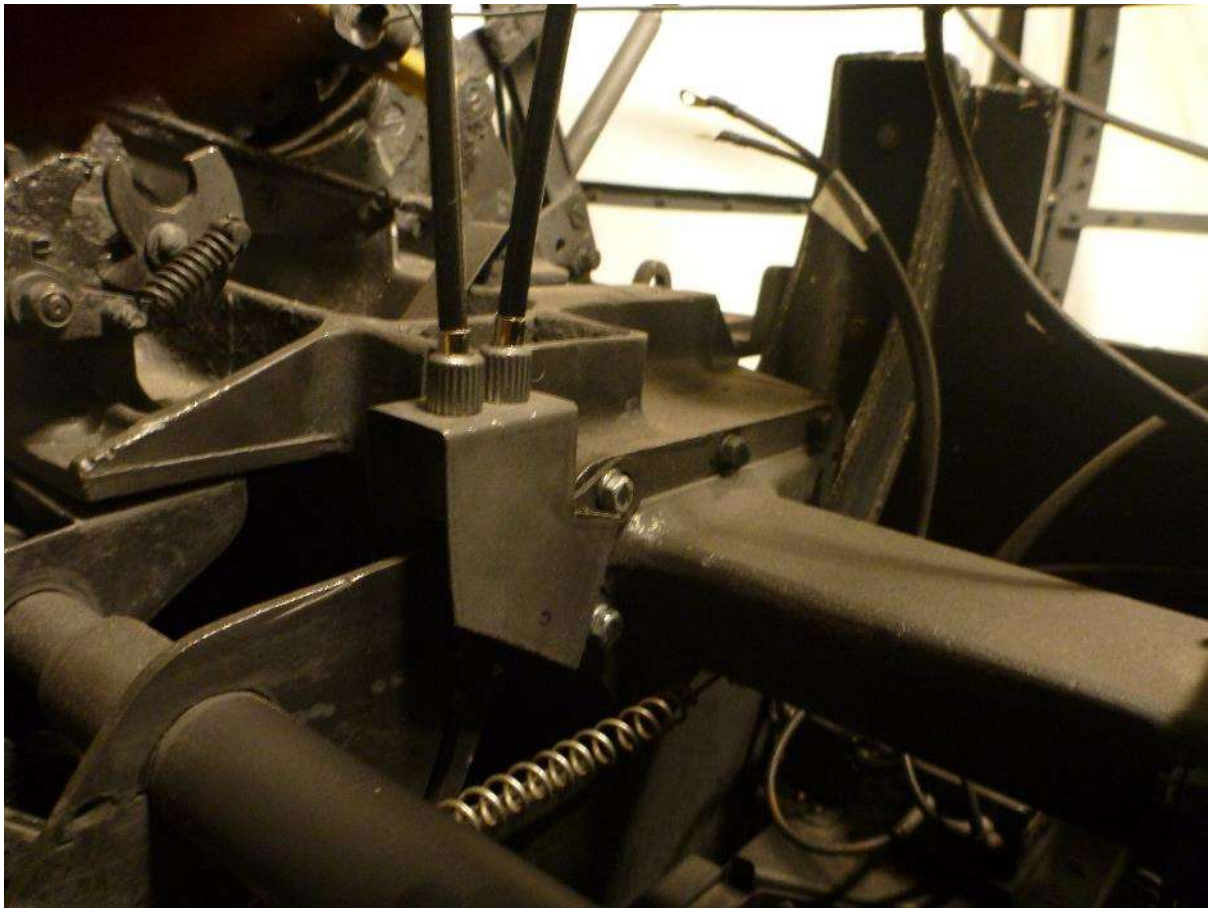
I managed to obtain sketches and patterns from the ever helpful Colin Waterworth and then started creating the missing parts. Firstly, two brackets were produced to do the job of the missing castings on the gun cradles. These were secured using the gun mount bolts to avoid drilling any further holes in the cradles.

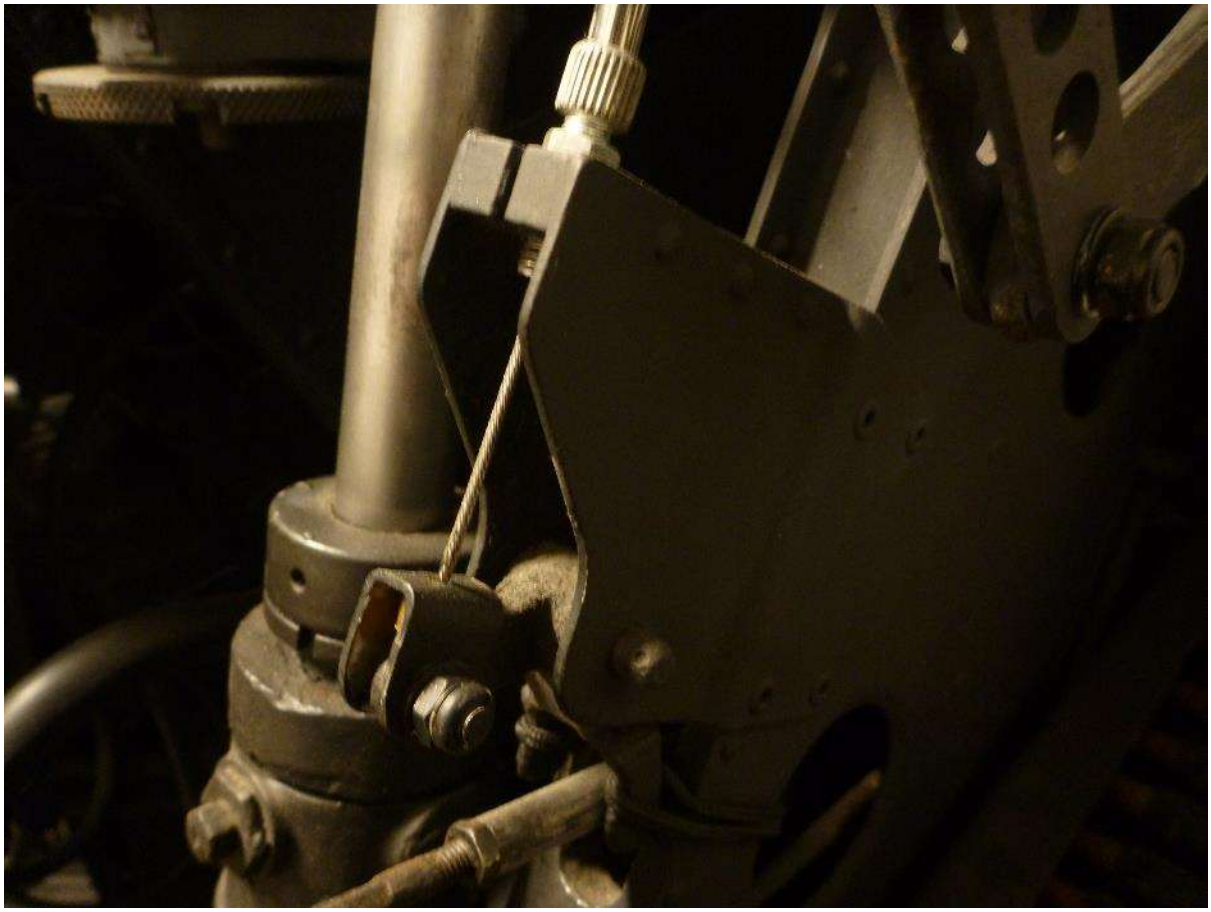
With these in place it was possible to build up the transverse shaft. This shaft carries the two levers with the rollers as well as another with a return spring and a fourth with return spring and Bowden cable mounting. After a fair bit of trial and error, the relative positions of these four levers was worked out and they could all be secured.





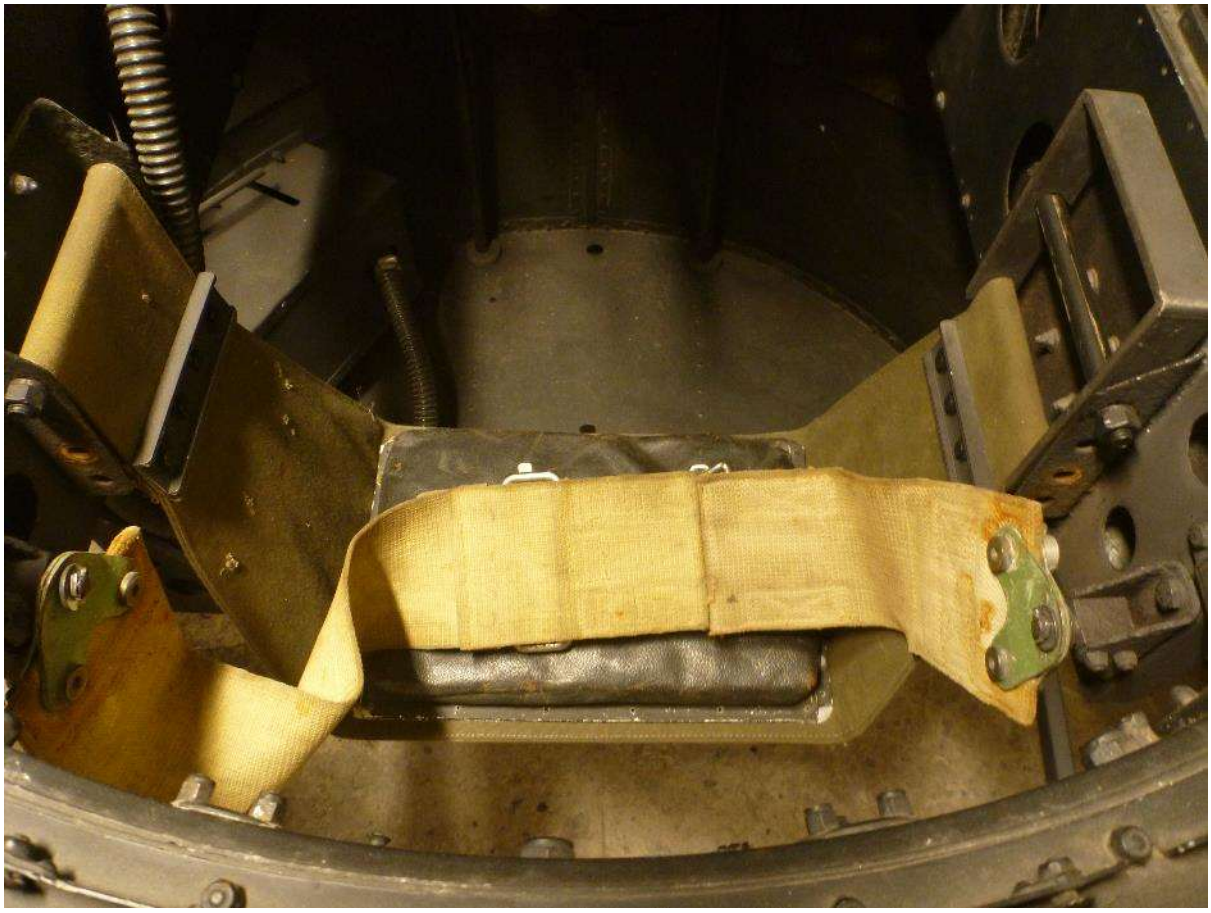
Then came the bracket to support the Bowden cable outers – made first in cardboard and then steel and fitted to the right hand gun cradle. The Bowden cables themselves are from a local bike shop. The staff asked what the cables I described were actually for and seemed mildly surprised when I replied “for a Lancaster mid-upper”. Luckily Bowden cables haven’t changed and a mountain bike brake cable does the job with a little bit of creative thinking.





There was little to go on for the seat assembly either, but in this case I went to the schematic drawing in the various Air Publications. The right side detachable mount was fabricated from steel, whilst the seat "sling" was sewn up from an old RAF sausage bag. With the whole seat bolted in it was tried for size, adjusted a bit and then finally fitted.

Then in went the seat belt mountings and, after a good scrub down, the actual seat belt. I have to admit at this point that only now do I realise why all vintage flying jackets are so badly torn. It is virtually impossible to enter or leave the turret without getting caught on something – and that's with it firmly on the ground.



Finally, it was time to lower the height of the stand. I had built this deliberately high to make access easier whilst the restoration was going on. With virtually all the work now done, it was time to get it to a better height for viewing by the average person. Taking 30cm off the legs left the turret at a point where it is now easier to look inside and, with care, spot the mistakes!

There are just a few minor items to fit when they become available and, having got the turret as far as I can for the time being, work has shifted to my FN-5. The task here is to copy as many parts as possible whilst the FN-150 is still to hand – some of these are simple little bits and some are complete systems. Luckily, it still hasn't got cold this winter so all is progressing well.

Above; a more or less complete FN-150 turret, which looks a fair bit different from the start of the project (below). 648 hours of work separate these two images.