Lesson 17: Waves of War Operation "Waves of war"

General Briefing, TOP SECRET.

RED TEAM

We have now been at war with the blue team for almost a year. In that time we have suffered heavy losses and have lost all our land apart from the main island. We need to use our advantage in technology to use electromagnetic radiation to defeat the enemy.

We have developed a system of **RA**dio **D**irection **A**nd **R**ange-finding equipment called **RADAR**. It uses radio waves to travel to the enemy and reflect back like an echo. This reflection is shown on a display.

At the moment we have two versions of the radar. **Type A** is a large system with a huge range that uses quite long Radio waves (2-3metres). It produces only vague information (not precise numbers of aircraft) and only operates down to 300m above sea level. It has a range of 200 miles in perfect conditions. **Type B** is newer. It has a range of about 100 miles but works on a smaller scale so bombers and fighter aircraft look different. The wavelength is lower (75cm). Both types of radar are built into radar stations along our coastline.

We know that the blues have captured examples of the Type A system.

Your task:

What should be our priorities for research? These are some suggestions that have been made. Pick out the <u>three</u> most important and <u>explain</u> why you would choose them. What sort of wave would be needed for your choices?

- 1 Radar controlled gunnery for ships, anti-aircraft guns and other artillery.
- 2 Aircraft radar for night-flying fighter planes.
- 3 Anti-radar systems for jamming any enemy radar.
- 4 Aircraft radar for detecting enemy ships.
- 5 Aircraft radar for detecting the towers of submarines.
- 6 Longer range radar
- 7 More detailed shorter ranged radar.
- 8 Vehicle radar for fitting to tanks to detect other vehicles.

The shorter the wavelength of an electromagnetic wave the more energy it contains. Is it possible to make a death ray by using shorter wavelengths like light, x-ray or Gamma rays? What problems might we expect?

Good Luck. Briefing ends.