The Battle Value (BV) system provides a numerical rating that represents the capabilities and survivability of every *BattleTech* unit: BattleMechs, IndustrialMechs, Combat Vehicles, Support Vehicles, aerospace fighters, conventional fighters, DropShips, Small Craft, ProtoMechs, conventional infantry and battle armor. With the Battle Value system, players can create fairly well matched battles by assembling two opposing forces, each with the same total BV ratings (see *Constructing a Battle Force*, p. 314) and equivalent force sizes. The BV ratings for combat-effective weapons and equipment are listed in the Inner Sphere, Clan and Conventional Infantry Weapons Battle Value tables at the end of this section, beginning on page 317.

The formulas in this section allow players to calculate the exact BV of any BattleMech, vehicle or other unit. However, the variety of hardware and units encompassed by *BattleTech* precludes an easy-to-use system. Players may find some of the formulas complex, and space prohibits a detailed analysis of the methods by which equipment values and other modifiers are derived.

This revised Battle Value system replaces the system first published in *Maximum Tech* and the *BattleTech Master Rules*. A list of Battle Values for all units with a published Record Sheet can be found on Catalyst Game Labs' Master Unit List website (http://www.masterunitlist.info/).

CALCULATING 'MECH BV

BattleMechs and IndustrialMechs share the same method of calculating their BV ratings, involving three main steps. First, calculate the 'Mech's Defensive Battle Rating (DBR). Second, calculate the Offensive Battle Rating (OBR). Finally, add the Defensive and Offensive Battle Ratings together for a combined BV and then round to the nearest whole number (round .5 up) to obtain the final BV. As you read each step, refer to pages 304–305 for an example of calculating the BV for a MON-66 *Mongoose*, a TDR-10SE *Thunderbolt*, and a WI-DM *DemolitionMech*.

STEP 1: CALCULATE DEFENSIVE BATTLE RATING

First, **ADD** the following figures:

Total Armor Factor x 2.5 x Armor Type Modifier
Consult the 'Mech Armor Type Modifier Table on page 315.

Total Internal Structure Points x 1.5 x Internal Structure Type Modifier x Engine Type Modifier
Consult the 'Mech Internal Structure Type Modifier Table on page 315 and the 'Mech Engine Type Modifier Table on page 315.

Gyro ('Mech Tonnage x 'Mech Gyro Modifier)
Consult the 'Mech Gyro Modifier Table on page 315.

Total BV of all Defensive Equipment
Defensive Equipment includes active probes, anti-missile system (including AMS ammo up to the BV of the systems themselves), antipersonnel pods, anti-battle armor pods, bridgelayers and ECM suites. All *TechManual* Defensive Equipment is identified on the Weapon and Equipment Battle Value Tables by a dagger footnote (†).

Then **SUBTRACT** the following figures. These subtractions cannot drop the running total below 1.

15 points per critical space of explosive ammo in the center torso, legs or head (Clan 'Mech)

15 points per critical space of explosive ammo in any location ('Mech with Inner Sphere XL engine)

15 points per critical space of explosive ammo in the center torso, legs or head, or not protected by CASE* in its location (Inner Sphere 'Mech with Standard or Light engines)

15 points per critical space of explosive ammo in arm not protected by CASE* in its location, or in the next location inward on the Damage Transfer Diagram (see p. 123, *TW*) (Inner Sphere 'Mechs with standard or light engines)

1 point per Gauss weapon critical space in the center torso, legs or head (Clan 'Mech)

1 point per Gauss weapon critical space in any location ('Mech with Inner Sphere XL engine)

1 point per Gauss weapon critical space in the center torso, legs or head, or not protected by CASE* in its location (Inner Sphere 'Mech with Standard or Light engine)

1 point per Gauss weapon critical space in arm not protected by CASE* in its location, or in the next location inward on the Damage Transfer Diagram (see p. 123, *TW*) (Inner Sphere 'Mechs with standard or light engines)

Note: Explosive ammo is any ammunition that may explode inside a 'Mech. Gauss weapons include Gauss rifles, HAGs and AP Gauss.

* – It is assumed Clan 'Mechs have CASE installed. If the design specifically did not pay the C-bill cost to install CASE then treat a Clan-built 'Mech as an Inner Sphere 'Mech for the purpose of these calculations.

Calculate 'Mech's Defensive Battle Rating

MULTIPLY the current total by the 'Mech's Defensive Factor. A 'Mech's Defensive Factor is based on the unit's highest potential target modifier (including bonuses for jump capability, enhanced movement capability from MASC or triple-strength myomer, and the maximum effects of stealth armor, such as the modifier for long range), as shown on the Defensive Factors Table and Defensive Factor Modifier Table (see p. 315). The final result is the 'Mech's Defensive Battle Rating (DBR).

STEP 2: CALCULATE OFFENSIVE BATTLE RATING

To calculate the Offensive Battle Rating, first calculate the Modified Battle Value of each weapon on the 'Mech. Then, make any required adjustments for the 'Mech's Heat Efficiency, offensive equipment, and tonnage to get the 'Mech's Weapon Battle Rating. Multiply the Weapon Battle Rating by the 'Mech's Speed Factor: the result is the Offensive Battle Rating.

Calculate Each Weapon's Modified BV

First, determine the Battle Value of each weapon and its ammunition (if applicable) carried by the 'Mech (see pp. 317-318). Then apply the following BV modifiers as necessary. All modifiers are cumulative. The result is the weapon's Modified BV, which is used in the steps that follow.

Excessive Ammunition: To prevent excessive ammo from distorting the Battle Value, the BV added for ammunition cannot exceed the unmodified BV of the weapon itself. If the BV of the ammo exceeds the weapon BV, reduce the ammo BV to equal the unmodified weapon BV. When a 'Mech carries several weapons of the same model, total the unmodified BV for all examples of that model and then the BV for all ammunition carried for that model before comparing the two BVs.

Rear-Firing Weapons: Rear-firing torso-, leg- and head-mounted weapons (but not their ammunition) count as half their normal BV value. If the unmodified BV of forward-firing weapons in those locations is less than the unmodified BV of rear-firing weapons, then halve the value of the forward-firing torso-, leg- and head-mounted weapons instead. When making heat adjustments to a weapon's BV (see below), switch the forward- and rear-firing arcs in an identical manner.

Artemis IV FCS: Increase by 20 percent the BV of any missile launcher equipped with Artemis IV. This increase does not apply to the launcher's ammunition.

Targeting Computer: Each weapon linked to a targeting computer (see p. 238) multiplies its BV by 1.25. Do not include ammunition when adjusting linked weapon BVs.

Determine 'Mech Heat Efficiency and Total Weapon Heat

Determine 'Mech Heat Efficiency: A weapon's Modified BV may need to be reduced to take into consideration the 'Mech's Heat Efficiency. To calculate 'Mech Heat Efficiency, add 6 to the unit's Heat Sink Capacity and subtract the heat generated when the 'Mech moves.

'Mech Heat Efficiency = 6 + Heat Sink Capacity – Movement Heat

Heat Sink Capacity: Heat Sink Capacity denotes the maximum number of Heat Points a 'Mech can dissipate in a single turn. Each single heat sink dissipates 1 point of heat. Double-capacity heat sinks dissipate 2 points of heat.

Movement Heat: Movement Heat is the amount of heat generated when the 'Mech moves in the most heat-intensive manner possible (Running or Jumping at its maximum capacity) during a single turn. If the 'Mech has stealth armor, add 10 to this value. ICE-powered IndustrialMechs do not generate heat when moving and so always have a Movement Heat Value of 0.

Determine Total Weapon Heat: Determine the total heat that the 'Mech would generate if it fired all its offensive weapons, including rear-firing weapons, in a single turn (Defensive Equipment is never figured in this value). Multiply by 2 the heat points generated by Ultra autocannons, multiply by 6 the heat points generated by rotary autocannons, reduce by half the heat points generated by Streak SRMs and reduce to one-quarter the heat points generated by one-shot weapons.

Calculate Weapon Battle Rating

Start a running Weapon Battle Rating total, beginning at 0. When instructed, add the specified amount to this total.

1. Add the Modified BV of any weapon on the 'Mech that does not generate heat when fired to the running Weapon Battle Rating total.
2. Add the BV of any ammunition and non-Defensive Equipment on the 'Mech to the running Weapon Battle Rating total.
3. If the 'Mech's Total Weapon Heat is equal to or less than the 'Mech's Heat Efficiency, add the Modified BV of all the 'Mech's remaining weapons to the running Weapon Battle Rating and proceed to Step 8. If the Total Weapon Heat is greater than the 'Mech's Heat Efficiency, start a running heat total, beginning at 0, and proceed to Step 4.
4. Ignoring weapons that generate no heat when fired, choose the weapon on the 'Mech with the highest Modified BV. If more than one weapon has the same Modified BV, choose the one that generates the least heat when fired. If multiple weapons of the same type are mounted, choose one randomly.
5. Add this weapon's Modified BV to the running Weapon Battle Rating total, and add its Heat Value to the running heat total.
6. If the running heat total is less than the 'Mech Heat Efficiency, repeat Steps 4-5 (ignoring any weapons already chosen). If the running heat total is equal to or has exceeded the Heat Efficiency, proceed to Step 7.
7. The weapon that causes the 'Mech's Heat Efficiency to be equaled or exceeded is still calculated at its full Modified BV. All remaining weapons are then added to the running Weapon Battle Rating total at half their Modified BV.
8. Add the total 'Mech tonnage to the running Weapon Battle Rating total. Note: TSM-equipped 'Mechs multiply their tonnage by 1.5. Industrial TSM-equipped 'Mechs multiply their tonnage by 1.15.

Having followed the steps above, the result is the 'Mech's Weapon Battle Rating. Proceed to the next step, *Calculate Offensive Battle Rating*.

Calculate Offensive Battle Rating

Determine Speed Factor: A 'Mech's Speed Factor reflects its ability to maneuver on the battlefield. To find the Speed Factor of a 'Mech, add together its Running MP and half its Jumping MP (rounded up). If the 'Mech has equipment that increases its Running and/or Jumping MP, such as MASC or triple-strength myomer (but not industrial triple-strength myomer), use the maximum MP it can legally generate for each movement type. Then consult the Speed Factor Table (see p. 315).

Multiply the Weapon Battle Rating by the Speed Factor to give the Offensive Battle Rating. Note: IndustrialMechs, unless equipped with Advanced Fire Control (see p. 69), multiply their Offensive Battle Rating by 0.9.

STEP 3: CALCULATE FINAL BATTLE VALUE

Calculate a 'Mech's final BV by adding its Defensive and Offensive Battle Ratings. If the 'Mech is equipped with a Small cockpit, multiply this total by .95. Round the remaining fraction to the nearest whole number (round .5 up).

This formula yields the Battle Value of a 'Mech piloted by a MechWarrior with the standard Gunnery 4 and Piloting 5 Skill levels. If the MechWarrior has higher or lower skill levels, multiply the BV by the appropriate skill level multiplier (see *Constructing a Battle Force*, p. 314).

CALCULATING THE BV OF:
A MON-66 *MONGOOSE*

CALCULATE DEFENSIVE BATTLE RATING

89 points Ferro-Fibrous Armor (1.0 multiplier)

Total Armor Factor x 2.5:   **89 x 2.5 x 1.0 = 222.5**

43 Points Endo Steel (1.0 multiplier) with Standard Engine (1.0 multiplier)

Total Internal Structure Points x 1.5 x 1.0 x 1.0:   **43 x 1.5 = 64.5**

Gyro: **25 x 0.5 = 12.5**

Total BV of all Defensive Equipment:

    1 Beagle Active Probe   **10**

                                  309.5

At a run, the *Mongoose* presents a Target Movement Modifier of +4. That gives the 'Mech a Defensive Factor of 1.4.

$$309.5$$
$$\times 1.4$$
Defensive Battle Rating = 433.3

CALCULATE OFFENSIVE BATTLE RATING

1. Calculate Each Weapon's Modified BV

The *Mongoose* is armed with 3 Medium Lasers and 1 Small Laser. It has no special equipment that modifies the BV of its weapons.

3 Medium Lasers:	**46 each**
1 Small Laser:	**9**

2. Determine 'Mech Heat Efficiency and Total Weapon Heat

The *Mongoose* has 10 single heat sinks. It cannot jump, and so its hottest movement mode is Running (2 points of heat). It is armed with 3 Medium Lasers (3 heat each) and 1 Small Laser (1 heat). Find its 'Mech Heat Efficiency and Total Weapon Heat.

'Mech Heat Efficiency = 6 + 10 - 2 = 14
Total Weapon Heat = 3 + 3 + 3 + 1 = 10

Because the Total Weapon Heat is lower than the 'Mech Heat Efficiency, there is no need to reduce the BV of any of its weapons. The Weapon Battle Rating is therefore the sum of these weapons' BVs, plus the 'Mech's tonnage.

3 Medium Lasers:	**3 x 46 = 138**
1 Small Laser:	**1 x 9 = 9**
25-ton 'Mech (No TSM):	**25**
	Weapon Battle Rating = 172

3. Calculate Offensive Battle Rating

Multiply the *Mongoose*'s Weapon Battle Rating by its Speed Factor. With a maximum Running MP of 12, and no Jumping MP, its Speed Factor is 1.89.

172 x 1.89 = 325.08

Offensive Battle Rating = 325.08

CALCULATE FINAL BATTLE VALUE
Defensive Battle Rating + Offensive Battle Rating = BV

433.3 + 325.08 = 758.38

***MON-66* Mongoose BV = 758**

CALCULATING THE BV OF:
A TDR-10SE *THUNDERBOLT*

CALCULATE DEFENSIVE BATTLE RATING
200 points Standard Armor (1.0 multiplier)

Total Armor Factor x 2.5:	**200 x 2.5 x 1.0 = 500**

104 points Endo Steel (1.0 multiplier) with Standard Engine (1.0 multiplier)

Total Internal Structure Points x 1.5 x 1.0 x 1.0:	**104 x 1.5 = 156**
Gyro:	**65 x 0.5 = 32.5**
Total BV of all Defensive Equipment:	
1 Guardian ECM Suite	**61**

749.5

SUBTRACT
15 points per critical space of explosive ammo in any location in center torso, legs or head, or not protected by CASE in its location (Inner Sphere 'Mechs with Standard or Light engines)

1 ton LRM 10 Ammo (LT)   **15**

                                                         749.5
                                                         - 15
                                                         734.5

At the run, with MASC engaged, the *Thunderbolt* presents a Target Movement Modifier of +3. That gives the 'Mech a Defensive Factor of 1.3.

                                                         734.5
                                                         x 1.3
                        Defensive Battle Rating = 954.85

CALCULATE OFFENSIVE BATTLE RATING

1. Calculate Each Weapon's Modified BV
The *Thunderbolt* is armed with 1 LRM 10, 1 ER PPC and 3 ER Medium Lasers. It has a Targeting Computer, which multiplies the BV of all but the LRM launcher by 1.25. The launcher's ammo does not exceed the BV of the launcher itself, and so does not have to be modified.

1 ton LRM 10 ammunition (at full value):   **11**
LRM 10:   **90**
ER PPC: **229 x 1.25 = 286.25**
3 ER Medium Lasers: **(62 x 1.25) = 77.5 each**

2. Determine 'Mech Heat Efficiency and Total Weapon Heat
The *Thunderbolt* has 12 double heat sinks. As it can jump, its hottest movement mode is Jumping (4 points of heat). It is armed with 1 ER PPC (15 heat), 1 LRM 10 (4 heat) and 3 ER Medium Lasers (5 heat each). Find its 'Mech Heat Efficiency and Total Weapon Heat.

'Mech Heat Efficiency = 6 + (12 x 2) - 4 = 26
Total Weapon Heat = 15 + 4 + 5 + 5 = 34

Because the Total Weapon Heat is higher than the 'Mech Heat Efficiency, its weapons must be sorted in order of Modified BV and a running heat total tracked to determine when weapon BVs should be halved. Ammunition and 'Mech weight are still handled as normal.

1 ton LRM 10 ammunition: **1 x 11 = 11**
ER PPC (modified by Targeting Computer):   **286.25**
    Running Heat Total: 0 + 15 = 15
LRM 10:   **90**
    Running Heat Total: 15 + 4 = 19
ER Medium Laser (modified by Targeting Computer): **77.5**
    Running Heat Total: 19 + 5 = 24
ER Medium Laser (modified by Targeting Computer): **77.5**
    Running Heat Total: 24 + 5 = 29 (Overheat)

Because the second ER Medium Laser has exceeded the Heat Efficiency of the *Thunderbolt* (26), all subsequent heat generating weapons will halve their Modified BV.

ER Medium Laser (modified by Targeting Computer):   **77.5 ÷ 2 = 38.75**
    Running Heat Total: (Overheat)

65-ton 'Mech (No TSM): **65**

Weapon Battle Rating = 646

3. Calculate Offensive Battle Rating

Multiply the *Thunderbolt*'s Weapon Battle Rating by its Speed Factor. With a maximum Running MP of 8 after taking into account MASC, and a Jumping MP of 4, its Speed Factor is 1.63.

646 x 1.63 = 1,052.98

Offensive Battle Rating = 1,052.98

CALCULATE FINAL BATTLE VALUE

Defensive Battle Rating + Offensive Battle Rating = BV

954.85 + 1,052.98 = 2,007.83

TDR-10SE *Thunderbolt* BV = 2,008

CALCULATING THE BV OF: A WI-DM *DEMOLITIONMECH*

CALCULATE DEFENSIVE BATTLE RATING

85 points Industrial Armor (1.0 multiplier)
Total Armor Factor x 2.5: **85 x 2.5 = 212.5**
58 Points Industrial (0.5 multiplier) with Inner Sphere Fuel Cell Engine (1.0 multiplier)
Total Internal Structure Points x 1.5 x 0.5 x 1.0: **58 x 1.5 x 0.5 x 1.0 = 43.5**
Gyro: **35 x 0.5 = 17.5**
Total BV of all Defensive Equipment: **0**
273.5

At the run, the *DemolitionMech* presents a Target Movement Modifier of +2. That gives the 'Mech a Defensive Factor of 1.2.

273.5
x 1.2
Defensive Battle Rating = 328.2

CALCULATE OFFENSIVE BATTLE RATING

1. Calculate Each Weapon's Modified BV

The *DemolitionMech* is armed with 1 Small Laser. It has no special equipment that modifies the BV of its weapons.

1 Small Laser: **9**

2. Determine 'Mech Heat Efficiency and Total Weapon Heat

The *DemolitionMech* has 1 single heat sink. It cannot jump, and so its hottest movement mode is Running (2 points of heat). It is armed with 1 Small Laser (1 heat). Find its 'Mech Heat Efficiency and Total Weapon Heat.

'Mech Heat Efficiency = 6 + 1 - 2 = 5
Total Weapon Heat = 1

Because the Total Weapon Heat is lower than the 'Mech Heat Efficiency, there is no need to reduce the BV of any of its weapons. The Weapon Battle Rating is therefore the sum of its equipment and weapon BVs, plus the 'Mech's tonnage.

Rock Cutter:	**6**
Wrecking Ball:	**8**
1 Small Laser:	**9**
35-ton 'Mech (No Industrial TSM):	**35**

Weapon Battle Rating = 58

3. Calculate Offensive Battle Rating

Multiply the *DemolitionMech*'s Weapon Battle Rating by its Speed Factor. With a maximum Running MP of 5, and no Jumping MP, its Speed Factor is 1.00.

58 x 1.00 = 58

Because the *DemolitionMech* is an IndustrialMech and does not have an Advanced Fire Control System, the Offensive Battle Rating needs to be multiplied by 0.9.

58 x 0.9 = 52.2

Offensive Battle Rating = 52.2

CALCULATE FINAL BATTLE VALUE

Defensive Battle Rating + Offensive Battle Rating = BV

328.2 + 52.2 = 380.4

WI-DM *DemolitionMech* BV = 380

CALCULATING PROTOMECH BV

The procedure for calculating the Battle Value (BV) of a ProtoMech is similar to that for 'Mechs. The player first determines the ProtoMech's Defensive and Offensive Battle Ratings and then combines them to produce the final BV. In all cases, retain fractions until reaching the final BV, then round to the nearest whole number (.5 rounds up). As you read each step, refer to page 307 for an example of calculating the BV for a *Delphyne-2*.

STEP 1: CALCULATE DEFENSIVE BATTLE RATING

First, **ADD** the following figures:

Total Armor Factor x 2.5
Total Internal Structure Points x 1.5
Total BV of all Defensive Equipment

Defensive Equipment includes active probes, anti-missile systems (including AMS ammo, up to the BV of the systems themselves) and ECM suites. All *TechManual* Defensive Equipment is identified on the Weapon and Equipment Battle Value Tables by a dagger footnote (†).

Calculate ProtoMech's Defensive Battle Rating

MULTIPLY the current total by the ProtoMech's Defensive Factor. The Defensive Factor is based on the unit's highest potential target modifier (including bonuses for jump capability and the use of a ProtoMech myomer booster), as shown on the Defensive Factors Table and Defensive Factor Modifier Table (see p. 315). ProtoMechs add 0.1 to the value from the table.

The final result is the ProtoMech's Defensive Battle Rating (DBR).

STEP 2: CALCULATE OFFENSIVE BATTLE RATING

To calculate the Offensive Battle Rating, calculate each weapon's BV in order to determine the Weapon Battle Rating. Then **MULTIPLY** the Weapon Battle Rating by the ProtoMech's Speed Factor.

Calculate Weapon Battle Rating

Determine the Battle Value of each weapon and its ammunition (if applicable) carried, as well as any equipment (see pp. 317-318).

Ammunition: If the ProtoMech carries a quantity of ammo other than a full ton, divide the kilograms of ammo carried by

1,000, then multiply the result by the BV of the ammo per ton. The result is the BV for the amount of ammo carried.

To prevent excessive ammo from distorting the Battle Value, the BV added for ammunition cannot exceed the BV of the weapon itself. If the ammo BV exceeds that of the weapon, reduce the ammo BV to match the weapon BV.

Calculate Offensive Battle Rating

Determine Speed Factor: A ProtoMech's Speed Factor reflects its ability to maneuver on the battlefield. To find the Speed Factor, add together the ProtoMech's Running MP and half its Jumping MP (rounded up). Add 1 to the result if the ProtoMech is equipped with a myomer booster. Then consult the Speed Factor Table (see p. 315).

Multiply the Weapon Battle Rating by the listed Speed Factor to give the Offensive Battle Rating.

STEP 3: CALCULATE FINAL BATTLE VALUE

Players calculate the BV of a ProtoMech by adding the ProtoMech's Defensive and Offensive Battle Ratings. Round the remaining fraction to the nearest whole number (.5 rounds up).

This formula yields the Battle Value of a ProtoMech piloted by a warrior with the standard Gunnery Skill level of 4. If the warrior has a higher or lower skill level, multiply the BV by the appropriate skill level multiplier (see *Constructing a Battle Force*, p. 314).

CALCULATING THE BV OF:
A *DELPHYNE*-2

CALCULATE DEFENSIVE BATTLE RATING

Total Armor Factor x 2.5:	**40 x 2.5 = 100**
Total Internal Structure Points x 1.5:	**20 x 1.5 = 30**
Total BV of all Defensive Equipment:	**0**
	130

At a run or when jumping, the *Delphyne*-2 presents a Target Movement Modifier of +3. That gives the ProtoMech a Defensive Factor of 1.3 + 0.1 (because it is a ProtoMech) = 1.4.

<div align="center">

130
x 1.4
Defensive Battle Rating = 182

</div>

CALCULATE OFFENSIVE BATTLE RATING

1. Calculate Weapon Battle Rating

The *Delphyne*-2 is armed with 2 ER Micro Lasers and 2 SRM 3s. The *Delphyne*-2 carries 20 shots for its SRM 3, or 60 missiles, which weigh 10 kg each (see p. 88, *ProtoMech Ammunition Weight Table*).

Ammunition (SRM) 60:	**60 x 10 = 600**

600 kg is less than a full ton of SRM ammunition so it must calculate the modified BV for its ammunition. SRM 3 ammunition has a BV of 4 for each full ton.

600 kg of SRM 3 ammunition:	**(600 ÷ 1,000) x 4 = 2.4**

No weapon has an ammunition BV greater than the BV of the weapon, so no further modifications to BV are needed.

2 ER Micro Lasers:	**2 x 7 = 14**
2 SRM-3s:	**2 x 30 = 60**
Ammunition (SRM) 60 (at full value):	**2.4**
	76.4

2. Calculate Offensive Battle Rating

Multiply the *Delphyne*'s Weapon Battle Rating by its Speed Factor. With a maximum Running MP of 8, and a Jumping MP of 5, its Speed Factor is 1.76.

76.4 x 1.76 = 134.464
Offensive Battle Rating = 134.464

CALCULATE FINAL BATTLE VALUE

Defensive Battle Rating + Offensive Battle Rating = BV

182 + 134.464 = 316.464

***Delphyne-2* BV = 316**

CALCULATING VEHICLE BV

The procedure for calculating the Battle Value (BV) of Combat Vehicles and tracked, wheeled, hover, VTOL, WiGE and naval Support Vehicles is similar to that for 'Mechs. First determine the vehicle's Defensive and Offensive Battle Ratings, and then combine them to produce the final BV. Retain fractions until reaching the final BV, then round to the nearest whole number (.5 rounds up). As you read each step, refer to page 308 for an example of calculating the BV for a CellCo Ranger APC and a Hephaestus OmniVehicle.

For Airship and Fixed Wing Support Vehicles, compute the unit's BV using the rules for Aerospace Units, starting on page 312.

STEP 1: CALCULATE DEFENSIVE BATTLE RATING
First, **ADD** the following figures:

Total Armor Factor x 2.5
(Support Vehicles: multiply by BAR ÷ 10)

Total Internal Structure Points x 1.5 (including rotor and turret internal structure)

Total BV of all Defensive Equipment
Defensive Equipment includes active probes, anti-missile systems (including AMS ammo, up to the BV of the systems themselves) and ECM suites. All *TechManual* Defensive Equipment is identified on the Weapon and Equipment Battle Value Tables by a dagger footnote (†).

Calculate the Vehicle's Defensive Battle Rating
MULTIPLY the current value by the appropriate modifier from the Unit Type Modifiers Table (see p. 316). The Unit Type Modifier represents a unit's terrain restrictions and vulnerabilities to critical damage. Surface vessels, hydrofoils and submarines are considered naval vessels for this purpose.

Next, **MULTIPLY** the current total by the vehicle's Defensive Factor. The Defensive Factor is based on the unit's highest potential target Modifier, as shown on the Defensive Factors Table and Defensive Factor Modifier Table (see p. 315).

The final result is the vehicle's Defensive Battle Rating (DBR).

STEP 2: CALCULATE OFFENSIVE BATTLE RATING
To calculate the Offensive Battle Rating, calculate each weapon's Modified BV in order to determine the Weapon Battle Rating. Then **MULTIPLY** the Weapon Battle Rating by the Vehicle's Speed Factor.

Calculate Each Weapon's Modified BV
First, determine the Battle Value of each weapon and its ammunition (if applicable) carried (see pp. 317-318). Then apply the following BV modifiers as necessary. All modifiers are cumulative. The result is the weapon's Modified BV, which is used in the steps that follow.

Support Vehicles: Adjust the Battle Value of all heavy weapons and their ammunition by the fire control multiplier from the Offensive BV Adjustment Table (see p. 316). Players need not adjust light and medium weapons.
Turret-Mounted Weapons: Weapons mounted in a turret are not included in any arc, and their full BV value is always used.
Excessive Ammunition: To prevent excessive ammo from distorting the Battle Value, the BV added for ammunition

cannot exceed the unmodified BV of the weapon itself. If the BV of the ammo exceeds the weapon BV, reduce the ammo BV to equal the unmodified weapon BV. If the unit has several weapons of the same model, total the unmodified BV for all examples of that model and then the BV for all ammunition carried for that model before comparing the two BVs.

Rear-Firing Weapons: Rear-firing weapons (but not their ammunition) count as half their normal BV value. If the unmodified BV of forward-arc weapons is less than the unmodified BV of rear-arc weapons, then halve the value of the forward-arc weapons instead. When making heat adjustments to a weapon's BV (see below), switch the forward- and rear-firing arcs in an identical manner.

Artemis IV FCS: Increase by 20 percent the BV of any missile launcher equipped with Artemis IV. This increase does not apply to the launcher's ammunition.

Targeting Computer: Each weapon linked to a targeting computer (see p. 238) multiplies its BV by 1.25. Do not include ammunition when adjusting linked weapon BVs.

Calculate Weapon Battle Rating

Add the Modified BV of all weapons, ammunition and equipment.

Next, **ADD** total Vehicle tonnage ÷ 2

Calculate Offensive Battle Rating

Determine Speed Factor: Use the Vehicle's Flanking MP rating and consult the Speed Factor Table (p. 315).

Multiply the vehicle's Weapon Battle Rating and Speed Factor to determine its Offensive BV.

STEP 3: CALCULATE FINAL BATTLE VALUE

Add the Defensive and Offensive Battle Value Ratings and round the resulting sum to the nearest whole number. The result is the vehicle's BV.

This formula yields the BV of a vehicle controlled by a crew with the standard Gunnery 4 and Piloting/Driving Skill 5. If a crew with a different skill level pilots the unit, multiply the BV by the appropriate skill level multiplier (see *Constructing a Battle Force*, p. 314).

CALCULATING THE BV OF: A CELLCO RANGER APC

CALCULATE DEFENSIVE BATTLE RATING

The CellCo Ranger is equipped with 38 points of BAR 7 armor.

Total Armor Factor x (BAR ÷ 10):	**38 x 0.7 = 26.6**
Total Internal Structure Points x 1.5:	**10 x 1.5 = 15**
Total BV of all Defensive Equipment:	**0**
	41.6
	41.6
Multiply by Unit Type Modifier (Wheeled):	**x 0.8**
	33.28

At Flanking speed, the CellCo Ranger presents a Target Movement Modifier of +2. That gives the vehicle a Defensive Factor of 1.2.

<div align="center">

33.28
x 1.2
Defensive Battle Rating = 39.94

</div>

CALCULATE OFFENSIVE BATTLE RATING

1. Calculate Each Weapon's Modified BV

The CellCo Ranger is armed with 1 Machine Gun with a half-ton of ammunition. It is a Support Vehicle and does not mount a Basic or Advanced Fire Control System, so all its weapons and ammunition BV must be multiplied by 0.8.

1 Machine Gun:	**5 x 0.8 = 4**

Ammunition (MG) 100:	$1 \times 0.8 = 0.8$

2. Calculate Weapon Battle Rating

1 Machine Gun (modified for no Fire Control):	**4**
Ammunition (MG) 100 (modified for no Fire Control):	**0.8**
	4.8

Add Total Vehicle Tonnage ÷ 2:	$17 \div 2 = 8.5$

	4.8
	8.5
Weapon Battle Rating = 13.3	

3. Calculate Offensive Battle Rating

Use the Flanking MP rating for all vehicles except unmotorized trailers (assume their Flanking MP is 1) and consult the Speed Factor Table.

$$13.3 \times 1.00 = 13.3$$

Offensive Battle Rating = 13.3

CALCULATE FINAL BATTLE VALUE

Defensive Battle Rating + Offensive Battle Rating = BV

$$39.94 + 13.3 = 53.24$$

CellCo Ranger BV = 53

CALCULATING THE BV OF: A HEPHAESTUS OMNIVEHICLE (PRIMARY CONF)

CALCULATE DEFENSIVE BATTLE RATING

Total Armor Factor x 2.5:	$96 \times 2.5 = 240$
Total Internal Structure Points x 1.5:	$15 \times 1.5 = 22.5$
Total BV of all Defensive Equipment:	
1 Active Probe and 1 ECM Suite	**73**

	335.5

	335.5
Multiply by Unit Type Modifier (Hover):	**x 0.7**
	234.85

At Flanking speed, the Hephaestus presents a Target Movement Modifier of +4. That gives the vehicle a Defensive Factor of 1.4.

	234.85
	x 1.4

Defensive Battle Rating = 328.79

CALCULATE OFFENSIVE BATTLE RATING

1. Calculate Weapon Battle Rating

2 Medium Pulse Lasers (Clan):	**2 x 111 = 222**
Add Total Vehicle Tonnage ÷ 2:	**30 ÷ 2 = 15**

237

2. Calculate Offensive Battle Rating
Use the Flanking MP rating for all vehicles except unmotorized trailers (assume their Flanking MP is 1) and consult the Speed Factor Table.

237 x 1.89 = 447.93

Offensive Battle Rating = 447.93

CALCULATE FINAL BATTLE VALUE

Defensive Battle Rating + Offensive Battle Rating = BV

328.79 + 447.93 = 776.72

Hephaestus (Prime) BV = 777

CALCULATING CONVENTIONAL INFANTRY BV
The process for calculating the Battle Value (BV) of a conventional infantry unit is similar to that for 'Mechs and vehicles. First determine the unit's Defensive and Offensive Battle Ratings, and then combine them to produce the final BV. Retain fractions until reaching the final BV, then round to the nearest whole number (.5 rounds up). As you read each step, refer to page 310 for an example of calculating the BV for an Anti-'Mech Jump Infantry Platoon.

STEP 1: CALCULATE DEFENSIVE BATTLE RATING
MULTIPLY the number of troopers by 1.5 and the unit's Defensive Factor. The Defensive Factor is based on the unit's highest potential target modifier (including bonuses for jump capability), as shown on the Defensive Factors Table (p. 315).
The final result is the conventional infantry unit's Defensive Battle Rating.

STEP 2: CALCULATE OFFENSIVE BATTLE RATING
To calculate the Offensive Battle Rating, determine the Weapon Battle Rating and then **MULTIPLY** the result by the infantry unit's Speed Factor.

Calculate Weapon Battle Rating
Add the BV ratings of all individual and support weapons (see the Conventional Infantry Weapons BV Table, p. 319). If the unit is capable of performing anti-'Mech attacks, add these amounts again (all non-mechanized conventional infantry has this capability).

Multiply Weapon Battle Rating by Speed Factor
Multiply the unit's Weapon Battle Rating and Speed Factor to determine its Offensive BV Rating. Use the infantry unit's fastest movement mode; for example, jump infantry use their Jumping movement.

STEP 3: CALCULATE FINAL BATTLE VALUE
Add the Defensive Battle Rating and the Offensive Battle Rating and round to the nearest whole number (0.5 rounds up).
This formula yields the Battle Value of an infantry unit with the standard Gunnery 4 and Anti-'Mech 5 Skill ratings. If the unit possesses higher or lower skill ratings, multiply the BV by the appropriate skill rating multiplier (see *Constructing a Battle Force*, p. 314). Remember that, for infantry units with the Mechanized Motive Type, as well as units which lack the Anti-'Mech Infantry kits referred to on page 155, the unit's Anti-'Mech Skill should be treated as fixed at 8 for this purpose.

CALCULATING THE BV OF: AN ANTI-'MECH JUMP INFANTRY PLATOON

CALCULATE DEFENSIVE BATTLE RATING

(Number of Troopers x 1.5): (**21 x 1.5) = 31.5**

The Anti-'Mech Jump Infantry platoon receives a Target Movement Modifier of +2. That gives it a Defensive Factor of 1.2.

31.5
x 1.2
Defensive Battle Rating = 37.8

CALCULATE OFFENSIVE BATTLE RATING

1. Calculate Weapon Battle Rating

Individual Weapons
18 Blazer Rifles: **18 x 1.79 = 32.22**

Support Weapons
3 Heavy Support Lasers: **3 x 17.34 = 52.02**

Anti-'Mech Attack Capability
Individual Weapons BV + Support Weapons BV: **32.22 + 52.02 = 84.24**

32.22
52.02
84.24
Weapon Battle Rating = 168.48

2. Calculate Offensive Battle Rating
Multiply the unit's Weapon Battle Rating by its Speed Factor.

168.48 x 0.77 = 129.73

Offensive Battle Rating = 129.73

CALCULATE FINAL BATTLE VALUE
Defensive Battle Rating + Offensive Battle Rating = Platoon BV

37.8 + 129.73 = 167.53

Anti-'Mech Infantry Platoon BV = 168

CALCULATING BATTLE ARMOR BV

The procedure for calculating the Battle Value (BV) of Battle Armor very similar to that for calculating the BV for 'Mechs and vehicles. The Defensive and Offensive Battle Ratings of the Battle Armor are determined and then combined to produce the final BV. In all cases retain fractions until reaching the final BV, then round to the nearest whole number (.5 rounds up). As you read each step, refer to page 311 and pages 310-311 for an example of calculating the BV for a Purifier unit and a Grenadier unit.

STEP 1: CALCULATE DEFENSIVE BATTLE RATING

First, **ADD** the following figures:

Total Armor Points x Armor BV (not including the 1 point for the warrior) + 1
> Fire-resistant armor has a BV of 3.5; all other armor has a BV of 2.5.
> Add 1 to the total for each of these systems the battle armor mounts (if any): Improved Sensors, Active Probes, or ECM.

Next, **MULTIPLY** the current value by the battle armor unit's Defensive Factor. A battle armor unit's Defensive Factor is based on its highest potential target movement modifier (including bonuses for jump capability and enhanced movement), as shown on the Defensive Factors Table (see p. 315). In addition, add to the Defensive Factor any appropriate modifiers from the Defensive Factor Modifier Table. The final result is the battle armor's Defensive Battle Rating.

STEP 2: CALCULATE OFFENSIVE BATTLE RATING

Calculate Weapon Battle Rating
ADD the following:

Direct Fire Weapons Battle Rating: Add the BV of all direct-fire weapons. Direct-fire weapons are all weapon systems except SRM launchers, advanced SRM launchers, MRM launchers, rocket launchers, LRM launchers, Narc (Compact) and Popup Mine. Do not factor BV for any ammunition used by direct fire weapons.

Missile Weapon Battle Rating: Calculate the Missile Weapon Battle Ratting for SRMs, advanced SRMs, MRMs, rocket launchers and LRMs. Use the BV of the launcher as normal. Calculate the ammunition BV for the kilograms of ammo carried proportionate to the BV for a full ton (1,000 kg) of that type of ammunition. That is, divide the kilograms of ammo carried by 1,000, and multiply the result by the BV of a full ton of the required ammunition type. Keep any fractional results.

Anti-'Mech Attacks: If the unit can perform Swarm Attacks, add the BV of all direct-fire weapons plus the BV of vibroclaws and/or claws and magnets that aid Swarm operations.

Anti-Personnel Weapons: Add the BV of anti-personnel weapons from the Conventional Infantry Weapons BV Table on page 319.

Squad Support Weapon: The BV of a Squad Support Weapon is equal to the total BV of the weapon divided by the number of troopers in the unit. Squad Support Weapons have their BV divided between all units, and so Inner Sphere units will only use 1/4 of the BV, whereas a Clan unit uses 1/5 of the BV and ComStar/Word of Blake units use 1/6.

Other Equipment: Add BV for other Offensive equipment. The final sum is the total Weapon Battle Rating.

Multiply the Weapon Battle Rating by the Battle Armor's Speed Factor
Multiply the battle armor's Weapon Battle Rating by its Speed Factor as shown on the Speed Factor Table. Use the movement mode that gives the highest movement rate.
This calculation gives the battle armor unit's final Weapon Battle Rating.

STEP 3: CALCULATE FINAL BATTLE VALUE
The BV of a single suit of battle armor is calculated by adding the battle armor's Defensive and Offensive Battle Ratings. To determine the BV for a squad / point / Level I, multiply this value by the Modifier for the appropriate size of battle armor unit from the Battle Armor Unit Size Modifier Table (p. 316). Inner Sphere squads usually contain four troopers, Clan Stars contain five troopers and a ComStar/Word of Blake Level I contains six troopers.
This formula yields the Battle Value of a battle armor unit with the standard Gunnery 4 and Anti-'Mech 5 Skill ratings. If the unit possesses higher or lower skill ratings, multiply the BV by the appropriate skill rating multiplier (see *Constructing a Battle Force*, p. 314).

CALCULATING THE BV OF: A PURIFIER LEVEL I

CALCULATE DEFENSIVE BATTLE RATING

6 points Mimetic Armor (BV 2.5 per point)
(Total Armor x Armor BV) + 1: (**6 x 2.5) + 1 = 16**

The Purifier has a Jumping MP of 3, and so receives a Target Movement Modifier of +2. That gives it a Defensive Factor of 1.2 + 0.1 (because it is battle armor) + 0.3 (Mimetic Armor) = 1.6.

16
x 1.6
Defensive Battle Rating = 25.6

CALCULATE OFFENSIVE BATTLE RATING

1. Calculate Weapon Battle Rating

Direct-Fire Weapons
1 ER Small Laser: **1 x 17 = 17**

Missile Weapons
None **0**

Anti-'Mech Attacks
Direct-Fire Weapons: **17**

Anti-Personnel Weapons
None **0**

Squad Support Weapons
None **0**

Other Equipment
None **0**
34

2. Calculate Offensive Battle Rating
Multiply the unit's Weapon Battle Rating by its Speed Factor.

34 x 0.77 = 26.18

Offensive Battle Rating = 26.18

CALCULATE FINAL BATTLE VALUE
Defensive Battle Rating + Offensive Battle Rating = BV per suit

25.6 + 26.18 = 51.78
Individual Purifier BV = 52

There are six suits of battle armor in a Level I Purifier unit, yielding a BV Modifier of 9.

51.78 x 9.0 = 466.02
Purifier Level I BV = 466

CALCULATING THE BV OF:
A GRENADIER [SRM/SL] SQUAD

CALCULATE DEFENSIVE BATTLE RATING

9 points Stealth Armor (BV 2.5 per point)
(Total Armor x Armor BV) + 1:   (**9 x 2.5) + 1 = 23.5**

    The Grenadier has a ground MP of 2, and no jumping movement, and so receives a Target Movement Modifier of 0. That gives it a Defensive Factor of 1.0 + 0.1 (because it is battle armor) + 0.2 (Standard Stealth Armor) = 1.3

23.5
x 1.3
Defensive Battle Rating = 30.55

CALCULATE OFFENSIVE BATTLE RATING

1. Calculate Weapon Battle Rating

Direct-Fire Weapons
1 Small Laser: **1 x 9 = 9**

Missile Weapons
1 SRM 4:   **1 x 39 = 39**
Ammo (SRM 4) 7 (280 kg):   **(280/1,000) x 5 = 1.4**

Anti-'Mech Attacks
Not Applicable   **0**

Anti-Personnel Weapons
None   **0**

Squad Support Weapons
None   **0**

Other Equipment
None   **0**
49.4

2. Calculate Offensive Battle Rating
    Multiply the unit's Weapon Battle Rating by its Speed Factor.

49.4 x 0.65 = 32.11

Offensive Battle Rating = 32.11

CALCULATE FINAL BATTLE VALUE
Defensive Battle Rating + Offensive Battle Rating = BV per suit

30.55 + 32.11 = 62.66
Individual Grenadier BV = 63

    There are four suits of battle armor in a Grenadier squad, yielding a BV Modifier of 5.2.

63 x 5.2 = 325.832
Grenadier [SRM/SL] squad BV = 326

CALCULATING AEROSPACE BV
    The procedure for calculating the Battle Value (BV) of aerospace units is similar to that for 'Mechs. Determine the Defensive and Offensive Battle Ratings of the aerospace unit and combine them to produce the final BV. Retain fractions until reaching the final BV, then round to the nearest whole number (.5 rounds up). Refer to pages 313–314 for an example of

calculating BV for a TRB-D36 *Thunderbird* and a *Dragau II*.

STEP 1: CALCULATE DEFENSIVE BATTLE RATING
First, **ADD** the following numbers.

Total Armor Factor x 2.5 (Fighters, DropShips, Small Craft)
(Support Vehicles: multiply by BAR ÷ 10)
Structural Integrity x 2.0
Total BV of all Defensive Equipment

Defensive Equipment includes screen launchers, anti-missile systems and ECM (including ammo up to the BV of the systems and launchers themselves). All *TechManual* Defensive Equipment is identified on the Weapon and Equipment Battle Value Tables by a dagger footnote (†).

For aerospace fighters, small craft and conventional fighters, then **SUBTRACT** the following figures. (Explosive ammo is any ammunition that may explode inside an aerospace fighter. Gauss weapons include Gauss rifles, HAGs and AP Gauss.) These subtractions cannot drop the running total below 1.

15 points per type of explosive ammo (regardless of tonnage) in an Inner Sphere aerospace or small craft not equipped with CASE*

1 point per Gauss weapon in Inner Sphere aerospace or small craft not equipped with CASE*

* – It is assumed Clan aerospace units have CASE installed. If the design specifically did not pay the C-bill cost to install CASE then treat all Clan-built aerospace units as Inner Sphere aerospace units for the purpose of these calculations.

Calculate Defensive Battle Rating
MULTIPLY the resulting Defensive Battle Rating by the unit type multiplier from the Unit Type Modifiers Table (p. 316) to give the aerospace unit's final Defensive Battle Rating (DBR).

STEP 2: CALCULATE OFFENSIVE BATTLE RATING
To calculate the Offensive Battle Rating, first calculate the Modified Battle Value of each weapon on the unit. Then, make any required adjustments for the Heat Efficiency and equipment to get the unit's Weapon Battle Rating. Multiply the Weapon Battle Rating by the unit's Speed Factor: the result is the Offensive Battle Rating.

Calculate Each Weapon's Modified BV
First, determine the Battle Value of each weapon and its ammunition (if applicable) carried by the unit (see pp. 317-318). Then apply the following BV modifiers as necessary. All modifiers are cumulative. The result is the weapon's Modified BV, which is used in the steps that follow.

Excessive Ammunition: To prevent excessive ammo from distorting the Battle Value, the BV added for ammunition cannot exceed the unmodified BV of the weapon itself. If the BV of the ammo exceeds the weapon BV, reduce the ammo BV to equal the unmodified weapon BV. When a unit carries several weapons of the same model, total the unmodified BV for all examples of that model and then the BV for all ammunition carried for that model before comparing the two BVs.
Rear-Firing Weapons: Aft-mounted weapons (but not their ammunition) count as half their normal BV value (aft-side arcs are not considered). If the unmodified BV of nose-mounted weapons is less than the unmodified BV of rear-firing weapons, then halve the value of the forward-firing weapons instead. When making heat adjustments to a weapon's BV (see below), switch the nose- and aft-firing arcs in an identical manner. **Note**: DropShips do not use this modifier.
Artemis IV FCS: Increase by 20 percent the BV of any missile launcher equipped with Artemis IV. This increase does not apply to the launcher's ammunition.
Targeting Computer: Each weapon linked to a targeting computer (see p. 238) multiplies its BV by 1.25. Do not include ammunition when adjusting linked weapon BVs.

Determine Unit's Heat Efficiency
For aerospace fighters, Small Craft and DropShips, a weapon's Modified Battle Value may need to be reduced to take into consideration the unit's Heat Efficiency. The Heat Efficiency of a design is equal to its Heat Sink Capacity. Aerospace fighters and Small Craft add 6 to this value.

DropShip Heat Efficiency = Heat Sink Capacity

Heat Sink Capacity: Heat Sink Capacity denotes the maximum number of Heat Points the unit can dissipate in a single turn. Each single heat sink dissipates 1 point of heat. Double heat sinks dissipate 2 points of heat.

Determine Total Weapon Heat: Find and write down the total heat that the unit would generate if it fired all its offensive weapons, including rear-firing weapons, in a single turn (Defensive Equipment is never figured in this value). Multiply by 2 the heat points generated by Ultra autocannons, multiply by 6 the heat points generated by rotary autocannons, reduce by half the heat points generated by Streak SRMs and reduce to one-quarter the heat points generated by one-shot weapons.

Calculate Weapon Battle Rating
For aerospace fighters, conventional fighters and Small Craft:

Start a running Weapon Battle Rating total, beginning at 0. When instructed, add the specified amount to this total.

1. Add the Modified BV of any weapon on the unit that does not generate heat when fired to the running Weapon Battle Rating total.
2. Add the BV of any ammunition and non-Defensive Equipment on the unit to the running Weapon Battle Rating total.
3. If the unit's Total Weapon Heat is equal to or less than its Heat Efficiency, add the Modified BV of all the unit's remaining weapons to the running Weapon Battle Rating total and proceed to *Calculate Offensive Battle Rating*. If the Total Weapon Heat is greater than the unit's Heat Efficiency, start a running heat total, beginning at 0, and proceed to Step 4.
4. Ignoring weapons that generate no heat when fired, choose the weapon on the unit that has the highest Modified BV. If more than one weapon has the same Modified BV, choose the one that generates the least heat when fired. If multiple weapons of the same type are mounted, choose one randomly.
5. Add this weapon's Modified BV to the running Weapon Battle Rating total, and add its Heat Value to the running heat total.
6. If the running heat total is less than the unit's Heat Efficiency, repeat Steps 4-5 (ignoring any weapons already chosen). If the running heat total is equal to or has exceeded the Heat Efficiency, proceed to Step 7.
7. The weapon that causes the Heat Efficiency to be equaled or exceeded is still calculated at its full Modified BV. All remaining weapons are then added to the running Weapon Battle Rating total at half their Modified BV.

For DropShips:
DropShips calculate their Weapon Battle Rating by firing arc, instead of by individual weapons, reflecting their firing by weapon bay and generating heat by firing arcs.

1. Calculate individual firing arc BVs: First determine the total Modified BV of each individual firing arc (Nose, Aft, Fore (Wing) Left/Right, Aft (Rear Wing (Left/Right). Do not include ammunition or equipment at this time.
2. Determine the "Front" firing arc: Compare these BV totals. The arc with the highest BV becomes the "Front" arc for calculating BV and Heat Efficiency.
3. Calculate the BV for the "Front" arc: Add the BV of any ammunition located in "Front" arc to the "Front" arc total. "Front" BV is always factored at 100% even if the DropShip will overheat firing the "Front" arc.
4. Determine the "Left Side" firing arc: Look at the Battle Value of the two arcs adjacent to the "Front" arc. The one with the highest BV becomes the "Left Side" firing arc. If both arcs are of equal BV, choose one at random.
5. Calculate the BV for the "Left Side" arc: Add the BV of ammunition in the "Left Side" to the BV total for that side obtained in Step 1. If the DropShip has exceeded its DropShip Heat Efficiency after firing the "Front" arc, multiply the "Left Side" arc BV by 0.5.
6. Determine the "Right Side" firing arc: The remaining arc adjacent to the "Front" arc now becomes the "Right Side" firing arc.
7. Calculate the BV for the "Right Side" arc: Add the BV of ammunition in the "Right Side" to the BV total for that side obtained in Step 1. If the DropShip has not exceeded its DropShip Heat Efficiency after firing the "Left Side" arc, multiply the "Right Side" BV by 0.5. If the DropShip has exceeded its DropShip Heat Efficiency, then the multiply the "Right Side" BV by 0.25.
8. Total remaining firing arcs: The remaining three arcs are now considered the "Rear" firing arc. Add the BV of ammunition in these arcs to the BV total for those arcs obtained in Step 1. Multiply the "Rear" BV by 0.25.
9. Add the BV of any equipment with a BV rating.

Having followed Steps 1-7 (1-9 for DropShips), the result is the unit's Weapon Battle Rating. Proceed to *Calculate*

Offensive Battle Rating.

Determine Unit's Speed Factor: A unit's Speed Factor reflects its ability to maneuver on the battlefield. To find the Speed Factor of any aerospace unit, cross-reference its Maximum Thrust Value with the Speed Factor Table (see p. 315).

Multiply the Total Weapon Battle Rating by the Speed Factor to find the unit's Offensive Battle Rating.

Airships: Use the Maximum Thrust rating for airships, but round up to the next whole number for vehicles with fractional thrust ratings.

STEP 3: CALCULATE FINAL BATTLE VALUE

An aerospace unit's final BV is calculated by adding its Defensive and Offensive Battle Ratings. Round any remaining fractions to the nearest whole number (.5 rounds up).

CALCULATING THE BV OF: A TRB-D36 *THUNDERBIRD* AEROSPACE FIGHTER

CALCULATE DEFENSIVE BATTLE RATING

Total Armor Factor x 2.5:	**224 x 2.5 = 560**
Structural Integrity x 2:	**10 x 2 = 20**
Total BV of all Defensive Equipment:	**0**
	580

SUBTRACT
  15 points per type of explosive ammo

LRM Ammunition:	**15**
	580
	– 15
	565
	565
Multiply by the Unit Type Modifier:	**x 1.2**
	678

Defensive Battle Rating = 678

CALCULATE OFFENSIVE BATTLE RATING
1. Calculate Each Weapon's Modified BV

The *Thunderbird* is armed with 3 Large Lasers, 2 LRM 20s and 5 Medium Lasers. It has no special equipment that modifies the BV of its weapons, but two of its Medium Lasers are rear-firing. Its LRM ammo does not exceed the BV of the launchers, and so does not have to be modified.

4 tons LRM 20 ammunition (at full value):	**92**
2 LRM 20s:	**181 each**
3 Large Lasers:	**123 each**
3 Medium Lasers:	**46 each**
2 Medium Lasers (aft-mounted):	(**46 ÷ 2**) = **23 each**

2. Determine Heat Efficiency and Total Weapon Heat

The *Thunderbird* has 25 single heat sinks. It is armed with 3 Large Lasers (8 heat each), 2 LRM 20s (6 heat each) and 5 Medium Lasers (3 heat each). Find its Heat Efficiency and Total Weapon Heat.

Unit Heat Efficiency = 6 + 25 = 31
Total Weapon Heat = 8 + 8 + 8 + 6 + 6 + 3 + 3 + 3 + 3 + 3 = 51

Because the Total Weapon Heat is higher than the Heat Efficiency, its weapons must be sorted in order of Modified BV and a running heat total tracked to determine when weapon BVs should be halved. Ammunition is still handled as normal.

4 tons LRM 20 ammunition:	**(4 x 23) = 92**
LRM 20:	**181**
Running Heat Total: 0 + 6 = 6	
LRM 20:	**181**
Running Heat Total: 6 + 6 = 12	
Large Laser:	**123**
Running Heat Total: 12 + 8 = 20	
Large Laser:	**123**
Running Heat Total: 20 + 8 = 28	
Large Laser:	**123**
Running Heat Total: 28 + 8 = 36 (Overheat)	

Because the third Large Laser exceeds the Heat Efficiency of the *Thunderbird* (31), all subsequent heat-generating weapons will halve their Modified BV.

Medium Laser:	**46 ÷ 2 = 23**
Running Heat Total: (Overheat)	
Medium Laser:	**46 ÷ 2 = 23**
Running Heat Total: (Overheat)	
Medium Laser:	**46 ÷ 2 = 23**
Running Heat Total: (Overheat)	
Medium Laser (Aft):	**23 ÷ 2 = 11.5**
Running Heat Total: (Overheat)	
Medium Laser (Aft):	**23 ÷ 2 = 11.5**
Running Heat Total: (Overheat)	
	Weapon Battle Rating = 915

3. Calculate Offensive Battle Rating

Multiply the *Thunderbird*'s Weapon Battle Rating by its Speed Factor. With a Maximum Thrust of 8, its Speed Factor is 1.37.

915 x 1.37 = 1,253.55

Offensive Battle Rating = 1,253.55

CALCULATE FINAL BATTLE VALUE

Defensive Battle Rating + Offensive Battle Rating = BV

678 + 1,253.55 = 1,931.55

TRB-D36 *Thunderbird* BV = 1,932

CALCULATING THE BV OF: A *DRAGAU II*-CLASS DROPSHIP

CALCULATE DEFENSIVE BATTLE RATING

Total Armor Factor x 2.5:	**1,372 x 2.5 = 3,430**
Structural Integrity x 2:	**15 x 2 = 30**

Total BV of Defensive Equipment

6 Anti-Missile Systems:		**6 x 32 = 192**
10 tons Ammo (AMS) 120 rounds:		**10 x 11 = 110 (max. 192)**
		302
		3,762

		3,762
Multiply by the Unit Type Modifier:		**x 1.0**
		3,762

Defensive Battle Rating = 3,762

CALCULATE OFFENSIVE BATTLE RATING

Due to space restrictions, the steps below deviate in terms of presentation from the explanation above.

1. Determine Unit Heat Efficiency and Total Weapon Heat

Find the DropShip's Heat Efficiency and the total heat generated by firing all weapons.

DropShip Heat Efficiency = 244

2. Calculate Weapon Battle Rating and Arc Heat for each firing arc

Add up the Modified BV of all weapons in a given firing arc. Do not calculate ammo or equipment at this time.

ARC/WEAPON	Total Heat	BV
Nose:		
2 Heavy Gauss Rifles (2 heat)	2 x 2 = 4	**2 x 346 = 692**
6 Heavy PPCs (15 heat)	6 x 15 = 90	**6 x 317 = 1,902**
	94	**2,594**
Wing:		
2 LRM 15s + Artemis (5 heat)	2 x 5 = 10	**2 x (136 x 1.2) = 326.4**
2 ER PPCs (15 heat)	2 x 15 = 30	**2 x 229 = 458**
2 Large VSP Lasers (10 heat)	2 x 10 = 20	**2 x 123 = 246**
	60	**1,030.4**
Aft Wing:		
2 Large VSP Lasers (10 heat)	2 x 10 = 20	**2 x 123 = 246**
	20	**246**
Aft:		
2 Large VSP Lasers (10 heat)	2 x 10 = 20	**2 x 123 = 246**
2 ER Medium Lasers (5 heat)	2 x 5 = 10	**2 x 62 = 124**
	30	**370**

The *Dragau*'s Nose arc generates the greatest BV. This makes the Nose the "Front" of the DropShip. Now that this has been determined, add the BV of ammunition in that arc and calculate the Nose Weapon Battle Rating. The "Front" is always calculated at 100% BV, even if it exceeds the Heat Efficiency (244) of the DropShip.

Base "Front" Battle Value	**2,594**
8 tons of Heavy Gauss ammo (8 x 43)	**344**
Running Heat Total: 0 + 94 = 94	

"Nose" BV = 2,938

Because the two adjacent arcs are identical Wing arcs, the left one is chosen as the "Left Side" arc. As the *Dragau*'s "Front Side" does not exceed its Heat Efficiency, this "Side" is calculated at 100% of its total BV. Had the Heat Efficiency been exceeded, the "Left Side" would have been calculated at 50% of its BV.

Base "Left Side" Battle Value	**1,030.4**
6 tons of LRM ammo (6 x 17)	**102**

Running Heat Total: 94 + 60 = 154

"Left Side" BV = 1,132.4

The right wing becomes the "Right Side" arc. As the *Dragau* has still not exceeded its Heat Efficiency, the "Right Side" is calculated at 50% of its total BV. Had the Heat Efficiency been exceeded, the "Right Side" would have been calculated at 25% of its BV.

Base "Right Side" Battle Value	**1,030.4**
6 tons of LRM ammo (6 x 17)	**102**
	1,132.4

"Right Side" BV (1,132.4 ÷ 2) = 566.2

All remaining arcs are now considered the "Rear" and are calculated at 25% of their total BV.

Base Left Aft Wing:	**246 x .25 = 61.5**
No Ammo	**0**
	61.5

Base Right Aft Wing:	**246 x .25 = 61.5**
No ammo	**0**
	61.5

Base Aft:	**370 x .25 = 92.5**
No ammo	**0**
	92.5

"Rear" BV = 215.5

Add the BV for the "Front", "Right Side", "Left Side" and "Rear" to determine the Weapon Battle Rating.

"Nose" BV	**2,938**
"Left Side" BV	**1,132.4**
"Right Side" BV	**566.2**
"Rear" BV	**215.5**

Weapon Battle Rating = 4,852.1

3. Calculate Offensive Battle Rating

Multiply the unit's Weapon Battle Rating by its Speed Factor. With a Maximum Thrust of 14, its Speed Factor is 2.16.

4,852.1 x 2.16 = 10,480.54

Offensive Battle Rating = 10,480.54

CALCULATE FINAL BATTLE VALUE

Defensive Battle Rating + Offensive Battle Rating = BV

3,762 + 10,480.54 = 14,242.54

***Dragau II*-class DropShip BV = 14,243**

CONSTRUCTING A BATTLE FORCE

A battle force is a collection of units (including but not limited to BattleMechs, Combat Vehicles, ProtoMechs, infantry, battle armor and aerospace fighters). The methods presented previously can provide the base Battle Value for any unit with a standard skill/experience level.

This BV is adjusted to reflect the effectiveness of the battle force's target acquisition gear; command, control and communications systems; and Skill Level. Apply these modifiers in the order listed.

TARGET ACQUISITION GEAR (TAG)

Any unit in the battle force equipped with TAG, Light TAG or a C^3 Master Computer adds BV equal to the BV of each ton of semi-guided LRM ammunition carried in the force (use the ammo BV for the appropriate-size LRM launcher). Units whose only such piece of equipment is rear-mounted add half the BV instead.

COMMAND, CONTROL AND COMMUNICATIONS (C^3)

Two or more units in a battle force equipped with C^3 systems can be designated as part of a C^3 network (see p. 131, *TW*). Add 5 percent of the total BV of all units in a C^3 network to each of the units linked by each network.

EXTERNAL STORES

Aerospace fighters, conventional aircraft and some Support Vehicles may carry additional weapons and equipment on external hard points (see the Aerospace Weapons and Equipment BV Table, p. 318). The BV of any external stores is added to the base BV of a unit before the base BV is modified for skill level.

Aerospace fighters can carry a maximum of one bomb per 5 tons of mass. Support Vehicles can carry one bomb per hardpoint added during design.

SKILL RATINGS

When assembling a battle force, a player can elect to use different skill ratings for selected units. However, selecting better skill ratings correspondingly increases the BV of that unit. Conversely, selecting worse skill ratings will reduce the units' overall BV.

ProtoMechs: Because ProtoMech pilots have no Piloting Skill, use the 5 column of the BV Skill Multiplier Table when determining skill modifiers for non-standard troops.

Mechanized Infantry: Because they cannot perform anti-'Mech attacks, mechanized infantry can only adjust their Gunnery Skill Rating (use the 5 column of the BV Skill Multiplier Table for this purpose).

Anti-'Mech Default Skill: Unless the unit has an Anti-'Mech Infantry Kit (see p. 155), all non-mechanized conventional infantry have a default Anti-'Mech skill rating of 8, which cannot be improved.

BV Skill Multiplier Table

Gunnery	Piloting/Anti-'Mech Skill								
	0	1	2	3	4	5	6	7	8
0	2.42	2.31	2.21	2.1	1.93	1.75	1.68	1.59	1.5
1	2.21	2.11	2.02	1.92	1.76	1.6	1.54	1.46	1.38
2	1.93	1.85	1.76	1.68	1.54	1.4	1.35	1.28	1.21
3	1.66	1.58	1.51	1.44	1.32	1.2	1.16	1.1	1.04
4	1.38	1.32	1.26	1.2	1.1	1	0.95	0.9	0.85
5	1.31	1.19	1.13	1.08	0.99	0.9	0.86	0.81	0.77
6	1.24	1.12	1.07	1.02	0.94	0.85	0.81	0.77	0.72
7	1.17	1.06	1.01	0.96	0.88	0.8	0.76	0.72	0.68
8	1.1	0.99	0.95	0.9	0.83	0.75	0.71	0.68	0.64