FUTURE

Requires the use of the d20 Modern™ Roleplaying Game, published by Wizards of the Coast, Inc.

OVERWHELMING FIREPOWER

INTRODUCTION

When I first saw the standard rules for starships, I immediately began to think of conducting starship battles. Battles like the actual historical naval battles that have been fought throughout history (i.e. Jutland, Midway, Tsushima, etc.). Battles where massive battleships with scads of giant guns slug it out over their destroyer screens and carriers launch fleets of aircraft at enemy task forces. Unfortunately, after reviewing the standard rules, I found that they weren't actually suited for that sort of battle.

This was largely due to the fact that the guns presented in the standard rules were the same no matter whether they were on an ultralight fighter or a superheavy dreadnought. That is, a laser mounted on an ultralight courier craft was the same kind of laser (same power, range, etc.) as a laser mounted on a mediumweight strike cruiser or a superheavy dreadnought.

Now, if you know anything about real world battleships, you obviously know that the guns mounted on a battleship were much larger (with commensurate greater power, range, etc.) and more numerous than the guns mounted on a destroyer. In fact, the whole point of battleships was to be able to mount the largest guns; with the exception of aircraft carriers, military ships are really nothing more than mobile platforms for guns. And it is precisely this aspect of battleships, the ability to mount the largest weapons, which the standard rules do not address.

Rather than write a completely new set of rules that would render the existing statistics for starships found in the standard rules obsolete, I wanted to come up with a way to work as much as possible within the existing standard rules. While some adaptation was inevitably necessary, the rules presented in this PDF are designed to work as seamlessly as possible with the existing standard rules on starships.

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THE BASIS FOR THE RULES

As already outlined in the introduction, the concept behind this PDF is to provide rules that allow the GM (and the players if the GM is kind) to create starships with the kind of weaponry found on real-world battleships and thus to be better able to approximate the real world relationship between the firepower of ships (i.e. battleship versus destroyer).

Naturally, one of the best ways to do this is to look at real world battleships. While one could go literally crazy with all the material that is out there, for the purposes of establishing some sort of baseline, a simple comparison will do.

Since this PDF focuses only on firepower, we'll limit ourselves to the armaments (and the major ones at that) carried by two WWII American warships: the Iowa class battleship *U.S.S. Wisconsin* and the Fletcher class destroyer *U.S.S. Kidd*. By comparing the armaments of these two ships (see *Real World Comparisons,* below) we can get a rough idea of the difference in firepower between a destroyer and a battleship.

It becomes quickly apparent just how much more guns (and firepower) the *Wisconsin* has over the *Kidd* (especially those 16-inch guns).

The *Wisconsin's* 16-inch guns were organized into 3 batteries (turrets) of 3 guns each, it's 5-inch guns into 10 batteries (turrets) of 2 guns each, its 40mm A.A. guns into 20 batteries of 4 guns (quad-mounted) each, and its 49 (or 51 depending on the source) 20mm anti-aircraft guns into 2 batteries of 2 guns (twin-barreled) and 47 single barreled.

The *Kidd's* 5-inch guns each had its own turret, while its 40mm guns were organized into 2 quad-barreled and 3 twin-barreled batteries; all of its 20mm guns were twin-barreled.

Let's compare that to the standard rules' destroyer and battleship armaments (see *Standard Rules Comparisons,* below).

As can be seen, the two ships have virtually identical weapons systems and, as a result, there is virtually no difference in the damage-causing ability of the battleship versus the destroyer. Obviously, if the d20 Future battleship and destroyer are to more closely resemble their WWII counterparts, some alterations will have to be made to the standard rules.

REAL WORLD COMPARISONS

U.S.S. Wisconsin	***U.S.S. Kidd***
9 16-inch (406mm) guns	
20 5-inch (127mm) guns	5 5-inch (127mm) guns
80 40mm anti-aircraft guns	14 40mm anti-aircraft guns
49 20mm anti-aircraft guns	12 20mm anti-aircraft guns
3 aircraft	5 21-inch torpedo tubes

STANDARD RULES COMPARISONS

Battleship	***Destroyer***
4 heavy neutron guns (battery)	4 heavy neutron guns (fire-linked)
2 fire-linked nuclear missile launchers	2 fire-linked nuclear missile launchers
1 needle driver	1 needle driver
Point-defense system	Point-defense system

NEW CONCEPTS

In order to create the balance we are looking for, a couple of new concepts need to be introduced.

The first is the concept of Armament Points, which are points that a ship may spend on weapons. This concept is based on, but replaces, the idea of a ship receiving weapons based on its type (size) and HD.

The second is the concept of caliber, of having weapons of different sizes. The idea is to allow larger ships to mount larger weapons (which have longer range and do more damage, but cost more and have a reduced rate of fire) rather than having all ships mount the same size weapons.

The concepts of Armament Points and caliber are related; it costs more Armament Points to buy a weapon of a larger caliber. We are going to look at caliber first.

CALIBER

The concept of caliber is based on the real-world example of there being larger and smaller versions of the same sort of weapon (i.e. cannons).

However, unlike real-world weapon sizes, which are based on measurements (i.e. 16-inch, 40mm, etc.), calibers for starships are based on the five starship types as summarized on the table below:

CALIBERS

ultralight
light
medium
heavy
superheavy
oversize1*
oversize2*
oversize3*

*only missiles may have these calibers, see **Oversize Calibers** below.

Note that the calibers are written in all lowercase, unlike ship types which are written with the first letter capitalized; this PDF will use this format to distinguish a heavy caliber weapon from a Heavy type starship.

The reason that the calibers (with the exception of the oversize calibers) are named after the ship types is so that the starship designer has an easier time relating the calibers to the type of starship he or she is creating.

CALIBER RULE

The caliber rule is as follows:

A ship may be equipped with a weapon (beam weapon, projectile weapon, or missile rack/launcher) of a caliber equal to its type or lower.

Thus, a Light destroyer can mount weapons of light or ultralight caliber while a Heavy battleship can mount weapons of large, medium, light, or ultralight caliber.

OVERSIZE CALIBERS

Oversize calibers apply only to missiles, not to missile racks/launchers, beam weapons, projectile weapons, or mines, and are designed to mimic the presence of the 21-inch torpedoes on the *Kidd*.

These torpedoes, which caused more damage than sixteen inch guns when they hit, were the equalizer that destroyers had to deal with larger ships (a favorite tactic especially in the Battle of Jutland was to have the fleet's destroyer screen launch torpedoes at the enemy fleet, forcing it to turn and evade or face the prospect of having scores of torpedoes impact the fleet).

In order to simulate this in the rules and make it work with the concept of calibers, the concept of oversize calibers was created. This allows a ship to mount a missile rack/launcher of the

appropriate caliber (i.e. a Light destroyer can mount a light missile rack) but to carry larger missiles than normally come with the rack.

This is accomplished by reducing the amount of missiles in the rack in order to mount larger missiles (effectively trading the number of missiles for the size of the missiles). The rule is summarized as follows:

For each reduction of the number of missiles in a rack/launcher by one-half, the caliber of each missile in the rack/launcher is increased by one. This process can be repeated up to three times per rack/launcher (i.e. from 8 to 4 to 2 to 1), increasing the caliber of the missiles each time. This does not increase the caliber of the missile rack/launcher.

Note that it is possible to apply this rule in reverse. That is, a heavy missile rack/launcher would be able to carry 8 heavy missiles, 16 medium missiles, 32 light missiles, or 64 ultralight missiles for the same AP cost.

A quick example will illustrate the rule.

A light nuclear missile launcher mounted on a Light destroyer (the largest missile launcher the destroyer can carry) normally carries 8 light nuclear missiles in its rack. By reducing the number of missiles carried to 4, the caliber of the missiles becomes medium (but the rack is still a light rack). A further reduction in the number of missiles to 2 increases the caliber of the nuclear missiles to heavy. A final reduction down to 1 missile per light missile rack/launcher increases the caliber of the missile to superheavy. This is summarized in the following table:

LIGHT NUCLEAR MISSILE RACK/LAUNCHER

# Missiles	Missile Caliber
16	ultralight
8	light
4	medium
2	heavy
1	superheavy

Thus, although the largest missile rack the Light destroyer can carry is a light missile rack, the missiles in that rack can be up to superheavy in caliber (although then there will be only one such missile in the rack instead of 8 light missiles). This is also the reason for oversize calibers; a Superheavy ship mounting a superheavy missile rack/launcher can mount the following missiles:

SUPERHEAVY NUCLEAR MISSILE RACK/LAUNCHER

# Missiles	Missile Caliber
128	ultralight
64	light
32	medium
16	heavy
8	superheavy
4	oversize 1
2	oversize 2
1	oversize 3

Applying Caliber To Starship Weapons

The caliber concept uses the existing starship weapon statistics from the standard rules as its base. Specifically, the statistics listed in the standard rules now make up the ultralight caliber of starship weapons. Thus the standard PL 7 quantum cannon with its 16d8 (72) points of damage, 6,000 ft. range increment, single rate of fire, and Purchase DC of 41 is now the ultralight quantum cannon.

But what happens when a weapon goes up in caliber? The basic caliber application rule is:

For every increase in the caliber of a weapon:

-its damage is doubled

-its range increment is increased by its base range increment

-its Purchase DC increases by +2

-and its rate of fire is reduced by one step (i.e. from 1/round to 1/2 rounds; see the **Rates Of Fire** boxed text for more information)**.**

Caliber	Damage	Range Increment	Rate of Fire	Purchase DC
ultralight	16d8 (72)	6,000 ft.	Single (1 shot/round)	41
light	32d8 (144)	12,000 ft.	1 shot/2 rounds	43
medium	64d8 (288)	18,000 ft.	1 shot/3 rounds	45
heavy	128d12 (576)	24,000 ft.	1 shot/4 rounds	47
superheavy	256d12 (1,152)	30,000 ft.	1 shot/5 rounds	49

For example, returning to the standard rules' PL 7 quantum cannon and adjusting it for the various calibers yields the results show above.

As can be seen, much as in the real world, a heavy caliber quantum cannon mounted on a Heavy battleship causes more damage and has a longer range, but fires at a slower rate and is more expensive. And, as in the real world, the damage of the weapon increases more rapidly than the reload rate decreases (a 16-inch gun can fire just over twice per minute, while a 5-inch gun can fire about eight times per minute).

That concludes the caliber concept and it is time to move on to the Armament Points concept.

Rates Of Fire

The standard rules have three rates of fire for ranged weapons: single shot, semiautomatic, or automatic, which are defined in the following way (keep in mind that attack means the same as round in these definitions):

Single Shot: A weapon with a single shot rate of fire can fire only one shot per attack (round), even if the gunner has a feat or other ability that normally allows more than one shot per attack (round).

Semiautomatic (S): A semiautomatic ranged weapon fires one shot per attack (effectively acting as a single shot weapon). However, a gunner who gains multiple attacks per round because of his level or because of certain feats can fire a semiautomatic beam weapon multiple times in rapid succession, getting more than one shot per attack.

Automatic (A): Automatic ranged weapons fire a burst or stream of shots. Only weapons with the automatic rate of fire can be set on autofire or be used with feats that take advantage of automatic fire.

In the real world, rates of fire are determined chiefly by how quickly a weapon can be reloaded; smaller weapons (and by small I mean relative to a ship) can be reloaded very rapidly, larger weapons are much slower.

In the real world, the 30mm Gatlin gun is about the largest weapon that can be fired at what the standard rules consider automatic while guns in the tank cannon range (up to about 100mm) are the largest weapons that can be fired at what the standard rules consider semiautomatic (and even then it is only twice per round).

Translating these real-world limitations into game terms is relatively simple:

All weapons except those that have only an autofire setting are treated as single shot weapons for purposes of determining rates of fire as they increase in caliber; weapons that have only an autofire setting cannot increase in caliber.

Please note that this rule also applies to missiles; that is, it is the caliber of the missile, not the missile launcher/rack that determines the missile launcher/rack's rate of fire. Thus a heavy missile rack carrying superheavy missiles fires at the superheavy rate while the same heavy missile rack carrying medium missiles would fire at the medium missile rate.

Let's look at some examples.

The standard rules PL 6 fusion beam (which is an ultralight fusion beam) is strictly a single shot weapon. As a result, the rate of fire as the weapon increases in caliber is reduced by one step per caliber:

FUSION BEAM RATE OF FIRE

Caliber	Rate of Fire
ultralight	Single (1 shot/round)
light	1 shot/2 rounds
medium	1 shot/3 rounds
heavy	1 shot/4 rounds
superheavy	1 shot/5 rounds

Next, let's take a look at the PL 6 ultralight gauss gun. This is a single shot weapon that can be modified to fire on either semiautomatic or automatic. As per the rule, it is treated as a single shot weapon (the semiautomatic and automatic options are ignored). Thus it has the following rate of fire:

GAUSS GUN RATE OF FIRE

Caliber	Rate of Fire
ultralight	Single (1 shot/round), Semiautomatic, or Automatic
light	1 shot/2 rounds
medium	1 shot/3 rounds
heavy	1 shot/4 rounds
superheavy	1 shot/5 rounds

The PL 6 ultralight needle driver is an autofire-only weapon. As per the rule, it cannot be increased in caliber, and thus has the following rate of fire:

NEEDLE DRIVER RATE OF FIRE

Caliber	Rate of Fire
ultralight	Single (1 shot/round), Semiautomatic, or Automatic

Then there is the PL 8 ultralight sliver gun. This gun can be fired on both semiautomatic and automatic fire, but not single shot. As per the rule, it is treated as a single shot weapon for caliber increases and thus has the following rates of fire:

SLIVER GUN RATE OF FIRE

Caliber	Rate of Fire
ultralight	Semiautomatic, or Automatic
light	1 shot/2 rounds
medium	1 shot/3 rounds
heavy	1 shot/4 rounds
superheavy	1 shot/5 rounds

The point here is that, while caliber increases the damage and range of a gun, it also increases its rate of fire and so the starship designer has to make a choice between large weapons that do massive damage but fire very slowly and smaller weapons that don't do as much damage but fire more rapidly.

Finally, there is the PL 6 nuclear missile rack/launcher. Remember that the AP cost of the missile rack/launcher is determined by the missile rack/launcher's caliber, but the rate of fire is determined by the missiles' caliber. For example, assuming that it is a heavy missile launcher it has the following rates of fire:

HEAVY NUCLEAR MISSILE LAUNCHER

# Missiles	Missile Caliber	Rate of Fire
64	ultralight	1/round
32	light	1/2 rounds
16	medium	1/3 rounds
8	heavy	1/4 rounds
4	superheavy	1/5 rounds
2	oversize 1	1/6 rounds
1	oversize 2	1/7 rounds*

*since it only carries one missile, it would only fire once unless an additional missile rack was purchased for the launcher.

ARMAMENT POINTS

The idea behind Armament Points is that a larger starship will have more weapons, and of larger caliber, than a smaller ship. The concept is based on the standard rules' idea of determining the number of weapons a starship is equipped with on the starship's Hit Dice. Basically, a starship is given Armament Points based on the number of Hit Dice it possesses and these Armament Points are then spent on various weapons of various calibers.

The Armament Point rule is:

A starship gets 1 Armament Point (or AP) for every 3 Hit Dice (HD).

So a destroyer (80 HD) gets 26 AP while a battleship (400 HD) gets 133 AP (and a dreadnought with its 1,200 HD gets 400 AP). This means that a battleship has about five times the AP that a destroyer has and, if each bought the same type of weapons, the battleship would have five times as many weapons as the destroyer (which fits roughly with the ratio set by the *Wisconsin's* 158 guns to the *Kidd's* 31 guns).

Spending Armament Points

Armament Points are spent on beam weapons, projectile weapons, missile racks/launchers (but not missiles) and mine layers (see the **What About Mines?** boxed text). Each of these weapons will have a cost based on its caliber as summarized in the table below:

AP WEAPONS COST

Caliber	AP Cost
ultralight	1
light	2
medium	3
heavy	4
superheavy	5

Carriers And AP

A carrier's primary defense and offense is its fleet of fighters. As a result, the AP of a carrier's fighters counts against the total AP of the carrier (the carrier in effect loses AP due to the presence of weapons for the fighters; and, yes, that is double-counting the AP since the fighter also spends AP for its weapons, but it makes for better game balance).

For example, a Heavy fleet carrier with 500 HD receives 166 AP. If it carries the standard 16 assault fighters it has paid 3 AP for each fighter (since each fighter carries 3 ultralight weapons) for a total of 48 AP and now has 118 AP to spend on weapon systems for itself.

In case you are wondering, the WWII carrier *U.S.S. Yorktown* carried 80+ planes and was armed with 12 5-inch guns, 32 40mm guns, and 46 20mm guns. So in addition to its fleet of planes, it had the firepower of almost 3 destroyers (but no 16-inch guns).

Thus a medium caliber laser costs 3 AP while a superheavy caliber laser costs 5 AP.

You will note that the oversize calibers are not listed in the cost. That is because the oversize calibers apply only to missiles, and these missiles are part of the AP cost of the missile rack/launcher. Thus the AP cost for a heavy caliber nuclear missile rack is the same whether that rack mounts 8 heavy caliber nuclear missiles, 4 superheavy caliber nuclear missiles, 2 oversize1 caliber nuclear missiles, or 1 oversize2 caliber nuclear missile.

What About Mines?

All minelayers and mines are considered to be of ultralight caliber (although they can still only be mounted on colossal ships). Minelayers cost 1 AP. Mines do the damage listed in the standard rules. Like weapons that fire only on autofire, minelayers and mines cannot have their caliber increased.

Optional Rule: Deploying Multiple Mines

The standard rules limit a ship to deploying only a single mine as an attack action in any 500-foot square it currently occupies. This means that a Heavy ship, which occupies a total of 9 500-foot squares, can deploy only a single mine, putting it on par with a light ship that occupies only a single .

Since mines are used chiefly as a blockading measure (to keep ships from moving through a certain area) and are employed either in a static defense (i.e. blocking a jump point) or to cover a ship's retreat by dropping the mines in the path of pursuing ships, it would be nice if a larger ship could deploy several mines at once to better cover the area it occupies.

Thus, under this optional rule, a ship that can carry minelayers (it must be at least Colossal size) and mines (each mine takes up 100 tons of a ship's cargo capacity) can buy any number of minelayers (as long as it has the AP for them).

Besides the fact that only Colossal ships with some good cargo space can deploy mines, a ship can only deploy mines in 500-foot squares it occupies, and no more than four mines can be deployed in any single 500-foot square. Thus there is a practical limit to how many minelayers and mines a ship of a given size can carry.

Although a Superheavy ship could be equipped with a total of 64 minelayers (at a cost of 64 AP) that could lay a total of 4 mines in each of the 16 500-foot squares the ship occupies every attack action, 64 mines take up 6,400 tons of cargo space so even a Superheavy dreadnought's cargo capacity will be quickly taxed.

What About Grappling Systems?

Although not a weapon, in the standard rules a grappling system counts against the available weapon slots. Because of the way the standard rules handle grapplers (specifically the fact that a grappling system on an Ultralight ship of Colossal size is as effective as the grappling system on a Superheavy ship) there are two ways to handle these systems.

The first is to assume simply that all grappling systems are equivalent to an ultralight caliber weapon, and thus any grappling system costs 1 AP to mount aboard a vessel. This is obviously the simplest option.

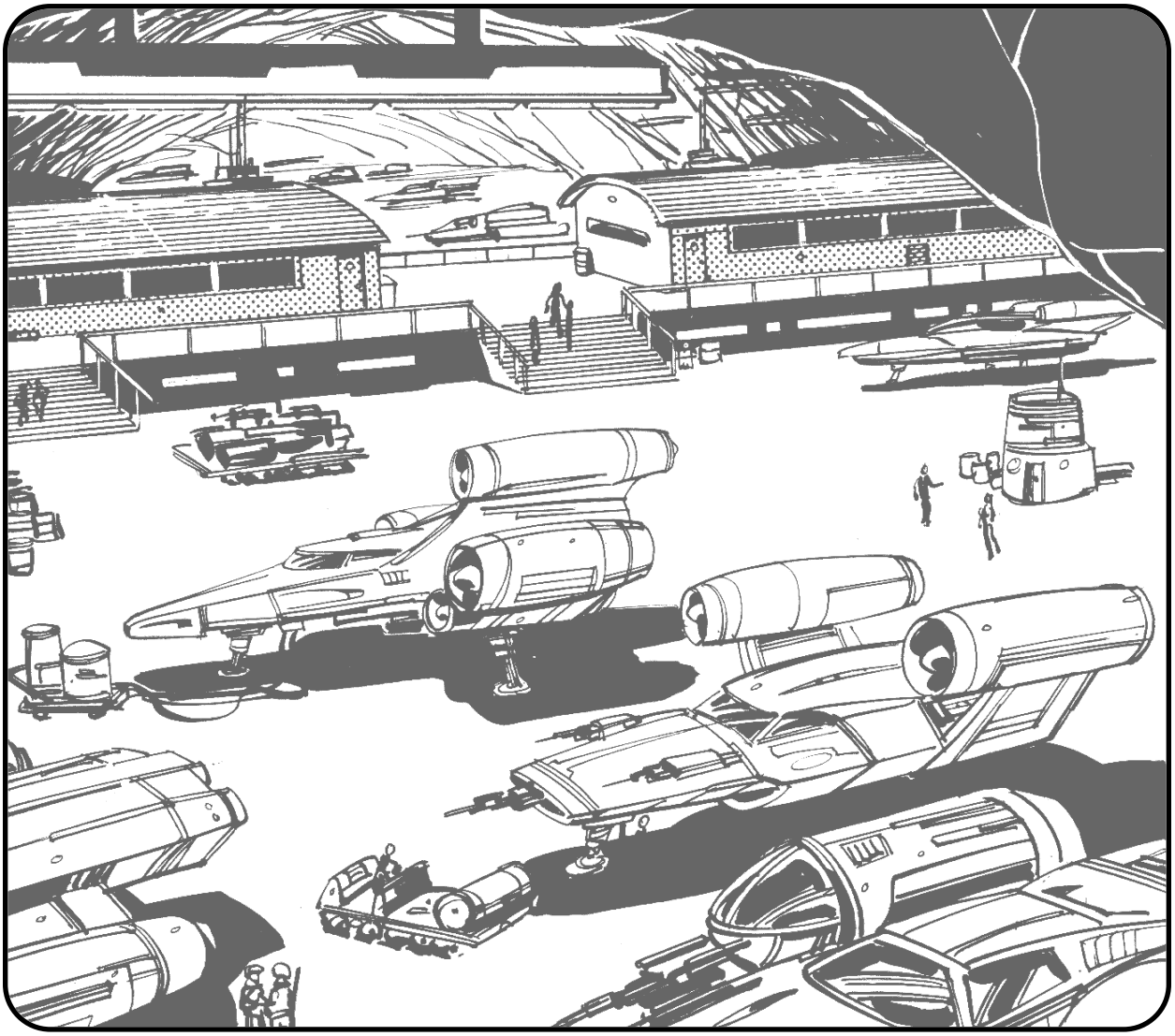
The second option is to assume that larger grappling systems are more effective than smaller grappling systems. Using this option means that grappling systems fall under the caliber rules (i.e. a ship can only mount a grappler of its a caliber equal to its type or less) and also grapplers of a larger caliber are more effective than those of a smaller caliber.

As with weapons, the ship may be equipped with as many grapplers as can be purchased with the ship's AP.

Grappling System Ship Size/Caliber	Grapple Bonus	AP Cost
Huge*/ultralight	+8	1
Gargantuan*/ultralight	+12	1
Colossal*/ultralight	+16	1
Light/light	+20	2
Medium/medium	+24	3
Heavy/heavy	+28	4
Superheavy/superheavy	+32	5

*ship size applies only to grappling systems of ultralight caliber

THE RULES IN ACTION



Let's take a look at how all of this works by using the rules to create a starship destroyer and starship battleship with the ultimate goal being that they more closely resemble the relationship between the *Wisconsin* and *Kidd*.

For the purposes of this example, both the destroyer and battleship will stay as close to their standard rules statblocks as possible. Thus they will remain PL 6 and will have access only to the weapons that they are equipped with in the standard rules: heavy neutron gun, nuclear missile launcher, and needle driver.

Equipping The Ships

As stated earlier, a standard rules battleship receives 133 AP from 400 HD and a standard rules destroyer 26 AP from 80 HD. Let's equip the destroyer first.

Because the destroyer is a Light ship, it cannot carry a weapon of any caliber larger than light. As its primary weapons it chooses to mount 4 fire-linked light caliber heavy neutron guns, adds a couple of fire-linked nuclear missile launchers (8 missiles) for added punch, and

closes out with 5 sets of 2 fire-linked ultralight needle drivers as defense against fighters and other small ships (since needle drivers fire on autofire only, they cannot be of any larger caliber), and a light caliber point-defense system. The cost breakdown is as follows:

Weapon	AP Cost
4 fire-linked light caliber heavy neutron guns	8
4 fire-linked light caliber nuclear missile launchers	8
5 sets of 2 fire-linked ultralight needle drivers	10

Note that the destroyer can mount 8 light caliber nuclear missiles, 4 medium caliber nuclear missiles, 2 heavy caliber nuclear missiles, or 1 superheavy caliber nuclear missiles in its 4 nuclear missile launchers. In order to simulate the 21-inch torpedoes of the *Kidd*, the destroyer has 1 superheavy caliber nuclear missile in each launcher.

Moving on to the battleship, it can carry a weapon of larger caliber and lower. Since we want to make it look like the *Wisconsin,* it is equipped with 3 batteries of 3 heavy caliber neutron guns (although one could certainly make a case that it would be better to mount 2 sets of 4 fire-linked heavy caliber neutron guns instead, we'll stick with the batteries for now). For additional damage-causing capability it adds 4 fire-linked heavy caliber nuclear missile launchers while counting on 40 sets of 2 fire-linked ultralight needle drivers and one lone ultralight needle driver to keep fighters at bay.

Weapon	AP Cost
3 batteries of 3 heavy caliber heavy neutron guns	36
4 fire-linked heavy caliber nuclear missile launchers	16
40 sets of 2 fire-linked ultralight needle drivers	80
1 ultralight needle driver	1

Looking at our resulting destroyer and battleship and comparing them to the *Kidd* and *Wisconsin*, it becomes apparent that we've come pretty close to hitting the mark in terms of weapon distribution. Now it is time to look at how each of these ships will do in combat.

Interjecting Common Sense

Just because a ship is a Superheavy ship does not mean that a colony ship or star freighter can mount the guns of a dreadnought. It must be kept in mind that these ships are built for different purposes. The dreadnought is built for carrying massive amounts of weapons, while the colony ship is built for carrying massive amounts of people, and the star freighter for carrying massive amounts of cargo.

To put it simply, the colony ship or star freighter cannot mount the guns of a dreadnought because the space devoted to guns aboard a dreadnought is taken up by the systems needed to house and support massive amounts of people on board a colony ship and the cargo space aboard a star freighter.

As a result, the rules in this PDF apply only to military vessels (i.e. dreadnoughts) and not to civilian vessels (i.e. colony ships or star freighters); the standard rules should be used as written (i.e. a Superheavy non-military ship receives one weapon for every 150 HD; do not use Armament Points or caliber) to outfit such civilian vessels.

The Ships In Combat

For the purposes of this example, the neutron guns are considered the primary weapons and the other weapons secondary; the ships are otherwise exactly as they are written in the standard rules (i.e. expert crew, targeting system, etc.).

Primary Vs. Secondary Weapons

Before it attacks, a starship designates a primary target (i.e. another battleship, a wing of fighters, etc.). All weapon systems that fire at the primary target are considered to be primary weapons for that series of attacks while any weapon systems that fire at other targets are considered secondary weapons and suffer the standard -5 penalty.

For example, a battleship is fighting another battleship when a wing of enemy fighters enters the scene. For its next attack, the battleship decides that the opposing battleship is the greater threat and designates the battleship as its primary target and opens up with its heavy neutron guns and nuclear missiles on the opposing ship while letting its needle drivers deal with the incoming fighters.

As a result, the neutron guns and nuclear missiles are considered primary weapons and suffer no penalty to their gunnery (the battleship is doing everything it can to maximize their effectiveness) while the needle drivers are the secondary weapons and suffer the standard -5 penalty to their attacks (since it is busy concentrating on the enemy battleship, the battleship cannot also react to the fighters).

Furthermore, it is assumed that the ships are concentrating all of their main weapons (neutron guns and nuclear missiles) on another ship while their needle drivers remain in reserve to ward off fighters (see **Primary Vs. Secondary Weapons** boxed text).

First we'll take a look at the destroyer:

That looks pretty close to what the *Kidd* would have for combat capabilities, with the nuclear missiles (the torpedo substitute) being by far the most potent weapon (although there are only four of these and they can only be fired once each).

Weapon	Range Increment	Damage/Crit.	Attack	Rate Of Fire
4 fire-linked light caliber heavy neutron guns	12,000 feet	40d8 (180)/20	-1 ranged	1/2 rounds
4 light caliber nuclear missile launchers with 1 superheavy nuclear missile each	N/A	256d8 (1,152)/19-20	-1 ranged	once
5 sets of 2 fire-linked ultralight caliber needle drivers	4,000 feet	12d12 (78)/20	-6 ranged	Automatic

Fighter-Bombers

While an ordinary fighter is just as ineffective against a battleship as ever, the ability to carry larger caliber missiles on a missile rack/launcher means that you can now create the classic fighter/bomber combination like the dive bomber and torpedo plane. Simply give the fighter an ultralight missile rack and mount one heavy missile on the rack.

For example, an ordinary fighter armed with an ultralight nuclear missile rack can carry a heavy nuclear missile that does 128d8 (576)/19-20 points of damage instead of eight ultralight nuclear missiles that do 16d8 (72)/19-20 points of damage.

The damage potential is obvious; since every missile is subject to damage reduction the single heavy missile that hits does 546 points of damage (576-30 for the battleship's hardness) whereas even if all eight ultralight missiles hit, they only do 336 points of damage (72-30 for each missile).

Of course, even with this added punch, the best way to use a fighter bomber is in large flights composed of several wings; as each wing flies in, it fires its missiles and then returns to the carrier to reload while the next wing swoops in; assume a reload time of one minute to get a new rack into the launcher once the fighter has landed on the carrier.

Next we'll examine the battleship:

Weapon	Range Increment	Damage/Crit.	Attack	Rate Of Fire
3 Batteries of 3 heavy caliber heavy neutron guns	24,000 ft.	80d8 (360)/19-20	+1 ranged	1/4 rounds
4 sets of 2 fire-linked light caliber heavy neutron guns	12,000 feet	30d8 (135)/20	-1 ranged	1/2 rounds
OR 4 fire-linked heavy caliber nuclear missile launchers with 8 heavy caliber nuclear missiles each	N/A	256d8 (1,152)/19-20	-1 ranged	1/4 rounds
OR 4 fire-linked heavy caliber nuclear missile launchers with 1 oversize2 caliber nuclear missile in each	N/A	2,048d8 (9,216)/19-20	-1 ranged	once
40 sets of 2 fire-linked ultralight caliber needle drivers	4,000 feet	12d12 (78)	-6 ranged	Automatic
1 ultralight caliber needle driver	4,000 feet	9d12 (52)	-6 ranged	Automatic

This too looks pretty close to what the *Wisconsin* would have, although for better accuracy we probably should stick with the light caliber neutron guns instead of the nuclear missile launchers (which were included just for example's sake).

Optional Rule: Broadside

One of the most potent of all battleship tactics is the ability to fire a broadside. In a broadside, a battleship trains all of its main guns on an enemy ship and fires them at once.

In game terms, a broadside can only be fired by multiple batteries of guns all firing at the same target. The effect is that the damage of each battery stacks with that of the others in the broadside.

In addition, a broadside has a greater chance of scoring a critical hit. Regardless of the number of turrets or weapons in the broadside, the threat range is increased by 1. This stacks with the threat range increase for the weapons being in a battery and with other systems that expand a weapon's critical threat range.

So, in the case of the battleship firing a broadside, it would have the following statistics:

Weapon	Range Increment	Damage/Crit.	Attack	Rate Of Fire
Broadside (3 batteries of 3 heavy caliber heavy neutron guns)	24,000 ft.	240d8 (1,080)/18-20	+1 ranged	1/4 rounds

Optional Rule: Wide-Open Starship Design

One of the nice things about space is that you don't have to worry about things like buoyancy, draft, etc., when designing a starship. That means that a starship can be of virtually any design imaginable.

If the GM wishes, he or she can rule that any ship can mount a weapon of any size, providing it has the AP necessary to purchase the weapon. Thus a destroyer with 26 AP could purchase a turret of 4 superheavy quantum cannons for 20 AP and still have some left over.

Of course, by doing this it opens up all manner of possibilities in starship design and the conduct of battle will undoubtedly change in unpredictable ways.

Looking at this the difference in power between the two ships becomes much more apparent than under the standard rules and a combat between a destroyer and a battleship would be carried out much like it would have been in WWII. The destroyer would have to be lucky to get past the battleship's main guns, fire off its torpedoes, and hope for a lucky hit or two, while the battleship would attempt to eliminate the destroyer with its large guns (bringing its smaller guns into play if the destroyer came into range) before the destroyer could launch its torpedoes.

Conclusion

By using the rules in this PDF combined with the standard rules you now have the power to create military starships that are more in line with their historical counterparts and are able to conduct battles more like those one can read about in the history books.

APPENDIX A: RULES SUMMARY

This page summarize all the relevant rules presented in this PDF and can be printed out as an easy reference.

Calibers

There are a total of 8 possible calibers based on the starship types: **ultralight, light, medium, heavy, superheavy, oversize1, oversize2, oversize3.**

The oversize1, oversize2, and oversize3 calibers apply to missiles only.

Caliber Rule

A ship may be equipped with a grappling system or weapon (beam weapon, projectile weapon, missile rack/launcher, or minelayer) of a caliber equal to its type or lower.

Oversize Caliber Rule

For each reduction of the number of missiles in a rack/launcher by one-half, the caliber of each missile in the rack/launcher is increased by one. This process can be repeated up to three times per rack/launcher (i.e. from 8 to 4 to 2 to 1), increasing the caliber of the missiles each time. This does not increase the caliber of the missile rack/launcher.

Remember that this rule may be applied in reverse (a reduction in missile caliber increases the number of missiles on the launcher/rack), allowing more missiles of a smaller caliber to fit on a given missile rack/launcher.

Caliber Application Rule

For every increase in the caliber of a weapon:

-its damage is doubled

-its range increment is increased by its base range increment

-its Purchase DC increases by +2

-and its rate of fire is reduced by one step (i.e. from 1/round to 1/2 rounds; see the Rates Of Fire boxed text for more information).

Rate Of Fire Rule

All weapons except those that have only an autofire setting are treated as single shot weapons for purposes of determining rates of fire as they increase in caliber; weapons that have only an autofire setting cannot increase in caliber.

Armament Point Rule

A starship gets 1 Armament Point (or AP) for every 3 Hit Dice (HD).

AP Weapons Cost

Caliber	**AP Cost**
ultralight	1
light	2
medium	3
heavy	4
superheavy	5

Note that there are no costs for the oversize calibers since they apply only to missiles and those missiles are included in the AP cost of the missile launcher/rack.

APPENDIX B: PL 6 AND PL 7 WEAPONS ADJUSTED FOR CALIBER

This appendix lists all of the standard rules' PL 6 and PL 7 weapons adjusted for the various calibers. The weapons are grouped by Progress Level and each weapon receives its own table.

PL 6 (Fusion Age) Weapons

FUSION BEAM

Caliber	Damage	Critical	Damage Type	Range Increment	Rate of Fire	Min. Ship Size/Type	Purchase DC	Restriction
ultralight	10d8 (45)	20	Energy	3,000 ft.	Single	Gargantuan	33	Res (+2)
light	20d8 (90)	20	Energy	6,000 ft.	1/2 rounds	Light	35	Res (+2)
medium	40d8 (180)	20	Energy	9,000 ft.	1/3 rounds	Medium	37	Res (+2)
heavy	80d8 (360)	20	Energy	12,000 ft.	1/4 rounds	Heavy	39	Res (+2)
superheavy	160d8 (720)	20	Energy	15,000 ft.	1/5 rounds	Superheavy	41	Res (+2)

GAUSS GUN

Caliber	Damage	Critical	Damage Type	Range Increment	Rate of Fire	Min. Ship Size/Type	Purchase DC	Restriction
ultralight	8d12 (52)	20	Ballistic	4,000 ft.	Single[1]	Gargantuan	35	Res (+2)
light	16d12 (104)	20	Ballistic	8,000 ft.	1/2 rounds	Light	37	Res (+2)
medium	32d12 (208)	20	Ballistic	12,000 ft.	1/3 rounds	Medium	39	Res (+2)
heavy	64d12 (416)	20	Ballistic	16,000 ft.	1/4 rounds	Heavy	41	Res (+2)
superheavy	128d12 (832)	20	Ballistic	20,000 ft.	1/5 rounds	Superheavy	43	Res (+2)

[1]weapon can be modified for semiautomatic or automatic fire mode.

LASER

Caliber	Damage	Critical	Damage Type	Range Increment	Rate of Fire	Min. Ship Size/Type	Purchase DC	Restriction
ultralight	6d8 (27)	20	Energy	3,000 ft.	Single[1]	Huge	28	Lic (+1)
light	12d8 (54)	20	Energy	6,000 ft.	1/2 rounds	Light	30	Lic (+1)
medium	24d8 (108)	20	Energy	9,000 ft.	1/3 rounds	Medium	32	Lic (+1)
heavy	48d8 (216)	20	Energy	12,000 ft.	1/4 rounds	Heavy	34	Lic (+1)
superheavy	96d8 (432)	20	Energy	15,000 ft.	1/5 rounds	Superheavy	36	Lic (+1)

[1]weapon can be modified for semiautomatic or automatic fire mode.

LASER, HEAVY

Caliber	Damage	Critical	Damage Type	Range Increment	Rate of Fire	Min. Ship Size/Type	Purchase DC	Restriction
ultralight	8d8 (36)	20	Energy	4,000 ft.	Single	Huge	28	Res (+2)
light	16d8 (72)	20	Energy	8,000 ft.	1/2 rounds	Light	30	Res (+2)
medium	32d8 (144)	20	Energy	12,000 ft.	1/3 rounds	Medium	32	Res (+2)
heavy	64d8 (288)	20	Energy	16,000 ft.	1/4 rounds	Heavy	34	Res (+2)
superheavy	128d8 (576)	20	Energy	20,000 ft.	1/5 rounds	Superheavy	36	Res (+2)

MINE, FUSION[2]

Caliber	Damage	Critical	Damage Type	Range Increment	Rate of Fire	Min. Ship Size/Type	Purchase DC	Restriction
ultralight	5d100 (275)	—	Energy	—	—	Colossal	33	Mil (+3)

[2]weapon is always of ultralight caliber, cannot be increased in caliber, and costs 1 AP.

MISSILE, CHE

Caliber	Damage	Critical	Damage Type	Range Increment	Rate of Fire	Min. Ship Size/Type	Purchase DC	Restriction
ultralight	6d12 (39)	19–20	Ballistic	—	Single	Gargantuan	25[3]	Mil (+3)
light	12d12 (78)	19–20	Ballistic	—	1/2 rounds	Light	27[3]	Mil (+3)
medium	24d12 (156)	19–20	Ballistic	—	1/3 rounds	Medium	29[3]	Mil (+3)
heavy	48d12 (312)	19–20	Ballistic	—	1/4 rounds	Heavy	31[3]	Mil (+3)
superheavy	96d12 (624)	19–20	Ballistic	—	1/5 rounds	Superheavy	33[3]	Mil (+3)
oversize1*	192d12 (1,248)	19–20	Ballistic	—	1/6 rounds	—	—	Mil (+3)
oversize2*	384d12 (2,496)	19–20	Ballistic	—	1/7 rounds	—	—	Mil (+3)
oversize3*	768d12 (4,992)	19–20	Ballistic	—	1/8 rounds	—	—	Mil (+3)

[3]purchase DC includes basic launch system (missile rack or tube) and 8 missiles for the launcher's type (which can be substituted for larger or smaller caliber missiles). The purchase DC is 2 lower without the launch system.

*These are not calibers for launchers, but for the missiles, which are included in the price of the appropriate rack; i.e. a superheavy launcher with one oversize3 missile has a purchase DC of 33; a superheavy rack with one oversize3 missile has a purchase DC of 31.

MISSILE, KE SUBMUNITION

Caliber	Damage	Critical	Damage Type	Range Increment	Rate of Fire	Min. Ship Size/Type	Purchase DC	Restriction
ultralight	4d12 (26)	19–20	Ballistic	—	Single	Gargantuan	22[3]	Lic (+1)
light	8d12 (52)	19–20	Ballistic	—	1/2 rounds	Light	24[3]	Lic (+1)
medium	16d12 (104)	19–20	Ballistic	—	1/3 rounds	Medium	26[3]	Lic (+1)
heavy	32d12 (208)	19–20	Ballistic	—	1/4 rounds	Heavy	28[3]	Lic (+1)
superheavy	64d12 (416)	19–20	Ballistic	—	1/5 rounds	Superheavy	30[3]	Lic (+1)
oversize1*	128d12 (832)	19–20	Ballistic	—	1/6 rounds	—	—	Lic (+1)
oversize2*	256d12 (1,664)	19–20	Ballistic	—	1/7 rounds	—	—	Lic (+1)
oversize3*	512d12 (3,328)	19–20	Ballistic	—	1/8 rounds	—	—	Lic (+1)

[3]purchase DC includes basic launch system (missile rack or tube) and 8 missiles for the launcher's type (which can be substituted for larger or smaller caliber missiles at the same price). The purchase DC is 2 lower without the launch system.

*These are not calibers for launchers, but for the missiles, which are included in the price of the appropriate rack; i.e. a superheavy launcher with one oversize3 missile has a purchase DC of 33; a superheavy rack with one oversize3 missile has a purchase DC of 31.

MISSILE, NUCLEAR

Caliber	Damage	Critical	Damage Type	Range Increment	Rate of Fire	Min. Ship Size/Type	Purchase DC	Restriction
ultralight	16d8 (72)	19–20	Ballistic	—	Single	Gargantuan	22[3]	Lic (+1)
light	32d8 (144)	19–20	Ballistic	—	1/2 rounds	Light	24[3]	Lic (+1)
medium	64d8 (288)	19–20	Ballistic	—	1/3 rounds	Medium	26[3]	Lic (+1)
heavy	128d8 (576)	19–20	Ballistic	—	1/4 rounds	Heavy	28[3]	Lic (+1)
superheavy	256d8 (1,152)	19–20	Ballistic	—	1/5 rounds	Superheavy	30[3]	Lic (+1)
oversize1*	512d8 (2,304)	19–20	Ballistic	—	1/6 rounds	—	—	Lic (+1)
oversize2*	1,024d8 (4,608)	19–20	Ballistic	—	1/7 rounds	—	—	Lic (+1)
oversize3*	2,048d8 (9,216)	19–20	Ballistic	—	1/8 rounds	—	—	Lic (+1)

[3]purchase DC includes basic launch system (missile rack or tube) and 8 missiles for the launcher's type (which can be substituted for larger or smaller caliber missiles at the same price). The purchase DC is 2 lower without the launch system.

*These are not calibers for launchers, but for the missiles, which are included in the price of the appropriate rack; i.e. a superheavy launcher with one oversize3 missile has a purchase DC of 33; a superheavy rack with one oversize3 missile has a purchase DC of 31.

NEEDLE DRIVER[2]

Caliber	Damage	Critical	Damage Type	Range Increment	Rate of Fire	Min. Ship Size/Type	Purchase DC	Restriction
ultralight	8d12 (52)	20	Ballistic	4,000 ft.	A	Gargantuan	36	Lic (+1)

[2]weapon is always of ultralight caliber, cannot be increased in caliber, and costs 1 AP.

NEUTRON GUN

Caliber	Damage	Critical	Damage Type	Range Increment	Rate of Fire	Min. Ship Size/Type	Purchase DC	Restriction
ultralight	6d8 (27)	20	Energy	5,000 ft.	Single	Colossal	31	Mil (+3)
light	12d8 (54)	20	Energy	10,000 ft.	1/2 rounds	Light	33	Mil (+3)
medium	24d8 (108)	20	Energy	15,000 ft.	1/3 rounds	Medium	35	Mil (+3)
heavy	48d8 (216)	20	Energy	20,000 ft.	1/4 rounds	Heavy	37	Mil (+3)
superheavy	96d8 (432)	20	Energy	25,000 ft.	1/5 rounds	Superheavy	39	Mil (+3)

NEUTRON GUN, HEAVY

Caliber	Damage	Critical	Damage Type	Range Increment	Rate of Fire	Min. Ship Size/Type	Purchase DC	Restriction
ultralight	10d8 (45)	20	Energy	6,000 ft.	Single	Colossal	35	Mil (+3)
light	20d8 (90)	20	Energy	12,000 ft.	1/2 rounds	Light	37	Mil (+3)
medium	40d8 (180)	20	Energy	18,000 ft.	1/3 rounds	Medium	39	Mil (+3)
heavy	80d8 (360)	20	Energy	24,000 ft.	1/4 rounds	Heavy	41	Mil (+3)
superheavy	160d8 (720)	20	Energy	30,000 ft.	1/5 rounds	Superheavy	43	Mil (+3)

RAIL CANNON

Caliber	Damage	Critical	Damage Type	Range Increment	Rate of Fire	Min. Ship Size/Type	Purchase DC	Restriction
ultralight	6d12 (39)	20	Ballistic	3,000 ft.	Single[1]	Gargantuan	30	Lic (+1)
light	12d12 (78)	20	Ballistic	6,000 ft.	1/2 rounds	Light	32	Lic (+1)
medium	24d12 (156)	20	Ballistic	9,000 ft.	1/3 rounds	Medium	34	Lic (+1)
heavy	48d12 (312)	20	Ballistic	12,000 ft.	1/4 rounds	Heavy	36	Lic (+1)
superheavy	96d12 (624)	20	Ballistic	15,000 ft.	1/5 rounds	Superheavy	38	Lic (+1)

[1]weapon can be modified for semiautomatic or automatic fire mode.

PL 7 (Gravity Age) Weapons

Antimatter Gun

Caliber	Damage	Critical	Damage Type	Range Increment	Rate of Fire	Min. Ship Size/Type	Purchase DC	Restriction
ultralight	10d8 (45)	20	Energy	5,000 ft.	Single	Colossal	38	Mil (+3)
light	20d8 (90)	20	Energy	10,000 ft.	1/2 rounds	Light	40	Mil (+3)
medium	40d8 (180)	20	Energy	15,000 ft.	1/3 rounds	Medium	42	Mil (+3)
heavy	80d8 (360)	20	Energy	20,000 ft.	1/4 rounds	Heavy	44	Mil (+3)
superheavy	160d8 (720)	20	Energy	25,000 ft.	1/5 rounds	Superheavy	46	Mil (+3)

Mass Cannon

Caliber	Damage	Critical	Damage Type	Range Increment	Rate of Fire	Min. Ship Size/Type	Purchase DC	Restriction
ultralight	8d12 (52)	20	Ballistic	5,000 ft.	Single	Gargantuan	37	Lic (+1)
light	16d12 (104)	20	Ballistic	10,000 ft.	1/2 rounds	Light	39	Lic (+1)
medium	32d12 (208)	20	Ballistic	15,000 ft.	1/3 rounds	Medium	41	Lic (+1)
heavy	64d12 (416)	20	Ballistic	20,000 ft.	1/4 rounds	Heavy	43	Lic (+1)
superheavy	128d12 (832)	20	Ballistic	25,000 ft.	1/5 rounds	Superheavy	45	Lic (+1)

Mass Cannon, Heavy

Caliber	Damage	Critical	Damage Type	Range Increment	Rate of Fire	Min. Ship Size/Type	Purchase DC	Restriction
ultralight	10d12 (65)	20	Ballistic	6,000 ft.	Single	Colossal	40	Res (+2)
light	20d12 (130)	20	Ballistic	12,000 ft.	1/2 rounds	Light	42	Res (+2)
medium	40d12 (260)	20	Ballistic	18,000 ft.	1/3 rounds	Medium	43	Res (+2)
heavy	80d12 (520)	20	Ballistic	24,000 ft.	1/4 rounds	Heavy	45	Res (+2)
superheavy	160d12 (1,040)	20	Ballistic	30,000 ft.	1/5 rounds	Superheavy	47	Res (+2)

Mine, Gravitic[2]

Caliber	Damage	Critical	Damage Type	Range Increment	Rate of Fire	Min. Ship Size/Type	Purchase DC	Restriction
ultralight	10d100 (550)	—	Energy	—	—	Colossal	43	Mil (+3)

[2]weapon is always of ultralight caliber, cannot be increased in caliber, and costs 1 AP.

Missile, Mass Reaction

Caliber	Damage	Critical	Damage Type	Range Increment	Rate of Fire	Min. Ship Size/Type	Purchase DC	Restriction
ultralight	20d8 (90)	19–20	Ballistic	—	Single	Colossal	50[3]	Mil (+3)
light	40d8 (180)	19–20	Ballistic	—	1/2 rounds	Light	52[3]	Mil (+3)
medium	80d8 (360)	19–20	Ballistic	—	1/3 rounds	Medium	54[3]	Mil (+3)
heavy	160d8 (720)	19–20	Ballistic	—	1/4 rounds	Heavy	56[3]	Mil (+3)
superheavy	320d8 (1,440)	19–20	Ballistic	—	1/5 rounds	Superheavy	58[3]	Mil (+3)
oversize1*	640d8 (2,880)	19–20	Ballistic	—	1/6 rounds	—	—	Mil (+3)
oversize2*	1,280d8 (5,760)	19–20	Ballistic	—	1/7 rounds	—	—	Mil (+3)
oversize3*	2,560d8 (11,520)	19–20	Ballistic	—	1/8 rounds	—	—	Mil (+3)

[3]purchase DC includes basic launch system (missile rack or tube) and 8 missiles for the launcher's type (which can be substituted for larger or smaller caliber missiles at the same price). The purchase DC is 2 lower without the launch system.

*These are not calibers for launchers, but for the missiles, which are included in the price of the appropriate rack; i.e. a superheavy launcher with one oversize3 missile has a purchase DC of 33; a superheavy rack with one oversize3 missile has a purchase DC of 31.

MISSILE, PLASMA

Caliber	Damage	Critical	Damage Type	Range Increment	Rate of Fire	Min. Ship Size/Type	Purchase DC	Restriction
ultralight	18d8 (81)	19–20	Fire	—	Single	Gargantuan	46[3]	Res (+2)
light	36d8 (162)	19–20	Fire	—	1/2 rounds	Light	48[3]	Res (+2)
medium	72d8 (324)	19–20	Fire	—	1/3 rounds	Medium	50[3]	Res (+2)
heavy	144d8 (648)	19–20	Fire	—	1/4 rounds	Heavy	52[3]	Res (+2)
superheavy	288d8 (1,296)	19–20	Fire	—	1/5 rounds	Superheavy	54[3]	Res (+2)
oversize1*	576d8 (2,592)	19–20	Fire	—	1/6 rounds	—	—	Res (+2)
oversize2*	1,152d8 (5,184)	19–20	Fire	—	1/7 rounds	—	—	Res (+2)
oversize3*	2,304d8 (10,368)	19–20	Ballistic	—	1/8 rounds	—	—	Res (+2)

[3]purchase DC includes basic launch system (missile rack or tube) and 8 missiles for the launcher's type (which can be substituted for larger or smaller caliber missiles at the same price). The purchase DC is 2 lower without the launch system.

*These are not calibers for launchers, but for the missiles, which are included in the price of the appropriate rack; i.e. a superheavy launcher with one oversize3 missile has a purchase DC of 33; a superheavy rack with one oversize3 missile has a purchase DC of 31.

PARTICLE BEAM

Caliber	Damage	Critical	Damage Type	Range Increment	Rate of Fire	Min. Ship Size/Type	Purchase DC	Restriction
ultralight	12d8 (54)	20	Energy	4,000 ft.	Single	Gargantuan	36	Res (+2)
light	24d8 (108)	20	Energy	8,000 ft.	1/2 rounds	Light	38	Res (+2)
medium	48d8 (216)	20	Energy	12,000 ft.	1/3 rounds	Medium	40	Res (+2)
heavy	96d8 (432)	20	Energy	16,000 ft.	1/4 rounds	Heavy	42	Res (+2)
superheavy	192d8 (864)	20	Energy	20,000 ft.	1/5 rounds	Superheavy	44	Res (+2)

PARTICLE BEAM, HEAVY

Caliber	Damage	Critical	Damage Type	Range Increment	Rate of Fire	Min. Ship Size/Type	Purchase DC	Restriction
ultralight	16d8 (72)	20	Energy	5,000 ft.	Single	Gargantuan	39	Res (+2)
light	32d8 (144)	20	Energy	10,000 ft.	1/2 rounds	Light	41	Res (+2)
medium	64d8 (288)	20	Energy	15,000 ft.	1/3 rounds	Medium	43	Res (+2)
heavy	128d8 (576)	20	Energy	20,000 ft.	1/4 rounds	Heavy	45	Res (+2)
superheavy	256d8 (1,152)	20	Energy	25,000 ft.	1/5 rounds	Superheavy	47	Res (+2)

PLASMA CANNON

Caliber	Damage	Critical	Damage Type	Range Increment	Rate of Fire	Min. Ship Size/Type	Purchase DC	Restriction
ultralight	14d8 (63)	20	Fire	3,000 ft.	Single[1]	Gargantuan	36	Lic (+1)
light	28d8 (126)	20	Fire	6,000 ft.	1/2 rounds	Light	38	Lic (+1)
medium	56d8 (252)	20	Fire	9,000 ft.	1/3 rounds	Medium	40	Lic (+1)
heavy	112d8 (504)	20	Fire	12,000 ft.	1/4 rounds	Heavy	42	Lic (+1)
superheavy	224d8 (1,008)	20	Fire	15,000 ft.	1/5 rounds	Superheavy	44	Lic (+1)

[1]weapon can be modified for semiautomatic or automatic fire mode.

PLASMA CANNON, HEAVY

Caliber	Damage	Critical	Damage Type	Range Increment	Rate of Fire	Min. Ship Size/Type	Purchase DC	Restriction
ultralight	18d8 (81)	20	Fire	4,000 ft.	Single[1]	Colossal	36	Res (+2)
light	36d8 (162)	20	Fire	8,000 ft.	1/2 rounds	Light	38	Res (+2)
medium	72d8 (324)	20	Fire	12,000 ft.	1/3 rounds	Medium	40	Res (+2)
heavy	144d8 (648)	20	Fire	16,000 ft.	1/4 rounds	Heavy	42	Res (+2)
superheavy	288d8 (1,296)	20	Fire	20,000 ft.	1/5 rounds	Superheavy	44	Res (+2)

[1]weapon can be modified for semiautomatic or automatic fire mode.

QUANTUM CANNON

Caliber	Damage	Critical	Damage Type	Range Increment	Rate of Fire	Min. Ship Size/Type	Purchase DC	Restriction
ultralight	16d8 (72)	20	Energy	6,000 ft.	Single[1]	Gargantuan	41	Res (+2)
light	32d8 (144)	20	Energy	12,000 ft.	1/2 rounds	Light	43	Res (+2)
medium	64d8 (288)	20	Energy	18,000 ft.	1/3 rounds	Medium	45	Res (+2)
heavy	128d8 (576)	20	Energy	24,000 ft.	1/4 rounds	Heavy	47	Res (+2)
superheavy	256d8 (1,152)	20	Energy	30,000 ft.	1/5 rounds	Superheavy	49	Res (+2)

APPENDIX C: DESIGN GUIDE

While the instructions in the PDF are written to be as clear and concise as possible, it never hurts to have one more example on how to use the rules in this PDF to create starship weaponry.

For this example I will use the standard rules' battle cruiser, the statistics of which are included below for ease of reference:

BATTLE CRUISER (PL 7)

Type: Heavy
Subtype: Battle Cruiser
Defense: 11
Flat-footed Defense: 7
Autopilot Defense: 7
Hardness: 30
Hit Dice: 450d20 (9,000 hp)
Initiative Modifier: +4
Pilot's Class Bonus: +5
Pilot's Dex Modifier: +4
Gunner's Attack Bonus: +4

Size: Colossal (–8 size)
Tactical Speed: 4,000 ft. (8 sq.)
Length: 1,360 feet
Weight: 140,000 tons
Targeting System Bonus: +5
Crew: 320 (expert +8)
Passenger Capacity: 160
Cargo Capacity: 50,000 tons
Grapple Modifier: +16
Base Purchase DC: 72
Restriction: Military (+3)

Attack: 4 fire-linked heavy particle beams +1 ranged (32d8) and 1 battery of 3 plasma missiles –2 ranged (18d8/18–20)

Attack of Opportunity: Point-defense +5 ranged (4d12_10)

STANDARD PL 7 DESIGN SPECS:

Engines: Particle impulse engine, thrusters

Armor: Cerametal

Defense Systems: 1 chaff launcher (8 chaff bundles), 1 decoy drone launcher (4 drones), improved autopilot, improved damage control (5d10), magnetic field, particle field, radiation shielding, self-destruct system

Sensors: Class IV sensor array, improved targeting system

Communications: Drivesat comm array, mass transceiver

Weapons: 4 fire-linked heavy particle beams (range incr. 5,000 ft.), 1 battery of 3 plasma missile launchers (16 missiles each), 1 minelayer (50 gravitic mines with displacers, magnetic fields, and particle fields; 10d10_10 damage)

Grappling Systems: Tractor beam emitter

A Reminder

Before beginning the process you need to remember that the only thing about the battle cruiser that will change is its **Attack** and **Weapons** sections (and the **Purchase DC** if you feel like adjusting it for the large number of weapons on it). Everything else, from **Hit Dice** and **Defense** to **Engines** and **Grappling Systems** will remain the same.

Step 1: Determining AP

A starship receives 1 Armament Point (AP) for every 3 Hit Dice. Since the battle cruiser has 450 Hit Dice, it receives 150 AP.

Step 2: Deciding On A Build Strategy

The build strategy depends entirely on what kind of starship battles occur. If there are many large fleet engagements involving multiples of starships acting in concert, a battle cruiser may become simply a platform for big guns and missiles, counting on smaller allied ships to protect it at closer ranges and while its weapons reload/recharge. If the starship battles tend to be more of small groups, or even individual starships, battling it out, the design should be a little more balanced, with weapons to not only fight the big ships, but also to deal with smaller vessels and fighters.

The idea behind the design of this particular battle cruiser is much like that of the famous German battleship *Bismarck*, to create a powerful ship that is able to effectively conduct virtually any operation on its own.

As a result, the ship will be outfitted with a variety of guns as well as missile launchers, minelayers, grappling systems, and a wing of aircraft. Striving for this all around capability is also a handy way to cover all the rules in this PDF.

Step 3: Buying Weapons And Equipment

Throughout this step, we'll be keeping track of the amount of AP left. We'll begin with 150 AP.

While the weapons and equipment can be bought in any order, I prefer to buy the ancillary equipment; i.e. fighters, grappling systems,

Step 3a: Buying Fighters

The first thing we are going to do is equip the battle cruiser with a wing of four assault fighters, which will be chiefly used for scouting missions and for chasing after small targets. These assault fighters are going to be identical in equipment to the ones presented in the standard rules. Remember that the fighters have their own AP (each has 3 AP for its 9 HD) and that these AP count against the battle cruiser's total AP. Also note that right now it isn't important what the assault fighters have for weapons (we can spend their 3 AP later); the only thing that matters to the battle cruiser design is how many AP those assault fighters cost.

Since there are 4 assault fighters and each costs 3 AP, that's a total of 12 AP. So we have 138 AP left.

Step 3b: Buying Mines

Next we'll be buying some mines. Since minelayers are relatively inexpensive at 1 AP per, the battle cruiser will receive 6 minelayers. This is enough to cover two rows of 3 500-foot squares that the battle cruiser occupies (see the **Optional Rule: Deploying Multiple Mines** boxed text) as well as to deploy the maximum allowable 4 mines in a single 500-foot square in one attack action.

The standard rules battle cruiser is equipped with 50 gravitic mines for its sole mine layer, so we'll choose the same number and type for each of our battle cruiser's 6 minelayers (giving it 300 gravitic mines total and taking up 30,000 tons of the battle cruiser's cargo space).

6 mine layers at 1 AP apiece makes 6 AP total, so we have 132 AP left.

STEP 3C: BUYING GRAPPLING SYSTEMS

Grappling systems are handy for recovery as well as grappling smaller ships (especially fighters) in combat. I like using the second option for grappling systems (see the **What About Grappling Systems?**) because a larger grappling system should be more powerful than a smaller one.

In this case, the battle cruiser will receive 2 heavy caliber tractor beam emitters (each of which provides a +28 special grapple bonus), which, since they are heavy caliber, cost 4 AP each.

2 tractor beam emitters at 4 AP apiece makes 8 AP total, so we have 124 AP left.

STEP 3D: BUYING MISSILES

Okay, now we start getting to the heavy hitters. Missiles have the capability of being truly devastating. However, unlike projectile or beam weapons, they are a finite quantity; once the last missile has been used, that's it. Given that this battle cruiser is expected to operate for long stretches of time on its own, getting resupplied with missiles may prove a little tricky. It's almost tempting to not buy any missiles at all, but that would be giving up some major damage potential.

Now, since it is a Heavy ship, the largest missile launcher that our battle cruiser can mount is of heavy caliber. However, the largest missile it can carry in that launcher/rack is an oversize2 caliber (see the **Oversize Calibers** section).

We'll equip our battle cruiser with 4 variable fire-linked heavy caliber mass reaction missile launchers, which cost 4 AP apiece. The reason for the variable fire-link is so that the ship's captain can make the most flexible use of his or her weaponry.

With these launchers comes a rack of missiles, and we are going to go for the big bang here and say that each launcher comes with one oversize2 mass reaction missile (thus causing one big explosion if it hits).

However, in order to deal with smaller enemies, the battle cruiser will also get a second rack for each launcher. Each of these racks will carry 16 heavy caliber mass reaction missiles and costs 4 AP apiece (although their Purchase DC is reduced by 2).

4 heavy caliber missile launchers and 4 heavy caliber missile racks at 4 AP apiece each totals 32 AP; we have 92 AP left.

STEP 3E: BUYING GUNS

Admittedly, this is my favorite part. Since we have 94 AP left, we can buy quite a few guns here, so let's take a moment to figure out just how we want to distribute them. While it is tempting to buy a whole slew of heavy caliber guns, their slow reload/recharge rate makes this a bad choice if the battle cruiser is facing a lot of other ships, especially fighters.

Still, let's start with 8 of the biggest and most powerful guns we can get, the heavy caliber heavy plasma cannon. These guns will be the battle cruiser's primary weapons and, like the missiles, we'll put them in a variable fire-link for maximum flexibility.

These guns cost 4 AP apiece and there are 8 of them, so we've used up 32 more AP leaving us with 60 AP.

We'll need some guns with a quicker rate of fire to cover the middle ranges, so we are going to get another 8 guns, but this time we'll make them light caliber heavy mass cannons because they have a longer base range increment and are great against deflective armor.

These guns cost 2 AP apiece, there are 8 of them, so we've spent another 16 AP leaving us with 44 AP.

We'll spend the remaining money on guns designed to fight fighters. Since fighters can be very difficult to hit, we'll have to do what we can to increase the chances of these guns hitting, so we'll group them into batteries of 4 guns each. At 1 AP per gun, we can afford a total of 11 such batteries. As to the guns, we'll go with ballistic weapons since the standard rules assault fighters have deflective armor.

While it is tempting to use autofire guns since they cover such a large area, the fact that the Pilot check DC is 15 means that an Ace pilot (+12 on skill checks) has a pretty good chance of avoiding their fire.

So we'll buy 44 ultralight caliber heavy mass cannons at 1 AP apiece for a total of 44 AP leaving us with 0 AP.

Step 4: Writing Up The Information

Now that we've figured out the weaponry of our battle cruiser, it's time to see what all these weapons look like written up. Keep in mind that the only things on the battle cruiser that have changed are the **Attack** and **Weapons** sections of the statblock.

Keep in mind that, as you look over these sections, you'll see that I've listed all the possible options for each weapon and that this ship also represents a demonstration of what can be done when the rules of this PDF are combined with the standard rules and, as such, covers all the bases; for instance, replacing the variable fire-link with a standard fire-link removes a number of options.

Attack

8 variable fire-linked heavy caliber heavy plasma cannon +1 ranged
8 heavy caliber heavy plasma cannons (1/4 rounds; 360d8 (1,620)) or
4 heavy caliber heavy plasma cannons (1/4 rounds; 288d8 (1,296)) or
2 heavy caliber heavy plasma cannons (1/4 rounds; 216d8 (972)) or
1 heavy caliber heavy plasma cannon (1/4 rounds; 144d8 (648))
8 variable fire-linked light caliber heavy mass cannon -4 ranged
8 light caliber heavy mass cannons (1/2 rounds; 50d12 (325)) or
4 light caliber heavy mass cannons (1/2 rounds; 40d12 (260)) or
2 light caliber heavy mass cannons (1/2 rounds; 30d12 (195)) or
1 light caliber heavy mass cannon (1/2 rounds; 20d12 (130))
11 batteries of 4 ultralight caliber heavy mass cannons -1 ranged
battery of 4 ultralight caliber heavy mass cannons (single; 10d12 (65)/19-20) or
2 battery broadside (single, 20d12 (130)/18-20) or
3 battery broadside (single, 30d12 (195)/18-20) or
4 battery broadside (single, 40d12 (260)/18-20) or
5 battery broadside (single, 50d12 (325)/18-20) or
6 battery broadside (single, 60d12 (390)/18-20) or
7 battery broadside (single, 70d12 (455)/18-20) or
8 battery broadside (single, 80d12 (520)/18-20) or
9 battery broadside (single, 90d12 (585)/18-20) or
10 battery broadside (single, 100d12 (650)/18-20) or
11 battery broadside (single, 110d12 (715)/18-20)
4 variable fire-linked heavy caliber mass reaction missile launchers -4 ranged
4 oversize2 caliber mass reaction missiles (1/7 rounds; 2,560d8/19-20 (11,520)) or
2 oversize2 caliber mass reaction missiles (1/7 rounds; 1920d8/19-20 (8,640)) or
1 oversize2 caliber mass reaction missile (1/7 rounds; 1,280d8/19-20 (5,760)) or
4 heavy caliber mass reaction missiles (1/4 rounds; 320d8/19-20 (1,440)) or
2 heavy caliber mass reaction missiles (1/4 rounds; 240d8/19-20 (1,080)) or
1 heavy caliber mass reaction missile (1/4 rounds; 160d8/19-20 (720))

Note: these attack numbers assume that the heavy plasma cannons only are used as the primary attack (see the **Primary Vs. Secondary Weapons** boxed text).

Weapons

8 variable fire-linked heavy caliber heavy plasma cannon (range incr. 16,000 ft.)

8 variable fire-linked light caliber heavy mass cannons (range incr. 12,000 ft.)

11 batteries of 4 ultralight caliber heavy mass cannons (range incr. 6,000 ft.)

4 variable fire-linked heavy caliber mass reaction missile launchers (1 oversize2 caliber missile and 16 heavy caliber missiles each)

6 minelayers (50 gravitic mines with displacers, magnetic fields, and particle fields; 10d10_10 damage; each)

Now, admittedly, all this can seem a little overwhelming at first, but with a little practice it is actually surprisingly quick and easy (although never as quick and easy as sticking with the standard rules) to create even the biggest dreadnought.