

FOREWORD

It shows the the strength of the STARFIRE gaming system that it has lasted twenty-five years through four editions and is still going strong in a world it shares with (sometimes) high-quality, instant gratification computer games. Although the latest of those four editions is Galactic Starfire, created by the Starfire Design Studio, this supplement is concerned solely with the Revised Third Edition of Starfire.

The recent history of Starfire editions is a little confused so some background is in order. The original Third Edition Starfire was created in 1992 by David Weber, author of the Honor Harrington series and several Starfire books such as Crusade, Insurrection and In Death Ground. Third Edition Starfire consisted of the tactical rulebook, the campaign rulebook, Imperial Starfire, plus four supplements entitled First Contact, Stars At War, Crusade and Alkelda Dawn.

Several years later the ownership of Starfire passed to Marvin Lamb, who at the time was the head of the Starfire Design Studio, an ideal role from which to guide Starfire forward.

In 1997, The Starfire Design Studio (SDS) produced Sky Marshal #2 which modified large parts of Imperial Starfire to produce a more balanced and less paperwork-intensive campaign system. It also contained some tactical rule updates and helped reconcile the issues provoked by the Alkelda Dawn rulebook, which contained very different technology than that found in the rest of the rules.

1998 was a busy year with the biggest supplement to date, Interstellar War 4, followed by a complete update of the Tactical Rulebook which became known as Third Edition Revised and finally Insurrection, which told the story of the Terran Civil War.

Although there was now a lot of available material for 3rdR it was scattered across several sources and there was never any consolidated Third Edition Revised Rulebook. However a rough guide as to what may be found where is as follows:

- **Tactical Rules:** 3rd Edition Revised Tactical Rules
- **Campaign Rules:** Imperial Starfire & Sky Marshal #2, with the latter superseding substantial parts of the former.
- **Tech Systems:** TL1-9 Third Edition Revised Tactical Rules, TL10-11 Imperial Starfire and Crusade, TL12-13 ISW-4 TL14-15 Insurrection. (although Crusade and ISW-4 contain several new or updated lower TL systems).

Collectively these various rulebooks and supplements became known as 3rdR/SM#2 or just simply 3rdR. Once Fourth Edition was released, all SDS work on 3rdR naturally ceased and the official future of Starfire lies with Fourth Edition and its forthcoming supplements. However, there are a lot of ongoing 3rdR campaigns and, for various reasons, new 3rdR campaigns are still starting despite the availability of Fourth Edition.

My own reasons for still playing 3rdR are threefold. Firstly, my own Rigellian campaign has been running for four years and Fourth Edition is substantially different from Third, preventing any upgrade in place. Secondly, I have spent countless hundreds of hours on a computer play-aid for 3rdR called Starfire Assistant which handles all of the campaign paperwork, produces maps and reports and assists with combat. Upgrading this would be a massive task. Thirdly, I like using all the tech systems from the fiction associated with Third Edition, including that in the supplements (almost novel-length in the case of ISW-4) and some of David Weber's books. None of these reasons detract from the quality and playability of Fourth Edition, they are just personal preferences.

The object of this supplement is to cater to those players like myself who still have an active interest in 3rdR. Although the Insurrection supplement covers some TL14 and TL15 systems,

there are very few of them, which means 3rdR tech progression effectively halts around TL13. As the highest tech race in my own campaign is at TL12, I am soon going to have a problem.

I decided that in the absence of any more official supplements I would create my own unofficial supplement (US#1) which would deal primarily with Tech Levels fourteen through to sixteen. I am well aware of the balance problems associated with the creation of super-weapons, which usually seem like a good idea at the time but end up completely changing the nature of the game.

Therefore I have tried to remain faithful to the intent of the original designers and restricted myself to systems which in most cases are extrapolations of existing technology, such as the Third Generation Capital Force Beam. All of the extrapolated systems follow the trends of earlier generations and if anything I have erred on the side of caution when it comes to the power of new technology.

There are a few new items which can be introduced to the game without too much concern over game balance, including systems which appear to be missing from the existing tech progression such as early gunboats, plus a few suggested changes to the existing rules where play experience has shown a system to be too weak or too powerful.

I am also including some rules for generating multi-system non-player races as the existing NPR rules will not produce a challenge for players later in the game.

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My website also contains all the downloads and a version history for Starfire Assistant plus the Rigellian Diary, a 430 page history of the main race in the Rigellian campaign.

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US1: MULTI-SYSTEM NPRS

As a 3rdR campaign progresses the player races get larger and more powerful and any newly generated Non-Player-Races provide no more than a tasty snack. Therefore, a couple of years ago I created some rules for mid or late game, multi-system NPRs. Several people have asked for these rules so I thought I would include them in US#1 and let people use them or modify them as required.

US1.1 The amount of starting PU rolled for the NPR homeworld is increased by half a percent multiplied by the current game turn. *e.g. after eighty turns, the amount of PU generated for the NPR homeworld is increase by forty percent.*

US1.2 When making the System Exploitation Roll for the NPR, divide the current game turn by two (FRU) and add the resulting number to result of the roll.

US1.3 In addition to the normal six turns of income which forms an NPR's starting fund, The NPR gains a number of turns of extra income equal to the current game turn divided by ten (retaining fractions).

US1.4 The NPR Fleet is limited to a size where the total maintenance as a percentage of income is no greater than the warship percentage from the starting fund. If this means that a race cannot spend all of its warship fund, it may spend the money on bases (not space stations) to bring down the maintenance cost.

US1.5 The NPRs Mothballed Fleet is limited to a cost equal to that of the active fleet

US1.6 If there is still money in the Warship Fund after following the above rules, add it to the Freighter Fund.

US1.7 If the system exploitation roll exceeds 120%, money from the Freighter Fund may be spent on unarmed survey ships which do not count against the maintenance limit above.

US1.8 If the system exploitation roll exceeds 120% the race has discovered warp points prior to first contact and has explored nearby systems. For every 30% above 120% (FRU), the NPR has explored one transit out from their homeworld. The outer ring of systems will have system body surveys but not warp point surveys.

e.g. A race with a roll of 160% will have explored two transits out but will only have carried out WP surveys for those systems one transit away.

The population generated from the system exploitation (SE) roll may be placed in any of the new systems. The SE roll and any population emplacement is carried out before calculation of the number of IUs and the per turn income. Once the systems have been generated the entry WP of the discovering race is relocated to a random system (which may end up as the same system anyway). If this system has been surveyed then the entry WP is automatically closed. Play then continues as normal.

US1.9 Alternatively, for even more challenging late game NPRs, just allocate population on a reducing basis based on the distance from the home system. *e.g. 1-2 transits, all habs maxed, 3-4, all habs at half, 5-6 all habs at one quarter max.*

US2: KAMIKAZE SMALL CRAFT

Those races with no moral considerations to restrict their tactics often resort to using small craft to ram their opponents. Not only are cutters and shuttles cheap and easy to manufacture in large numbers, they can cause no end of problems for an opponent. Over the course of the Rigellian campaign, small craft ramming took place on many occasions and sparked a number of lively debates on the Starfire Mailing List.

The result of those debates was a set of minor changes to small craft and point defence to try and create a more balanced situation between the kamikazes and the defending fleet.

US2.1 The maximum speed of cutters is reduced from seven to six.

US2.2 The maximum speed of shuttles is increased from six to seven.

US2.3 Rule 03.07.05 is changed so that point defence treats incoming Kamikazes as missiles for the purposes of number of shots and to-hit numbers. However, there are penalties of -1 to hit when targeting pinnaces, -2 to hit against shuttles and -4 to hit against cutters.

For example, a cruiser with four D systems is attacked by a wave of fifty kamikaze shuttles. When the shuttles enter the cruiser's tactical hex in their final ramming run, the cruiser gets twenty point defence shots (Dx4 x5 shots each) with a to hit chance of 5 (Normally 7 to hit but -2 vs shuttles). Assuming average rolls, ten shuttles will be destroyed and the other forty will be able to roll to see if their ramming attacks are successful.

US3: FIGHTER PRIMARIES

Fighter Primaries are far too effective for their tech level. The two things which keep primaries in check are their slow rate of fire and their relatively small damage output per hull space of the weapon. Fighter-based primaries remove both of these restrictions. A typical superdreadnought, if required, could mount perhaps ten primaries, firing once every other turn. A single carrier could deploy a strikegroup with thirty-six primaries firing every turn. After all, if the TL14 ship-mounted, Second Generation Capital Primary Beam can only fire once every two turns, it's highly unlikely the lower tech fighter version would be faster firing.

US3.1 Fighter Primaries are restricted to firing every other turn.

US4: MISSILE WARHEAD COSTS AND CAPABILITIES

The cost of missile warheads has been the subject of active debate on the Starfire Mailing List in recent weeks. Although the SDS use a complex and arcane formula, which includes launcher costs, other tech systems at that level, how soon passive defences are lost and XO racks are hit, etc., no one outside the SDS has a clue as to how this is worked out. Presumably because of this lack of knowledge and the fact that the 3rdR rules contradict themselves on SCW and AMP with at least three different definitions of capabilities for each, there is considerable confusion. It is time for a clear rule on warhead costs and capabilities. which is easily understood by everyone.

An example of the apparent contradictions might help: Anti-matter has a warhead strength double that of fusion warheads and costs four times as much, which seems reasonable. Advanced anti

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matter costs three times as much as normal anti-matter but does only 50% more damage. According to page 5 of 3rdR, SCW increases warhead strength by 50% but only costs double the original fusion warhead cost (a very small percentage of an AAM missile). LT3 increases warhead strength over LT2 by 50% but costs four times as much.

You can talk about launcher costs as much as you like, but it just doesn't look right and that is usually the most important factor for players. The following rules provide a common framework within which to increase cost based on increases in capability.

These rules ignore factors such as launcher costs, ratios of current armour and shields strength to damage output, etc. and are purely based on the warhead. This may mean that certain high level warhead types become a little cheaper than before and some more expensive but at least it will be clear to everyone why they cost what they do.

US4.1 Assuming all other factors are equal, an increase in warhead cost should be equal to the square of the increase in warhead strength.

*For example, AM warheads have **two** times the strength of fusion warheads so their costs is equal to that of fusion multiplied by **two squared**.*

*AAM warheads are **one point five** times the strength of AM so the cost is equal to that of AM multiplied by **one point five squared**.*

*This is also internally consistent. AAM warheads are **three** times the strength of fusion so their cost is equal to that of fusion multiplied by **three squared**.*

Using real numbers

An SM costs 0.1 Mc

An SM-a costs 4x that of an SM (2 squared) = 0.4

An SM-b costs 2.25x times that of an SM-a (1.5 sqd.) = 0.9

An SM-b costs 9x times that of an SM (3 squared) = 0.9

This provides a cost increase which is noticeably higher than the increase in strength but maintains internal consistency and still makes the new warhead desirable.

US4.2 This rule does **not** attempt to establish a cost rule between different types of warhead (e.g. AM vs. LT), only within generations of the same type of warhead (e.g. LT1 vs LT2). So whether a laser torpedo costs ten times or a hundred times more than an anti-matter warhead is not important (at least not for the purposes of this rule).

This rule simply means that if a laser torpedo warhead doubles in effectiveness, it costs four times as much (two squared) as the previous generation and if it triples in strength, the cost increases by nine times. What is important is the ratio of cost increase and not the actual cost in megacredits, which will obviously vary between different warhead types.

US4.3 This section provides details of cost increases for different technologies using the above formula. Note that AMP and SCW have different capability definitions in different places within 3rdR so this section also provides definitive capability details.

Increases or decreases in missile chances to hit and point defence intercept numbers are more difficult to find a precise formula for than straightforward strength increases. However, as a guideline I am using 50% increase in cost for -1 to point defence and 100% increase for -2 to point defence, etc. Increases in cost are offset by -50% if they involve a -1 to hit penalty.

For example: Laser torpedoes have a -3 to point defence, giving a 150% increase in cost. This is offset by a -1 chance to hit, making them 100% more expensive than they would be without those modifiers..

US4.3.01 Anti-matter warheads have twice the warhead strength of their fusion equivalents and cost 4x as much.

US4.3.02 Advanced anti-matter warheads have three times the warhead strength of their fusion equivalents and cost 9x as much.

US4.3.03 All Laser Torpedoes suffer a -1 penalty to hit, are -3 for point defence to intercept and inflict laser damage on their target.

US4.3.03.1 First Generation Laser Torpedoes have half the warhead strength of their fusion equivalents and cost the same.

US4.3.03.2 Second Generation Laser Torpedoes have the same warhead strength as their fusion equivalents and cost 4x as much.

US4.3.03.3 Third Generation Laser Torpedoes have a fifty percent greater warhead strength than their fusion equivalents and cost 9x as much.

US4.3.03.4 Fourth Generation Laser Torpedoes have double the warhead strength of their fusion equivalents and cost 16x as much.

US4.4 AMP provides improved penetration aids to missiles, lowering the interception chance of point defence. It cannot be fitted to laser torpedoes. Any reductions in warhead strength caused by AMP are applied after all other modifiers and fractions are rounded down.

US4.4.01 AMP1 is -1 for point defence to intercept and the warhead strength is 10% lower. Missile cost is increased by 50%

US4.4.02 AMP2 is -2 for point defence to intercept and the warhead strength is 20% lower. Missile cost is increased by 100%

US4.5 SCW increases warhead strength by fifty percent

US4.5.01 Missiles equipped with SCW1 suffer a -1 penalty to hit. Missile Cost is increased by 75%. (*1.5 squared for 50% increase in damage = $x2.25 = 125\%$ cost increase minus 50% for -1 to hit*)

US4.5.02 Missiles equipped with SCW2 suffer no penalty to hit. Missile Cost is increased by 125%. (i.e. $x2.25$).

US4.6 Fighter Missiles cannot be equipped with first generation anti-matter. They can however be equipped with advanced anti-matter, doubling their fusion warhead strength.

US4.6.01 fMx-AAM cost 4x the base missile price.

US4.7 HBM are currently hideously overpriced, especially with the availability of CBM and ERBM. With the missile add-ons at HT15, a single missile costs as much as a battlecruiser, which seems very odd indeed.

For many people, the HBM ability to reverse course by 180 degrees also fails what has become known as the 'giggle test'. For example, if a HBM is capable of such radical maneuvering compared to other missiles, why is it simply not fired to a point from which it can turn and engage the target's blind spot. Although the missile has a maximum range of sixty hexes, it can engage a target at that range then swing around for another attack. If it has maneuver capability at the point, why cannot it hit a target at 61 or more hexes without turning?

US4.71 The base price of the HBM should be changed to 3MC, which still means a HBM with the common add-ons will be over 100MC.

US4.72 The HBM loses its ability to re-engage after a missed attack

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US28.00 PLAYER INFORMATION CARD TABLES

US28.01 WEAPON RANGE AND HIT PROBABILITY TABLE

*** Energy Weapons ***																																		
RANGE	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31+	41+	51+
Beam (Normal)	10	10	9	9	9	8	8	8	8	7	7	7	7	7	6	6	6	5	5	5	4	4	4	3	3	2	2	1	1	1	1	1	1	1
Beam (Spinal)	10	10	9	9	9	8	8	8	8	7	7	7	7	7	7	7	6	6	6	5	5	5	5	5	4	4	3	3	3	3	3	3	2	
IDEW	8	8	6	6	6	6	6	5	5	5	5	5	5	4	4	4	4	4	3	3	3	3	2	2	2	1	1	1	1	1	1	1	1	
Pg/Pg2/Pg3	9	9	9	8	8	7	7	7	7	6	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
*** Inertial Sinks ***																																		
U	8	7	6	5	4	3	3	3	2	2	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Uc	9	8	7	6	6	5	5	5	5	4	4	4	3	3	3	3	2	2	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	
*** Missiles: Sprint Mode ***																																		
CAM	9	9	8	8	8	8	7	6	5	4	3	-	-	-	-	-	-	-	-	-	to hit numbers are from XO rack													
CAM2	9	9	9	8	8	8	8	8	7	6	5	4	3	-	-	-	-	-	-	-	receives no -2 penalty from XO rack													
CAM3	9	9	9	9	8	8	8	8	8	8	7	6	5	4	3	3	-	-	-	-	receives no -2 penalty from XO rack													
GMb/GM/SM	9	9	9	8	8	8	7	6	5	3	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
SM2	9	9	9	9	8	8	8	7	7	6	6	5	3	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
*** Missiles: Long Range Mode ***																																		
RANGE	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31+	41+	
BM	-	1	2	4	4	7	6	6	6	6	6	5	4	3	3	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
SM	-	2	3	4	7	8	8	8	8	8	8	8	8	8	7	7	7	6	6	5	5	-	-	-	-	-	-	-	-	-	-	-	*	
PM	-	9	9	9	9	9	9	9	9	9	9	9	9	6	6	5	5	4	4	3	3	-	-	-	-	-	-	-	-	-	-	-	*	
SM2	-	2	3	4	7	8	8	8	8	8	8	8	8	8	7	7	7	6	6	5	5	5	5	5	4	-	-	-	-	-	-	*		
CM	-	2	3	4	7	8	8	8	8	8	8	8	8	8	8	8	8	8	8	7	7	7	7	6	6	6	6	5	5	4	4	-	*	
SBM/CBM	-	2	3	4	7	8	8	8	8	8	8	8	8	8	8	8	8	8	8	7	7	7	7	6	6	6	6	5	5	5	5	4	-	
ERBM	-	2	3	4	7	8	8	8	8	8	8	8	8	8	8	8	8	8	8	7	7	7	7	7	7	7	7	6	6	6	6	5	4	
HBM	-	1	2	4	6	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	6	5	3	
ADM	-	1	1	2	6	7	7	7	7	7	7	7	7	7	7	6	6	6	5	5	4	4	-	-	-	-	-	-	-	-	-	-	-	
ADMc	-	1	1	2	6	7	8	8	8	8	8	8	8	8	8	8	8	7	7	7	6	6	6	5	5	5	5	4	4	4	4	-	-	
AFM/AFM2	-	1	3	5	4	4	4	4	3	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
AFM3	-	1	3	6	6	5	5	5	4	4	3	3	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
AFM4	-	1	3	6	6	6	6	5	5	5	5	4	4	3	3	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
AFMs vs other	-	1	3	5	7	8	8	8	8	8	8	8	8	8	7	7	7	6	6	5	5	-	-	-	-	-	-	-	-	-	-	-	-	
AFMc vs All	-	1	1	1	6	6	6	6	5	5	5	5	5	4	4	4	4	4	4	4	4	4	3	3	3	3	2	2	2	1	1	-	-	
AMBAM	-	1	2	3	3	3	3	3	2	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
AMBAM2	-	1	3	5	5	5	5	4	3	2	2	2	1	-	-	-	All AMBAM types automatically hit vs.mines or planets																	
AMBAM3	-	1	4	6	6	6	6	6	5	5	4	3	2	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
(RAM)	^	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

* -2 when fired from XO rack

Max Ranges: Mines (0), P(12), N(12), Pc(18), Sled-2 (32)

GB/GBP are engaged at -3 to hit except with AFM types which use the AFM vs. other line.

ECM inflicts a -3 penalty vs everything except fighter missiles, which are at -2, and fighter non-missile weapons (including fR types), which are at -1 (27.09.03)

ECM4 inflicts a -4 penalty to hit against everything except fighter missiles, which are -2 and fighter non-missile weapons (including fR types), which are at -1

ECM5 inflicts a -5 penalty to hit against everything except fighter missiles, which are -3, and fighter non-missile weapons (including fR types), which are at -1

Laser Torpedoes are -1 to hit but also -3 for point defence to intercept (27.09.08)

CM/CBM/ERBM/HBM are -1 for point defence to intercept.

HAWK equipped missiles are -5 to hit in blindfire mode and -1 to hit using hand-off mode. (3rdR 27.10.09)

AMP1(p1) gives a -1 modifier to point defence rolls. It has no modifier to hit but does suffer a 10 percent reduction in warhead strength after all other modifier have been applied. (27.15.02)

AMP2(p2) gives a -2 modifier to point defence rolls. It has no modifier to hit but does suffer a 20 percent reduction in warhead strength after all other modifier have been applied. (27.15.02)

SCW is -1 to hit for both normal mode missiles and sprint mode missiles. Warhead strength increases by 50% (27.15.13)

SCW2 has no -hit modifiers. Warhead strength increases by 50% (US27.17.10)

HARM receives a +2 to hit in direct-fire mode against any target with active ECM2. Home-on-jam mode uses SM to hit table with a max range of 15. See ISW4 27.14.21 for more information

Tractor Beams: See 08.02 for rules on firing between tractored units.

Presser Beam2: Each unopposed presser beam creates a penalty of -1 to all missile fire.

NB: These notes contain certain differences from the original printing of 3rdR. Where the tech in ISW4 contradicts the notes below the 3rdR tables, I have used the ISW4 values as they seem more realistic. I have also re-written some of the tech modifiers to keep the same effect but make the actual cost clearer.

US28.02.01 Fighter/Small Craft Weapons vs. Starships Table*

RANGE	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
Ftr Beam	10	9	7	4	3	2	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	
fR Types	9	5	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
fM1	1	3	7	7	7	6	5	4	3	-	-	-	-	-	-	-	-	-	-	-	-	
fM2	1	4	8	8	8	7	7	6	5	5	4	2	-	-	-	-	-	-	-	-	-	
fM3	1	5	8	8	8	8	7	7	6	6	6	5	4	3	2	-	-	-	-	-	-	
fM4	1	6	8	8	8	8	8	7	7	7	6	6	6	5	4	3	2	-	-	-	-	
fM5	1	7	8	8	8	8	8	8	7	7	7	7	6	6	6	6	5	4	3	2	-	
Max. Range for fL(4), fP(4)											*GB/GBP are engaged at -3											

US28.01.01 Kinetic Interceptors vs Starships

RANGE	0	1	2
(Dk5)	6	4	- Damage 2
(Dk4)	7	5	- Damage 3
(Dk3/z)	8	6	- Damage 5

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US28.02 WEAPON RANGE AND DAMAGE TABLE

RANGE	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31+	41+	51+
*** Energy Weapons ***																																		
Cb	30	24	21	18	15	12	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cbc	60	48	42	36	30	24	21	18	15	12	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
E	5	4	3	3	2	2	2	1	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ec	9	8	7	6	5	4	4	3	3	2	2	2	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ec2	10	9	8	7	6	6	5	5	4	4	3	3	2	2	1	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ec3	12	11	10	9	8	7	7	6	6	5	5	4	4	3	3	2	2	1	1	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-
F	5	4	3	3	2	2	1	1	1	1	1	1	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fc	8	7	6	5	4	4	4	3	3	3	2	2	2	2	2	1	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fc2	9	8	7	7	6	6	5	5	4	4	3	3	3	3	3	2	2	2	1	1	1	1	1	1	1	1	-	-	-	-	-	-	-	-
Fc3	11	10	9	9	8	8	7	7	6	6	5	5	4	4	4	3	3	3	2	2	2	2	1	1	1	1	1	1	1	1	1	1	-	-
Fs	12	12	9	8	6	6	6	5	5	5	3	3	3	3	3	3	2	2	2	2	2	2	1	1	1	1	1	1	1	1	1	1	-	-
Fs2	14	12	12	12	9	9	8	8	6	6	5	5	5	5	5	3	3	3	2	2	2	2	2	2	2	2	2	1	1	1	1	1	1	-
Fs3	17	15	14	14	12	12	11	11	9	9	8	8	6	6	6	5	5	5	3	3	3	3	2	2	2	2	2	2	2	2	2	2	2	1
L	3	3	2	2	2	1	1	1	1	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
(HET)	8	7	6	6	5	5	4	3	3	2	2	2	2	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
(HET2)	8	7	6	5	4	4	3	3	3	3	2	2	2	2	1	1	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
(HET3)	9	8	7	6	6	5	5	4	4	4	3	3	3	2	2	2	1	1	1	1	1	1	1	1	-	-	-	-	-	-	-	-	-	
Lx/(DeC)	6	6	6	5	4	4	3	3	3	3	2	2	2	2	1	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lx/(Dec2)	8	8	7	7	6	6	5	5	4	4	3	3	3	2	2	2	2	1	1	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-
Pg	7	7	7	6	6	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pg2	10	10	9	9	8	8	7	6	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pg3	14	14	14	12	12	10	10	9	8	7	6	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pc2	3	3	3	3	3	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	-	-	-	-	-	-	
Pc3	4	4	4	4	4	4	3	3	3	3	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	-	-
Kb	3	3	2	2	2	2	2	1	1	1	1	1	1	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ki	3	3	3	2	2	2	2	2	2	1	1	1	1	1	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ks	4	4	3	3	3	3	2	2	2	2	2	2	1	1	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
K	3	3	3	3	3	2	2	2	2	2	2	2	2	1	1	1	1	1	1	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-
Kc	7	6	6	6	6	5	5	5	5	5	4	4	4	3	3	3	3	2	2	2	2	2	2	1	1	1	1	1	1	1	1	1	-	-
*** Fighter/Small Craft Weapons ***																																		
fL2	4	3	3	2	2	2	2	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Max Ranges: N(12), P(12), Pc(18), Fs2(37), Fs3(45)

The following weapons cause 1 point of damage per hit

BM*, Gmb*, SM*, PM*, SM2*, N, P, Pc, fM1**, fM2**, fM3**, fM4**, fM5**, fL, fP, Mines.

The following weapons cause 2 points of damage per hit:

GM*, CM*, SBM/CBM*, ERBM*, CAM*, CAM2*, CAM3*

* Damage is for a standard fusion warhead. x2 damage for AM warhead, x3 damage for AAM warhead.

** Damage is for a standard fusion warhead. AM not possible on fM series. x2 damage for AAM.

HBM1 causes 10 points of damage

fR causes 2pts of damage; fRAM - 4 pts; fRAAM - 6 pts

SCW/SCW2 multiply damage by 1.5 (FRU)

AMP1 reduces damage by 10%, AMP2 reduces damage by 20%

Nuke or Antimatter warheads inflict 5x damage inside shields on a target with no drive field (SCW has no additional effect)

AMBAM/AMBAM3 causes twelve damage per hit. AMBAM2 causes six damage per hit

ADM/ADMc hits destroy first ACTIVE engine (including Tug) from the left of the control sheet

(RAM) inflicts twice normal ramming damage (see 03.07.03 & 27.10.11) at range 0. To hit number of 8 at range 1

AFMx and AFMc cause one pt of damage per hit on non-fighter targets without drive fields. No effect against active drive fields. Any hit on fighter or small craft destroys the target.

(Sr) inflicts 100 pts of damage in a successful ramming attack. 40 pts of damage at range zero against the target of an unsuccessful ramming attack.

All Primary Beam damage ignores any generation of shields, armour, bulkheads and holds.

All Laser damage ignores shields. Energy Beam damage ignores 'Q' and any generation of armour, holds, magazines, bulkheads and fighter bays.

Laser Torpedo warheads convert fusion damage to laser damage as follows: LT1 halves damage (FRD), LT2 has equal damage, LT3 multiplies damage by 1.5 (FRD), LT4 doubles damage.

US28.03 FIGHTER KILL TABLES*

Firing Unit: Starship/OWP

RANGE	0	1	2	3	4	5	6	7	RANGE	0	1	2	3	4	5	6	7	RANGE	0	1	2	3	4	5	6	7
Db, Sprint	3	2	1	(SM,GM,CAM)					D	3	3	2	2	1	-	-	-	Proto. Gun	4	2	-	-	-	-	-	-
SM2 Sprint	3	2	1	1	-	-	-	-	Di	5	4	3	2	1	1	-	-	Gun	5	3	-	-	-	-	-	-
Cb & F-Series	2	1	1	1	-	-	-	-	Dc	1	1	2	2	3	3	-	-	Laser	3	2	1	1	-	-	-	-
E-series	2	2	1	-	-	-	-	-	Dx/Dxz	8	6	5	4	3	2	-	-	fR Types	7	-	-	-	-	-	-	-
Laser Types	2	2	2	2	1	1	1	-	Dcx/Dcz	2	3	4	5	6	7	8	-	L2/fL2i	3	2	1	1	1	1	-	-
Pg	3	1	1	-	-	-	-	-	Dxe	8	7	6	5	4	3	2	-	DPOD	8	-	-	-	-	-	-	-
Pg2/Pg3	3	2	1	1	-	-	-	-	Dce	2	3	4	4	5	6	7	8	For AFMx/AFMc/HARM (see 28.01)								
N	3	2	2	1	1	1	1	1	Dk5	1	1	1	-	-	-	-										
Dk4	2	1	1						Dk3/Dkz	2	1	1	1	-	-	-										

*NOTE: Mi-x bonus is halved (FRU) when firing on 28.03 or with AFMs other than AFMc. AFMc receive no Mi-x modifier

*ALL SMALL CRAFT and objects targeted as small craft, such as Courier Drones, are +1 to be engaged

US28.05 SMALL CRAFT CAPABILITIES

Type	Code	Bb Points	Tac Speed	Inter/ Syst. Speed	Crew Only Days	Fill Load Days	Per-sonnel Load	Cargo Points	PCF-a Air-drop	Warp Capa-ble	Pt Def-ence Equiv.	fXO racks Points	Sensor Range	MC Cost
Cutter	ct	1	6	3	12	4	0.25 Q	10	no	no	none	0	6	8
Shuttle	st	2	7	4	12	6	1.00 Q	100	no	no	none	0	20	20
Assault Shuttle	ast	2	8	4	12	6	1.00 Q	100	yes	no	Db	0	20	30
Anti-fighter Sm. Cr.	AFSC	2	8	4	1	1	none	none	no	no	none	1	20	30
Pinnacle	pn	4	7	4	24	8	2.00 Q	200	yes	yes	D	0	20	45
Armed Pinnacle	APn	6	7	4	4	4	none	none	no	yes	D	4	20	60
Prototype Gunboat	PGB	NA	8	5	5	5	none	none	no	yes	Dx	2x4	fXr	80
2nd Gen Ast.	ast2	4	8	4	12	6	1.00 Q	100	yes	no	Dx	5	20	55
2nd Gen Pinnacle	pn2	6	7	4	24	8	2.00 Q	170	yes	yes	Dx	10	fXr	60
Gunboat	GB	NA	9	6	6	6	none	none	no	yes	Dxz	4x4	fXr	100
2nd Gen Gunboat	GB2	NA	10	7	7	7	none	none	no	yes	Dxe	5x4	fXr	120
3rd Gen Gunboat	GB3	NA	11	8	8	8	none	none	no	yes	Dxe	6x4	fXr	150

US28.04 STRIKEFIGHTER TYPES AND CAPABILITIES

HTL	Fighter Type	Max Speed	Loaded Speed	Internal Weapons	fXO Racks	Fighter Cost	Endurance Turns	Endurance Minutes	Scan Range
8	F0	9	8	0	2	20	120	60	6
9	F1	10	8	0	3	30	240	120	20
10	F2	11	9	1	3	40	360	180	20
11	F3	12	10	2	3	50	480	240	20
12	F4	13	11	2	4	60	600	300	20
13	F5	14	12	3	4	70	720	360	20
15	JSF	15	12	3	6	80	960	480	20

NOTES

- (1) Only 1/2 MP is lost per fXO loaded (FRU). Example: 3 loaded fXO reduce speed by 2
- (2) Cost does not include the price of internal weapons
- (3) See 04.16 for fighter loadout restrictions

US28.06 NEW AND UPDATED ORDNANCE TYPES AND MAGAZINE POINTS

Ordnance	Cost	Cargo Points	Ship XO Required	Fighter XO Required	Range from XO Rack
Anti-mine Missile Carrier Pod Two (AMBAMP2)	50	50.00	-	-	-
Capital Anti-Drive Missile (ADM _c)	1.5	4.00	3	-	30
Capital Anti-Mine Missile (BAM-R _c)	5	2.50	2	-	3
Capital Bombardment Missile (CBM)	0.5	2.50	2	-	34*
Extended-Range Bombardment Missile (ERBM)	1	2.50	2	-	42*
Falcon Anti-fighter Missile (AFM4)	4	1.00	-	-	-
Fifth Generation Carrier Pod (SBMHAWK5)	60	80.00	-	-	-
Fourth Generation Enhanced Drive Missile (EDM4)	6	2.50	2	-	-
Gladius Fighter Missile (fM4)	3	0.25	-	1	-
Gun Anti-Mine Missile (BAM-G)	5	2.00	2	-	3
Heavy Bombarment Missile (HBM)	3	20.00	-	-	-
Peregrine Anti-fighter Missile (AFM3)	3	1.00	-	-	-
Spiculum Fighter Missile (fM5)	3	0.25	-	1	-
Standard Anti-mine Missile (BAM-R)	1.5	1.00	1	-	1
Third Gen. Anti-Mine Ballistic Missile (AMBAM3)	50	2.75	2	-	8*
Third Generation Close Assault Missile (CAM3)	1.5	2.50	2	-	12

* -2 penalty to hit when fired from XO rack.

STARFIRE

US26.02 TECH SYSTEM CODES AND INFORMATION (includes new and updated systems)

TECH LEVEL 6				
System	Code	Cost	Spaces	Devel.
Anti-fighter Small Craft	AFSC	30	-	8,000
Prototype Fighter Gun	pfG	0.5	-	-
Targeting Scanners	Xs	25	1	4,000

TECH LEVEL 8				
System	Code	Cost	Spaces	Devel.
Armed Pinance	APn	60	-	6,000
Capital Anti-mine Missile	BAM-Rc	5	-	6,000
Gun Anti-mine Missile	BAM-G	5	-	6,000
Standard Anti-mine Missile	BAM-R	1.5	-	6,000

TECH LEVEL 9				
System	Code	Cost	Spaces	Devel.
Spinal Force Beam	Fs	120	10	12,000

TECH LEVEL 10				
System	Code	Cost	Spaces	Devel.
Prototype Gunboat	GBP	80	-	8,000
Second Generation Laser Torpedo	LT2	x4	-	10,000

TECH LEVEL 11				
System	Code	Cost	Spaces	Devel.
Advanced Anti-matter Warhead	(AAM)	x9	-	35,000
Capital Bombardment Missile	CBM	0.5	-	9,000
Electronic Counter Countermeasures	(?cc)	60	2	9,000

TECH LEVEL 12				
System	Code	Cost	Spaces	Devel.
Second Generation Spinal Force Beam	Fs2	135	10	27,000

TECH LEVEL 13				
System	Code	Cost	Spaces	Devel.
Advanced Tractor Beam	Ta	30	1	1,000
Advanced Missile Penetration Aid One	AMP1	x1.5	-	5,000
Capital Anti-Drive Missile	ADMc	5	-	15,000
Engine Tuner Three	(It3)	100/HS	Varies	10,000
Enhanced Point Defence	Dxe	150	2	36,000
Peregrine Anti-fighter Missile	AFM3	3	-	6,000
Shaped Charge Warhead	SCW	x1.75	-	6,000
Third Generation Laser Torpedo	LT3	x9	-	12,000

TECH LEVEL 14				
System	Code	Cost	Spaces	Devel.
Advanced Maneuvering Three	AM3	200% of EC	-	18,000
Enhanced Capital Point Defence	Dce	180	3	48,000
Extended-Range Bombarment Missile	ERBM	1	-	12,500
Gladius Fighter Missile	fM4	2	-	5000
RSM Advanced Gun\ Missile Launcher	Wa2	80	3	16,000
Second Generation Gunboat	GB2	120	-	12,000
Third Generation Capital Energy Beam	Ec3	150	6	40,000
Third Generation Capital Force Beam	Fc3	100	6	30,000

TECH LEVEL 15				
System	Code	Cost	Spaces	Devel.
Advanced Missile Penetration Aid Two	AMP2	x2	-	12,000
Engine Tuner Four	(It4)	120/HS	Varies	15,000
Falcon Anti-fighter Missile	AFM4	4	-	8,000
Fifth Generation Carrier Pod	SBM-HAWK5	60	-	6,000
Fourth Generation Enhanced Drive Missile	EDM4	6	-	8,000
Heavy Bombardment Missile	HBM	3	-	100,000
Molecular-bonded Armour	Ac3	12	1/9	6,000
Molecular-bonded Bulkhead	Bc3	12	1/9	-
Phased Shields	S3	16	1/8	6,000
Second Generation Engine Governor	(Ig2)	250	3	12,000
Second Generation Shaped Charge Warhead	SCW2	x2.25	-	8,000
Joint Space Fighter	F6	80	-	12,000
Third Generation Anti-Laser Armour	Al3	15	1/5	6,000
Third Generation Anti-mine Ballistic Missile	AM-BAM3	50	-	10,000
Third Generation Close Assault Missile	CAM3	1.5	-	10,000
Third Generation Hetlaser	(HET3)	140	4	35,000
Third Generation Overload Dampener	O3	120	1	8,000
Third Generation Spinal Force Beam	Fs3	150	10	45,000

TECH LEVEL 16				
System	Code	Cost	Spaces	Devel.
Advanced Capital Gun/ Missile Launcher	Wca	150	5	30,000
Anti-mine Ballistic Missile Carrier Pod Two	AM- BAMP2	50	-	6,000
Capital Converging Anti- matter Beam	Cbc	300	9	60,000
Fourth Generation Laser Torpedo	LT4	x16	-	18,000
Ghostmaker ECM	?5	200	1	12,500
Improved Missile Box Launcher	Wbi	100	2	12,000
Spiculum Fighter Missile	fM5	3	-	7,500
Third Generation Capital Primary Beam	Pc3	300	6	60,000
Third Generation Gunboat	GB3	150	-	15,000
Third Generation Plasma Gun	Pg3	100	2	22,500

US27.00 DESCRIPTIONS OF *STARFIRE* SYSTEMS

The costs and hull space requirements of systems are listed under US26.01 and US26.02. This rule section contains descriptions of what each weapon or technical system is and what it does. Cost information and space requirements are referred to only when necessary to make the explanation clear.

HIGH TECH SIX SYSTEMS

US27.8.1 ANTI-FIGHTER SMALL CRAFT (AFSC)

The Anti-fighter Small Craft was developed by the Council of Drax after encountering a technologically superior race during their earliest explorations of the galaxy. The Drax, acting with their usual lack of diplomacy, demanded access to the technology of the Alkoran and were politely but firmly rebuffed. Refusing to take no for an answer, The Drax decided to conquer the Alkoran and take the new technology for themselves.

Although inferior in quality the Drax had a substantial quantitative edge which was negated by the Alkoran possession of the strikefighter. With no data on this new system and lacking the technical base to develop their own version, the Drax modified an assault shuttle to produce the Anti-fighter Small Craft. The point defence and cargo space were removed and the life support drastically reduced in order to save weight, improve maneuverability and allow installation of a primitive small craft datalink system. To compensate for the loss of the point defence, a single, recently developed prototype fighter gun was fixed to the underside of the fuselage.

The AFSC is half way between a small craft and a fighter and shares some of the characteristics of both. Because of its stripped down nature, the AFSC is engaged as a fighter rather than a small craft and it can be datalinked in groups of three, providing at least a limited chance against the tightly meshed squadron organization of strikefighters. The AFSC requires two boatbay points, the same as an unmodified assault shuttle. It has limited life support compared to the assault shuttle, although still vastly superior to that of a fighter. The final benefit of the AFSC is that its origin as a shuttle makes it suitable for use even by those races which cannot use fighters due to their physical limitations.

The Drax constructed the Anti-fighter Small Craft in vast numbers and eventually launched an unprovoked, surprise attack on the Alkoran. Taken by surprise, the Alkorans used their carrier fleet to try and hold back the Drax and their fighters ran straight into an ambush as hordes of AFSC poured from Drax ships. Despite a significant individual superiority over the new AFSC, the Alkoran fighters were simply overrun by numbers and wiped out. The Alkoran battleline proved equally susceptible to superior numbers and the Alkorans became the Drax's first extra-solar conquest. Ironically, the Drax gained fighter technology from the newly conquered Alkorans and the AFSC was never to see combat again.

Thanks to Kurt Blackwelder for the concept of the AFSC.

US27.8.2 PROTOTYPE FIGHTER GUN (pfG)

The Prototype Fighter Gun was designed as the weapon for the Anti-fighter Small Craft. It is functionally very similar to the Fighter Gun, having the same range and has the same firing arc, but with a lower degree of accuracy. This system is developed as part of the research into the AFSC.

US27.8.3 TARGETING SCANNERS (Xs)

The Long Range Sensors (Xr) developed at tech level three are a very capable system, combining long range detection with tactical range targeting and even providing a survey capability which enhances that of Science Instruments. However, not all of these capabilities are required for ships which simply need the Xr

for the purposes of targeting weapons beyond five light seconds. Therefore the smaller and less expensive Targeting Scanners were developed for those ships which do not require a long range detection capability. Xs provides the ability to detect and target ships at up to ten light seconds range (forty tactical hexes). Within that range they have the same targeting and detection capabilities as Xr. They do not provide any form of survey capability.

HIGH TECH EIGHT SYSTEMS

US27.10.1 ARMED PINNACE (APn)

The development of strikefighters was a great benefit to many races, allowing them to project considerable power at a great distance from their main fleet. Some races however were physiologically or philosophically unable to make full use of the new technology and found themselves at a significant disadvantage.

The earliest, and therefore most primitive, attempt to address this problem was the Armed Pinnacle. The Empire of the Rising Moon, a race of elephant-sized herbivores spectacularly unsuited to strikefighters, made a number of modifications to a standard TL7 pinnacle (27.09.07) in an effort to provide a limited stand-off capability. The cargo capacity was eliminated and the life support dramatically reduced, cutting the maximum range by over eighty percent. The point defence system and the sensors remained intact. A fighter gun was built into the fuselage and four fighter XO racks were added to the underside.

The normal pinnacle model requires only four boat bay spaces. The Armed Pinnacle requires six boat bay spaces to handle the non-standard additions and ordnance loading crew.

Although slower, more expensive and easier to hit than the fighters of a similar technological level, the armed pinnacle had a far greater range, a more powerful armament and the ability to transit warp points.

US27.10.2 STANDARD ANTI-MINE MISSILE (BAM-R)

The Standard Anti-mine Missile was originally developed by the Rigellian Empire to provide a way to clear minefields without having to enter attack range of the mines. It was not envisaged as a weapon which would be used which under enemy fire except for desperate circumstances. The BAM-R has a range of two tactical hexes and has just a five percent chance of destroying a single mine pattern. It has no effect against IDEW.

Due to the blind-fire nature of the weapon no fire modifiers apply, including crew grade, improved multiplex tracking or warp point transit modifiers. Even though the weapon is not very accurate it can be fired from advanced gun/missile launchers, which provide a significant rate of fire. A datagroup of Rigellian Battle Mod 2 class battlecruiser with twelve launchers each can fire almost one hundred and fifty standard anti-mine missiles per minute, destroying approximately seven mine patterns in that period of time. The BAM-R can be fired from external launchers and requires a single XO rack. It has a fusion warhead.

US27.10.3 CAPITAL ANTI-MINE MISSILE (BAM-Rc)

The Capital Anti-mine Missile, developed by the Octopus Empire, fulfilled the same purpose as the smaller Standard Anti-mine Missile developed by the Rigellians. The Octopi have a substantial number of capital missile battlecruisers in their order of battle explaining their preference for the larger weapon.

The BAM-Rc has a range of five tactical hexes and has a twenty percent chance to destroy a single mine pattern. Although the BAM-Rc requires capital missile launchers and therefore has a much slower rate of fire than its smaller cousin, its much greater accuracy actually results in a twenty percent greater efficiency in terms of hull space for launchers vs mines destroyed per turn.

Due to the blind-fire nature of the weapon no fire modifiers apply, including crew grade, improved multiplex tracking or warp point transit modifiers. The BAM-Rc can be fired from external launchers, requiring three XO racks. It has a fusion warhead.

US27.10.04 GUN ANTI-MINE MISSILE (BAM-G)

The BAM-G is identical to the Capital Anti-mine Missile in every way except it is fired from a Gun Launcher rather than a capital missile launcher. It must be researched separately from the BAM-Rc.

HIGH TECH NINE SYSTEMS

US27.11.1 SPINAL FORCE BEAM (Fs)

The Spinal Force Beam was the first attempt to create a large, long ranged beam weapon built along the keel of the ship. This was a huge weapon, fully two thirds larger than the capital force beam and could not be mounted on anything smaller than a destroyer hull. The Spinal Force Beam has a fifty percent greater damage output than the capital version of the force beam, actually making it slightly less efficient in terms of damage output per hull space at normal ranges.

However, the spinal mounted weapon has a fifty percent greater range, making it an ideal weapon with which to chase down missile ships or pick off slower moving ships with shorter ranged weapons. Another benefit of the long focal length which provides the extra range is better accuracy at medium and long ranges.

The major disadvantage of the Spinal Force Beam is its very restricted firing arc. Unlike most standard weapons which have over a three hundred degree field of fire, the Fs has the same firing arc as a strikefighter. Although potentially lethal in the right circumstances, the Spinal Force Beam requires expert ship handling to make full use of its capabilities.

A secondary disadvantage is the additional hull bracing and interior design restrictions for any ship mounting one or more spinal weapons. Therefore no ship may devote more than one third of its hull spaces to any form of Spinal Weapon, making the heavy cruiser the smallest hull which could mount two Spinal Force Beams.

HIGH TECH TEN SYSTEMS

US27.12.1 PROTOTYPE GUNBOAT (GBP)

Although the Armed Pinnacle (US27.10.1) gave fighter using races an initial shock, by the time the Second Generation Fighter came on the scene it was badly outclassed. The scientists of the Rising Moon had already begun research on an entirely new type of small craft and were ready to put a prototype into limited production to test their ideas. Although less capable than the eventual TL12 Gunboat (27.14.06), it was much closer to the gunboat concept than the Armed Pinnacle.

The Prototype Gunboat follows the same rules as the TL12 Gunboat with the following exceptions. Its has only eight XO racks set in two groups of four and has no 'ripple fire' capability. The two groups of four racks cannot be fired on the same tactical turn. If the second set of four XO racks contains lasers and the first set contains expendable munitions such as fighter missiles, the lasers may not be fired until the tactical turn after the ordnance on the first four racks is fired. The ordnance on the front racks may be dropped rather than fired, in which case the lasers can fire immediately. The Prototype Gunboat is equipped with a single type Dx point defence and has no datalink capability. It is also slower and has a smaller combat range than the Gunboat, as per the US28.05 Small Craft Capabilities table

HIGH TECH ELEVEN SYSTEMS

US27.13.1 CAPITAL BOMBARDMENT MISSILE (CBM)

Even though the Strategic Bombardment Missile has a thirty percent range advantage over the Capital Missile, the CM remains in service due to its superior penetration aids. This often results in warships carrying a mix of the two missiles, causing unnecessary

logistical problems. The Vendax Confederation was the first to develop a solution to this problem with the creation of the Capital Bombardment Missile.

The CBM combines the range of the Strategic Bombardment Missile with the penetration ability of the Capital Missile. Even though it is over sixty percent more expensive than the SBM, the extra capability is well worth it. In all other ways except for the -1 penalty for point defence to hit, the CBM is treated as an SBM.

US27.13.2 ELECTRONIC COUNTER-COUNTERMEASURES (?cc)

Although the Third Generation ECM system was a marvel of technology, it was large and expensive, making it an unjustifiable expense for many smaller ship designs. The ECCM system was a cheaper cut-down version which concentrated on just one of the five operational modes available to ECM3. ECCM can negate the effects of a single enemy ECM system within sixty tactical hexes or a single ECM2 system within five hexes. ECCM requires one turn of inaction to change between countering ECM and ECM2 or vice versa.

HIGH TECH TWELVE SYSTEMS

US27.14.1 SECOND GENERATION SPINAL FORCE BEAM (Fs2)

Whereas the original Spinal Force Beam was the spinal adaptation of the Capital Force Beam, the Second Generation Spinal Force Beam is based on the technology of the Fc2. The Fs2 is the same size as its predecessor and follows the same rules. Its damage output is greater and the maximum range increased to just over nine light seconds, almost equal to maximum SBM range.

HIGH TECH THIRTEEN SYSTEMS

US27.15.1 ADVANCED TRACTOR BEAM (Ta)

Always looking for ways to save hull space for much needed weapons and defences, the Tangri developed the Advanced Tractor Beam. It is functionally identical to the Improved Tractor Beam but is only half the size of its predecessor.

US27.15.3 CAPITAL ANTI-DRIVE MISSILE (ADM_c)

The Anti-Drive Missile was a devastatingly effective weapon when introduced by the Khanate of Orion in 2229, helping the Khanate to neutralise the speed advantage of their Gormish opponents. By 2440, the ADM was still useful but weapons ranges had greatly increased over the preceding two centuries and the ADM was in serious need of an upgrade. The Capital Anti-Drive missile, also developed by the Khanate of Orion, has a fifty percent greater range and generally better accuracy over that range.

Advances in technology have allowed the increased range without a matching increase in missile size and the ADM_c still requires three ship XO racks.

US27.15.4 ENGINE TUNER THREE (It3)

Developed for the Terran Federation Navy by Rolls-Royce Aerospace Propulsion, the third generation engine tuner is similar in both purpose and function to its predecessor. However, the radiation shielding has been substantially improved, allowing the tuner to be used for twice as long without harmful radiation affecting the crew. This allows much greater tactical flexibility as the new shielding will protect the crew for the entire duration of a significant proportion of engagements

US27.15.5 ENHANCED POINT DEFENCE (D_xe)

The constant growth in missile ranges and effectiveness is an ongoing challenge to those scientists concerned with developing defensive systems for their respective races. Enhanced Point Defence provides the latest swing of the offensive vs. defensive

pendulum. Although the Dxe's accuracy has not improved from the Dxz, it is able to engage twenty percent more targets and has a slightly longer range against fighters. Improvements in fire prediction software and counter-missile speeds allow this system to protect ships in the same command datagroup from up to three hexes away.

US27.15.2 PEREGRINE ANTI-FIGHTER MISSILE (AFM3)

With the development of the capital anti-fighter missile, it seemed to some observers that the original anti-fighter missile and the modified AFM2 which added HAWK guidance were obsolete. The massive range of the AFMc, dwarfing that of the AFM, allowed it to strike incoming fighters well beyond the range of the fighters weapons. However, the capital anti-fighter missile had two major drawbacks - it was very expensive and it required capital missile launchers.

Capital missiles were rarely the armament of choice for the light combatants which usually formed the screening elements of major fleets, leaving them unable to make use of the AFMc. Therefore the AFM lived on. However, the increasing range of fighter weapons dictated the AFM was in need an upgrade. The ensuing research by Eaglefire Systems, a defence contractor within the Ophuichi Association, yielded the Peregrine, also referred to as the AFM3. The AFM3 is equipped with HAWK guidance, has a longer range than the AFM2, is more accurate and best of all, is only half the cost of its predecessor. It was developed too late to play any role in the Fourth Interstellar War.

HIGH TECH FOURTEEN SYSTEMS

US27.16.1 ADVANCED MANEUVERING THREE (AM3)

Advanced Maneuvering Three is an evolutionary rather than revolutionary upgrade to shiphandling. As with the earlier versions, AM3 deforms the ship's drive field, allowing much more radical maneuvers than would normally even be contemplated. Advanced Maneuvering Three reduces a ship's turn mode by three to a minimum of one. If the ship's original number of engine rooms is reduced by one the TM bonus drops to -2. If the ship's original number of engine rooms is reduced by three, the bonus drops to -1.

US27.16.2 ENHANCED CAPITAL POINT DEFENCE (Dce)

The capital version of Enhanced Point Defence is more accurate than its smaller cousin and can engage seven missiles instead of six. The penalty for the improved performance is a fifty percent greater mass. As with the Dxe system, improvements in fire prediction software and counter-missile speeds allow Enhanced Capital Point Defence to protect ships in the same datagroup from up to three hexes away.

US27.16.2 EXTENDED RANGE BOMBARDMENT MISSILE (ERBM)

While the Rim Federation was terrifying the Terran Republic with the Heavy Bombardment Missile, the Khanate of Orion was engaged in its own missile development program, unaware of the brilliant gravitic research taking place just over the border in Zephraim. From the perspective of the Khanate, which had never developed the CBM, the SBM was the longest ranged missile in existence and had been for over a hundred years. It was way past time for an upgrade.

Their research, built on the foundations of centuries of missile warfare, concentrated on well established technology rather than trying to develop new scientific concepts. The result, named the Extended Range Bombardment Missile, had a range twenty-five percent greater than the SBM, incorporated the penetration aids of the Capital Missile and could only be fired from Capital Gun/Missile Launchers. In all other ways it is an SBM and follows the SBM rules (27.11.09).

Due to the cost and space requirements of the HBM Launch-

ers, the ERBM proved popular with all the major navies of the period.

US27.16.4 GLADIUS FIGHTER MISSILE (fm4)

With the increasing range of anti-fighter weapons, in particular the Capital Anti-fighter Missile, the available weaponry for strikefighters has to keep step with defensive technology or risk the fighter becoming nothing but a fast moving target drone. The Terran Republic Navy invited defence companies to tender for contract to supply the TRN with an upgraded version of the third generation fighter missile. After highly competitive trials, the TFN selected the Gladius, developed by Lockheed Dynamics. The Gladius has a longer range but the same missile penetration aids as its predecessor

US27.16.5 RAPID-SPRINT-MODE (RSM) ADVANCED GUN/MISSILE LAUNCHER (Wa2)

The original Advanced Gun/Missile Launcher was a weapon born ahead of its time and is still in use centuries later. Very popular on smaller ships, it provided a good short range punch, particularly after the development of anti-matter, and a reasonable mid-range range capability. Over time however, longer weapon ranges and the advent of datalinked point defence greatly reduced the effectiveness of missiles launched in standard mode. Although there was little which could be done to redress the long range balance, a spin-off from the line of research in launcher technology which would eventually produce the Advanced Capital Gun/Missile Launcher allowed an improvement in the launcher's sprint-mode firing rate

Also known as the Second Generation Advanced Gun/Missile Launcher, the Rapid-Sprint-Mode version of this weapon is capable of firing three standard missiles per round in sprint-mode, although it still can only fire two missiles per round in standard mode. The system makes use of the increasingly high speed of sprint-mode missiles and the time saved by not having to lock on targets at the same distance as standard mode to get the missile away and the launcher recycled more quickly

US27.16.6 SECOND GENERATION GUNBOAT (GB2)

The Empire of Gormus, more commonly known simply as the Gorm, are a race unsuited to strikefighter operations due to their centauroid physiology. When they first encountered the gunboat during the Fourth Interstellar War, the Gorm finally found an armed small craft unaffected by their physical constraints and they took to it enthusiastically. Well, enthusiastically for Gorm anyway.

After the war, with fighters undergoing continuous improvement over time, the initial impact of the gunboat wore off and it began to fall behind its smaller rivals in comparative capability. The Gorm embarked on a project to upgrade the gunboat and the Second Generation Gunboat was born.

In addition being faster and having greater endurance, the GB2 has a significant firepower advantage over the original gunboat. It gains a fifth inline rack, capable of carrying an additional four XO points of fighter ordnance or an additional point of ship XO ordnance and the internal weapon space has been doubled in size, allowing the GB2 to carry the internal fighter hetlaser. The point defence suite is upgraded to the Enhanced Point Defence system and, improvements to the datalink capability of the original GB allow five GB2 to form a datalinked squadron. In all other ways, the GB2 follows the same rules as the GB.

US27.16.7 THIRD GEN. CAPITAL ENERGY BEAM (Ec3)

The Ophuichi Association continued its interest in particle beam technology and developed the Third Generation Energy Beam shortly before the conclusion of the Terran Civil War. Although only about twenty percent more effective than the Second Generation Model, the Ec3 provided a useful upgrade in Ophuichi firepower and increased the maximum range to over

five light seconds, slightly longer than the Terran Hetlaser of the same period.

US27.16.8 THIRD GEN. CAPITAL FORCE BEAM (Fc3)

Although in the years before the Civil War, the Second Generation Hetlaser remained the battleline weapon of choice for the Terran Federation, the continuing improvements in the field of Anti-laser Armour required that force beam technology be kept up to date. The Third Generation Capital Force Beam was in development at the Zephrair Research Base and was virtually ready for production when the war broke out. However, one of the scientists involved in the project made a breakthrough in gravitic synthesis leading to the creation of the Capital Variable Focus Beam. Work was shifted onto this new project and the Fc3 research was left incomplete.

As the Second Generation Capital Force Beam was still the most advanced force beam in production during the war, together with the Capital Primary Beam it formed the basis for the Capital Variable Focus Beam. When the war was finally over, the work on the Fc3 was completed, giving the Rim Federation a new force beam with a longer range than the Fvc and at only half the price. Although it lacked the primary capability of the Capital Variable Focus Beam the Fc3 was an excellent slugging weapon and ideal for mid-range combatants.

HIGH TECH FIFTEEN SYSTEMS

US27.17.1 ENGINE TUNER FOUR (It4)

The It4 was developed as the result of a major breakthrough in radiation shielding by Rolls-Royce. The ship mounting the tuner can operate it for an hour per week without any negative effects. This has a significant impact on tactical combat as a warship will almost certainly be able to run its tuners throughout any engagement. Only if the ship is involved in a number of long running battles over the course of several days will tuner radiation become a consideration.

US27.17.2 FALCON ANTI-FIGHTER MISSILE (AFM4)

The balance of power between fighter missiles and anti-fighter missiles shifts to the defence with the development of the Falcon, a fourth generation Anti-Fighter Missile, by Eaglefire Systems. It represents a further improvement on the Peregrine (AFM3), adding almost twenty-five percent to the earlier weapon's range and providing better accuracy over that range.

US27.17.3 FIFTH GENERATION SBM CARRIER POD (SBMHAWK5)

The Fifth Generation SBM Carrier Pod is a straightforward upgrade of the fourth generation model. The standard weapon loadout is eight third generation close assault missiles, usually with second generation shaped charge warheads, although capital missiles or strategic bombardment missiles can be substituted for the CAM3s.

US27.17.4 FOURTH GENERATION ENHANCED DRIVE MISSILE (EDM4)

The 4th Generation EDM performs as per the third generation model except for two important differences. It can be deployed to protect any single ship, rather than just ships of the same data-group or battlegroup and it lasts for four turns rather than three.

US27.17.5 JOINT SPACE FIGHTER (JSF)

Developed in a joint venture between the Terran Republic and the Ophuichi Association, the Joint Space Fighter represents the very latest in strikefighter technology. In historical terms, the JSF is actually the seventh generation of strikefighter used by Terrans, including the old prototype strikefighter. However for the sake of tradition it is often referred to as the F6.

The maximum speed of the JSF is seven point five light seconds per minute (15 tac hexes per turn), although that speed drops by twenty percent under a full weapons load. The JSF can mount up to three spaces of internal weapons and has six fighter XO racks, giving it a serious offensive punch.

US27.17.6 MOLECULAR BONDED ARMOUR (Ac3)

Also known as third generation composite armour, this new material developed by MetalMagic Industries of Old Terra can withstand a massive amount of damage. Steady improvements in armour and shielding over time have outstripped the damage output of weapon systems, leading to battles where a ship can take a severe pounding with no visible effect until its passive defences have been eliminated. Once the armour is gone, a ship's interior systems will quickly be smashed to wreckage.

US27.17.7 MOLECULAR BONDED BULKHEAD (Bc3)

The Molecular Bonded Bulkhead is a relatively thin slice of Molecular Bonded Armour used to divide compartments within a ship's hull. It is automatically available once Ac3 is developed.

US27.17.8 PHASED SHIELDS (S3)

Another Terran development, this time by Vickers Defence Technologies, Phased Shields provide a sixty percent higher energy absorption rate than Second Generation Improved Shields. Shield technology has seen some dramatic developments over the last two centuries and Phased Shields are eight times more effective than the original shields developed for the TFN.

US27.17.9 SECOND GENERATION ENGINE GOVERNOR (Ig2)

The development of the Capital Anti-Drive Missile revived the ADM as a popular weapon for mounting on XO racks. The resultant increase in engine hits suffered by the major navies led to the development of the Second Generation Engine Governor. The Ig2 works in the same way as its predecessor but reduces the chance of an ADM burning out an engine to 40%.

US27.17.10 SECOND GENERATION. SHAPED CHARGE WARHEAD (SCW2)

Although the original shaped charge warhead provided a further increase in the destructive power of missile warheads, it affected missile accuracy, making it slightly less useful than was originally hoped. The impetus behind the development of a second generation version was to improve the shaped charged warhead's accuracy while retaining the increase in missile warhead yield. The resulting research provided the SCW2, first deployed by the Terran Republican Navy during the Altair Incident.

There are no hit penalties for SCW2-equipped warheads. A fortunate bonus to the research was the ability to install SCW2 on size one warheads.

US27.17.11 THIRD GENERATION ANTI-LASER ARMOUR (AI3)

Anti-laser armour fulfils exactly the same function as the earlier generations but only requires one fifth of a hull space.

US27.17.12 THIRD GENERATION ANTI-MINE BALLISTIC MISSILE (AMBAM3)

The original first generation AMBAM was a quantum leap in anti-mine warfare, enabling attacking ships to blow large chunks out of defending minefields. Its main disadvantage was its size, preventing it from being launched from internal launchers. Mounted on external ordnance racks, the AMBAM was extremely vulnerable to enemy fire, particularly from laser buoys, and if hit while still on the racks would destroy the ship which carried it. The second generation model solved this problem by reducing the missile to a size which allow it to be fired by capital gun\misile

launchers but suffered from a smaller warhead, cutting in half the amount of mines destroyed.

The third generation missile combines the advantages of its two ancestors, providing the huge warhead of the original AMBAM and the internal launch capability of the second generation model. The AMBAM3 can be fired from Wc or Wca launchers but not from Rc launchers. It follows all the same rules as the AMBAM2 except it destroys 1-10 patterns of mines or IDEW (defender's choice)

US27.17.13 THIRD GENERATION CLOSE ASSAULT MISSILE (CAM3)

Although the third generation of the close assault missile retains the same warhead as the previous version, it provides a twenty-five percent increase in range. At engagement ranges which were once the sole purview of ships armed with standard or capital missiles, the advanced anti-matter CAM3 with a shaped charge warhead is a devastating weapon

US27.17.14 THIRD GENERATION HETLASER (HET3)

The Third Generation Hetlaser, built by Heterodyne Systems Inc., follows the example of its predecessor by reducing the hull space required for the weapon and still achieving a modest improvement in both range and power. Although only two thirds the size of most capital beam weapons, the hetlaser is still an excellent short to medium range assault weapon and an ideal system for smaller vessels.

US27.17.15 THIRD GEN. OVERLOAD DAMPENER (O3)

Developed by the Ophuichi Association to complement the latest Capital Energy Beam, this system is a simple upgrade of the second generation model. It can absorb four points of E-beam damage or be burned out to absorb twelve points. Although normally a devastating weapon, the capital E-beam's effectiveness will be severely curtailed by the O3.

US27.17.16 THIRD GENERATION SPINAL FORCE BEAM (Fs3)

The latest update to spinal beam technology, the Third Generation Spinal Force Beam, is a formidable weapon and capable of engaging targets beyond SBM range. Unless they are equipped with ERBM or Heavy Bombardment Missiles, it will, for once, be the turn of missile ships to close through enemy fire before entering range of their own weapons.

HIGH TECH SIXTEEN SYSTEMS

US27.18.1 ADVANCED CAPITAL GUN/MISSILE LAUNCHER (Wca)

For years Terran scientists had been trying to make a breakthrough in launcher technology similar to that which created the ahead-of-its-time Advanced Gun/missile Launcher. The problem was that the Capital Gun/missile Launcher was a much more complex system and fired missiles up to two and a half times larger than the standard missile fired by the original Advanced Gun/missile Launcher.

An early spinoff of this research was the RSM Launcher but scientists had still not solved the size problem at this point. Eventually the breakthrough came at the recently rebuilt Taliaferro Research Centre on Galloway's World. The new modifications allowed the Advanced Capital Gun/Missile Launcher to fire two missiles per turn instead of one, making this a truly deadly weapon and an excellent way to run out of ammunition.

US27.18.2 SECOND GENERATION ANTI-MINE BALLISTIC MISSILE CARRIER POD (AMBAMP2)

This was a straightforward upgrade to the existing AMBAMP design to allow the pod to carry the new AMBAM3 missile. In

every other way it is identical to the original AMBAMP

US27.18.3 CAPITAL CONVERGING ANTI-MATTER BEAM (Cbc)

The original Converging Anti-matter Beam was a devastating weapon but the capital version is simply awesome. Unlike other beam weapons, the basic version of the weapon occupied six hull spaces. The necessary increase in weapon system size to achieve the desired improvements in range and damage output resulted in the capital version being one of the largest weapon systems in service, occupying nine hull spaces.

US27.18.4 SPICULUM FIGHTER MISSILE (fM5)

After the success of the Gladius Fighter Missile, Lockheed Dynamics were given a new contract to develop an eventual successor. They continued their previous record of excellence with the Spiculum Fighter Missile, a longer ranged and more accurate version of the Gladius. The Spiculum uses improved missile penetration aids, resulting in a -2 penalty to point defence, and has the same range as the old first generation standard missile.

US27.18.5 'GHOSTMAKER' FIFTH GENERATION ELECTRONIC COUNTERMEASURES (?5)

Fifth Generation ECM is a natural progression from Fourth Generation ECM and is designed solely for fire confusion. Despite having the same desired effect as its predecessor, Fifth Generation ECM has a very different design. Rather than deforming the drive field, Ghostmaker ECM creates false sensor images, fooling incoming missiles into detonating well away from their target. All fire targeted on a ship protected by Ghostmaker suffer a -5 penalty to hit, except for fighter and small craft weapons. Any fighter weapons fired from greater than one hex suffer a -3 penalty and fighter weapons fired at one hex or less suffer a -1 penalty.

Ghostmaker is particularly resistant to ECM and requires both applications of ECCM from three Third Generation ECM systems to burn through and eliminate the false sensor images (i.e Six applications of ECCM).

US27.18.6 'BRIGHTSTAR' FOURTH GENERATION LASER TORPEDO (LT4)

Laser Torpedoes were originally developed by the Zarkolyan Empire, a race with a passion (some might say obsession) with missile warfare. Historically, the warhead strength of Laser Torpedoes have usually been fifty percent or less of the equivalent fusion or anti-matter warhead as well as LTs being slightly less accurate. These disadvantages have been offset by the Laser Torpedoes ability to penetrate shields, and perhaps even more useful, the difficulties it presents for point defence.

The improving shaped charged warhead technology tilted the balance against Laser Torpedoes once again so the Zarkolyans, in conjunction with the rest of the Star Union, came up with the Brightstar, a fourth generation Laser Torpedo. The Brightstar has a warhead strength equal to double that of the fusion warhead for the missile on which Brightstar is installed.

US27.18.7 IMPROVED MISSILE BOX LAUNCHER (Wbi)

The Imperial Zarkolyan Fleet, proud of its Missile Box Launcher technology, was growing concerned over the advances made in rival missile systems. Considerable funds were therefore diverted into a research project to bring the box launcher up to date. The result was the Improved Box launcher which fulfilled some but not all of the Zarkolyan requirements.

Although the Improved Box Launcher is the same size as its predecessor, improvements in its internal configuration allow it to carry four spaces of missiles instead of three. Unfortunately, it still suffers from a slow reload rate and can only be reloaded at the rate of one csp per turn. No missiles can be fired while reloading is underway. Zarkolyan scientists are continuing their efforts to

improve the magazine-launcher feed technology.

US27.18.8 THIRD GENERATION CAPITAL PRIMARY BEAM (Pc3)

The Third Generation Capital Primary Beam was developed by the Terran Republic as an offshoot from their continuing work to improve Primary Beam firing rates. Although the latest version is still restricted to firing once per minute (every other tactical turn), it does include upgrades to range and power. While the change in capability is not as dramatic as the improvement from the First to Second Generation Capital Primary Beam, the Pc3 can engage targets at capital missile range. Beyond five light seconds, its damage output over time matches that of the Third Generation Capital Force Beam, making this weapon a realistic choice for inclusion in battleline armaments.

US27.18.9 THIRD GENERATION GUNBOAT (GB2)

The Gorm continued their efforts to keep gunboats up to date with fighters and produced this third generation model in response to the development of the Joint Space Fighter.

As well as further improvements in speed and range, the GB3 gains a sixth inline rack, capable of carrying an additional four XO points of fighter ordnance or an additional point of ship XO ordnance, and a fifty percent increase in the size of the internal weapon bay, allowing a fighter primary pack to be fitted. Gunboat datalink is once again upgraded and six GB3s may be formed into a squadron. The point defence remains the same as the GB2.

These additional capabilities allow a squadron of GB3s to close rapidly on their targets then ripple fire one hundred and eight fRAAMs or fighter missiles followed up with six internal primary beams and thirty-six fighter lasers, giving even a TL16 battlegroup something to worry about. In all other ways, the GB3 follows the same rules as the GB.

US27.18.10 THIRD GENERATION PLASMA GUN (Pg3)

The latest update to the plasma gun increases both its range and damage output by approximately a third. Although updates to plasma gun technology have happened infrequently over the last two centuries, each new version brings a potentially lethal short-range weapon to the arsenal of any navy, large or small.

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