

COMMAND: MODERN OPERATIONS SONAR MODEL ALTERATION RAPID SUMMARY

Introduction

This document is intended to be a surface explanation of recent comprehensive changes to the Sonar Model. More detailed patchnotes/documentation may be forthcoming, but this initial explainer is to provide a brief summation of recent realization oriented adjustments the team has made to Command: Modern Operation's Sonar Modeling based on user feedback. If you require any further specific explanation, or encounter any issues that you feel may be a bug, please feel free to post in the appropriate Subforum on the Matrix Games forums. There staff and other helpful users will be able to provide you with input on your feedback.

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1. Layer Strength

Previous Iteration: Previously CMO computed a modifier to layer strength that was flatly calculated based on a set latitude quantity. (1 Layer Modifier Band every 18 Degrees) This left weak layers stretching from 63 Degrees N/S up past 81 Degrees.

Current Iteration: A reduction of the latitude quantity used in this calculation was made in order to more regularly and accurately model the gradient of Layer modeling. (1 Layer Modifier Band every 10 Degrees) This means that North/South of 60 Degrees the Layer will be extremely weak, and North/South of 70 Degrees there will be no layer *at all*.

Rationale: In far enough northern Locales, though a layer does exist, it does not represent a thermocline, because the water at the surface of these climes is as cold or colder than the water below. In general typical water temperature, and thus general latitude, plays a larger role in the gradation of Layer Strength than was previously modeled.

Critical Gameplay Adjustments:

There are additional gradations of Layer Strength. Where before there were 5 bands of Layer Modifier on either side of the Equator, now there are 7, including a zero modifier.

North/South of 70 Degrees of Latitude *there will not be a Thermocline present in any capacity.*

North/South of 50 Degrees of Latitude the Thermocline will be roughly as strong as the Layer was at 81+ Degrees previously. (A dramatic decrease in Layer strength.)

In general Surface combatants will perform better against Subsurface combatants the farther North/South they are.

2. Convergence Zones

Previous Iteration: Convergence Zones had a fixed requirement of 200m/600 feet under the keel. They also had intervals that ranged from 40nm at the poles to 20nm at the equator, depending on local water temperature.

Current Iteration: The minimum depth required for convergence zones varies from 1700m to 4600m (5600-15100 feet) depending on local water temperature at the surface, modeled as a function of the sensor's position above (Lowest required distance) or below the equator (Highest required distance). Convergence Zone detection intervals range from 20nm near the poles to 40nm near the Equator. However, north/south of 70 degrees, *there are no convergence zones*.

Rationale: Similar to the above changes this more accurately represents the effect water temperature, modeled by general latitude, has on hydroacoustics.

Critical Gameplay Adjustments:

The previously static calculation for minimum Convergence Zone depth has been shifted from a static value to one that shifts dramatically based on relative position north or south of the equator, with a gradation interval of roughly 3 degrees.

Each interval North or South of the Equator sees a decrease in minimum required depth and Convergence Zone Distance Interval.

The minimum depth for the layer in the equator and surrounding climes is dramatically deeper, requiring ~5,000 meters of depth North or South of the Equator.

There are no Convergence Zones at greater than 70 Degrees Latitude North/South.

In General Convergence Zones will need extraordinary depths in warm waters, limiting their effectiveness in a variety of near-equator locales, and will not exist in Arctic/Antarctic Waters. The 'sweet spot' for CZs will be in relatively deep waters between 55 and 69 degrees North/South.

3. Deep Sound Channel (DSC)

Previous Iteration: The DSC was available to a variety of Surface Combatants with suitable VDS/TDA Sonar sensors in addition to SOSUS style fixed, deep water sonars and other similar sensors.

Current Iteration: The DSC is ONLY available to SOSUS and equivalent fixed, deep water hydroacoustic sensors. Tactical Platforms will not be able to utilize it.

Rationale: This change is based on input from a number of informed users with experience in the relevant spaces. The DSC is not a viable approach for Tactical Platforms.

Critical Gameplay Adjustments:

The DSC will not be available to Surface Platforms.

In general Subsurface platforms will perform better against VDS/TDA equipped Surface platforms than previous.