

The Thundering of Guns

by Chris Holden

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One

The journey up to the HMSS Thor was surprising to Farrow. The aerolyth ride to twenty thousand yards height was more or less like any other aerolyth trip he had taken, except that as this craft was pressurised there was no need for the cumbersome leather and rubber breathing mask usually required when ascending to high altitude. The shock came when the whole craft tilted nose up and a noise like thunder, except much louder vibrated throughout the whole vessel. He could feel it through the deck and through the chair he was strapped to. At the same time, he felt the hand of God grasp him and push him into the back of the chair as if trying to crush him! He realised the pilot had fired the chemical rockets for the orbital insertion.

Eventually, the thunderous rumbling subsided, but he could tell they were still under thrust. There was still a rumbling vibration and he could still feel the pull of gravity, although counter to all his senses tried to tell him otherwise, it pulled him towards the tail of the craft, not the deck. Then the thundering stopped, and weightlessness took over.

Immediately, Farrow felt nauseous, but still strapped in could not move. A petty officer floated along the length of the deck and released him from his tethers. Farrow struggled to maintain his composure and balance. Without gravity he felt as if he was constantly falling – it was a confusing, sickening feeling.

"Feet on the deck sir," the petty officer said firmly. "Think of the deck as down and let your boot magnets keep you anchored. It doesn't take much to let go, as the magnets ain't strong, so stay still a moment to let you get some bearings."

The PO was right. Letting his feet attach to the metal deck and letting the magnets sewn into the soles of his overshoes anchor him helped a lot. At least it stopped his head's spinning confusion. "Thank you, err?"

"Petty officer Clement, sir. Talking helps while you're finding your space legs. Something about your brain doing the work of figuring out the new rules while you ain't thinking about it. What's your berth on the Thor to be then sir, if I may ask?"

"Guns," Farrow replied, then more fully, "Gunnery lieutenant, and I believe the ship's third lieutenant."

"Ah, you're up to prove the gun concept. I don't see how it can work sir, excuse me saying, but if a gun fires up here it acts like a manoeuvring rocket. That's no good is it?"

"You, ah, hit the nail on the head Clement. The reason we don't put guns on spaceships is that firing moves the ship, meaning every weapon on the ship has to recalculate targeting, not just guns. No good at all in a fight."

"So that's why they sent you up then sir because no-one with space legs knows much about guns?"

"Yes, and I know very little about rockets and torpedo-missiles. I will have a lot to learn"

"Oh, no worries there sir, Mister Drake is a first-rate gunnery controller. He'll be your number two sir. Sub-Lieutenant Drake. He knows the ins-and-outs of rockets and all sir. Come to the viewport sir, you'll be able to see the Thor..."

Farrow took his first tentative zero-gravity steps. The magnets in his 'boots', which were really not boots but Lasting Cloth overshoes, with the magnets sewn inside so there would be no sparks. In fact, his whole, and everyone else's uniforms were of the white canvas Lasting Cloth fireproof material, which back on the surface of Earth was used in the artillery magazines of forts or warships. Here, in space, a fire was such a risk that not even metal forks were allowed. Approaching the one-foot width circular viewport of armoured glass he got his first view of the HMSS Thor, experimental gun armed ether cruiser. It was an elongated, flattened diamond shape, with a mirror-like surface. At the central hub tall towers stood out, in what Farrow thought of as above and below. He instantly realised that these were sighting towers for the guns – not tall as on Earth to see further, but to give a greater distance between synchronised viewing positions for stereo range finding. He could also see the gun turrets, so unusual on any ether vessel that would never fly in atmosphere. There were four, each of two six inch breech loading guns of the most modern type not yet seen on even the latest ships of Earth's seas. Two turrets fore, and two aft. Both fore and aft had a symmetrical arrangement which Farrow thought of as one above and one below.

Two

After the first day's tour of the ship and meeting the other officers, Farrow was keen to get to work. He met Sub-Lieutenant Drake in the wardroom and they made their way to the gunnery control room.

Even though he had known exactly what to expect it was still amazing to Farrow. It was already crowded with three ratings as they entered. He peered into the binocular-like range and direction finder. As he did so he heard Drake speaking with the plotting table rating. "What's nearby for us to target Newly?"

"Choice of a fleet tug heading back into orbit or a French liner about a hundred miles abeam on our starboard sir," the rating replied.

Drake spoke again, this time into a speaking tube. "Obs' towers, target large ship, liner. Starboard, abeam. Approx' one hundred."

"Aye sir," Farrow heard two tube distorted voices simultaneously reply. The black he could see through the eyepieces of the device swam or a few seconds then centred, then focussed on a cylindrical open-framed ether ship. He would have to put in a lot of work on ship recognition. It had only been a week since he had received the unexpected orders for space service. Beneath the image the digits of the bearing to the ship were imposed upon the blackness: 087,042. "Calculating range," he heard the rating Newly say. Then imposed above the image of the ship the digits 176259 – the range in yards. Farrow did a quick calculation in his head. It was just over eighty-seven nautical miles away.

"Do you want it tracked and plotted sir," Newly asked.

"Yes," Drake responded, and work up a firing solution for all weapons.

"Aye sir," all three ratings responded.

Farrow looked up from the device. "Amazing," he said. "There is no distortion from the mirrors at all. And the left and right images blend so well – a perfect stereo image!"

"Yes sir," Drake answered. "Except of course it's up and down, not left and right. The left image of the stereo set is from the top tower and the right from the bottom tower. Each has a sub-lieutenant or midshipman and a trained rating on duty on all watches. The bearing information is fed from the top and bottom sighting telescopes directly to the specialised gunnery Babbage engine, which imposes it directly onto the master image you saw. It also calculates range from the slight differences in viewing angle of the two towers and imposes that too, as you saw."

"Excellent. When we have reviewed the firing solutions you ordered we can stand back down and review the turrets, gun crews, and ammunition supply. That's why I'm here after all."

Three

Each of the turrets were identical, and it surprised, and momentarily disorientated Farrow that the turrets on the 'underside' of the ship had their decks on what he had moments before thought of as their ceiling. It made sense, however, to follow the scheme of the two upper turrets and have the deck towards the superstructure. The gun fittings were familiar from the surface ships he was used to, as were the shell and charge lifts that delivered the two parts of the ammunition from their storage areas deeper within the ship. What was unusual was the webbing of rope around the walls which the gun crew used to help move around and secure themselves in place during firing. Also new to Farrow was what he realised was the air-locking mechanism for the gun barrels. Aside from the turret being sealed from the ship with its own airlock and being separately pressurised, the guns, when being loaded jaws on the gun barrels were closed. Once loaded they opened to allow the guns to fire, then closed after firing to prevent too much of the ship's precious atmosphere from escaping when the breech was opened. It was inefficient, but a trade-off until someone invented something better.

He watched each of the turret crews practice load and dry fire the guns, then reviewed what he had seen and the known drill timings taken before he came aboard. The two fore-turrets were fairly evenly matched, with only a second or two difference between them, but the aft turrets had one significantly faster. The aft upper turret had one gun manned by Royal Marine Artillery crewmen, and the competition between the gun crews within the turret as keen - it was ready two seconds faster than the fastest fore turret. Unfortunately, the aft lower turret was slow – a couple of seconds slower than the slower fore turret. That would have to be worked on, and the rest of the day was spent working up drills for the next day to improve performance ready for the day after that's live firing exercises.

That next day was hard work. Both for the sighting crew and the gun direction crews of all three watches, and the gun crews, who worked extra hard through all watches with only meal breaks. It seemed to be paying off though, as by instilling a sense of inter-turret and inter-gun competition between the crews, by the end of the day all could signal ready to fire, loaded and laid within three seconds of each other. Tomorrow, however, would be the acid test - live firing against stationary and moving targets. It would not only be a test for the crews, but for the concept of using guns in space.

Four

Farrow reviewed how well the morning's firing exercises had gone. Once the settings for the specialist difference engine had been adjusted slightly they were getting excellent results against static targets at ranges from two thousand yards up to one-hundred thousand yards – about fifty nautical miles. The afternoon would see the guns pitted against moving, remotely controlled targets. This would be when the speed and synchronisation of the gun crews would be vital, especially if they

were to have any success when they graduated to firing while moving using the Ewing-Stuart drive in the weeks to come.

The mood in the gun control room was relaxed as they tracked the first target as it moved above and across their bow twelve thousand yards away. When both the forward turrets reported ready the order was given, and they simultaneously fired – electronically synchronised so that the top turret fired live shells towards the target, while the bottom fired specially made blank charges, calculated to match exactly the force of the live firing guns, but in exactly the opposite direction – essentially firing on a back bearing to counteract the effect of the thrust from the live firing guns.

It took several attempts to hit the first target, but that was to be expected. The ship did move slightly with each firing, but it was not beyond the Babbage machine's capability to quickly recalculate. Also, in the future, they would be able to fine tune the blank charges using the data they were collecting.

Farrow rotated live firing around all four turrets, but so far had only used either forward or aft at once, never engaging one from each end, which would require all four turrets to be in operation. Now, with this last target of the day, which would pass high on their port side, he would engage both upper turrets at the target. He expected more judder to the ship, as thrust would be applied from four directions, but trusted that the targeting system and crew were up to the task.

As the target began its pass he allowed the solutions to be calculated then ordered the first salvos fired. They missed, all shot exploding harmlessly ahead of the remote target craft. By the time the recalculations were done he had three lit lights telling him three turrets were ready. A couple of seconds later the fourth turret, the aft lower, lit up as ready. As they fired the second salvo Farrow called the slower turret on the intercom telephone. "Step up please, you did well yesterday, and so far today. But you were late on that last reload. Left too long we lose the chance to fire and have to recalculate. That won't do!"

The third salvo was closer, and as the engine calculated the new laying and it was relayed to the turrets all four ready lights lit simultaneously.

"Fire!" Farrow ordered, and as the guns fired they were all tipped off their magnetically held feet and hammered into the armoured wall of the room!

As they fought to shake confusion as to what had happened Drake reacted quickest and tried to phone the bridge. The phone seemed to be out and he tried the speaking tube. "Bridge? Guns. What happened?"

"Guns! The lower aft has gone. We're venting back where some compartments have not been secured. Get the obs' tower down there to see if they can see what's what!"

Farrow grabbed the tube to the lower observation tower. "Did you see what happened?"

"Sir..." came the reply. "The rear aft blew up. It's gone! Looks like the charge store for the aft turrets has gone as well. The ship's a mess up to the waist and two-thirds of the way to midships."

Drake reported the extent of what was seen to the bridge while Farrow let it sink in. Thank God they armoured the magazines so well, so the shell storage had not blown up too! Not that it mattered. This experiment was over.

"It was going so well sir, what happened do you think?" Drake asked.

“They left the charge lift open instead of closing it to save a couple of seconds. Something happened that would have blown the turret anyway – maybe a failure of one of the guns. Something sparked? Who knows? But with the lift open the explosion travelled along the shaft and blew the charge magazine... Bloody fools.”

“But the guns work though sir, we showed that at least.”

“Did we? I doubt they’ll try an experiment this expensive again.”

“Oh, come on sir, surely you’ve shown the concept works, and they’ll investigate and iron out the kinks.”

“No, Thor’s a wreck. She’s finished, and so am I. And so are those poor souls down there. We don’t even know how many yet...”