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PHOENIX COMMAND™

Small Arms Combat System

LEADING EDGE
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Introduction

The **Phoenix Command Small Arms Combat System** has been designed to blend a very accurate simulation of man-to-man combat with a fast, straightforward set of rules. The mechanics of fire and movement, the capabilities of a wide range of modern weapons, and the effects of injuries are all accurately presented, using simple systems and easy-to-read tables. It is of equal value to the student of the military, the wargamer interested in man-to-man gaming, and the role-player who desires greater realism than is possible with most game systems.

To get started, players should read Chapter One, which explains the Character and the terms used in **Phoenix Command**, and Chapter Two, which presents the rules to the Basic Game. After a few combats using the Basic Game, players can add in the various Advanced and Optional Rules at their discretion.

A quick note about dice for anyone who may be unfamiliar with the conventions used in this book; at least three six-sided dice and one or more ten-sided dice (available in hobby stores) are needed to play. The ten-sided dice are mostly used to generate numbers from 0 to 99. Simply roll a die twice; the first roll is the tens digit, and the second represents the ones. Thus, a roll of 6 and 2 would be 62, and a 0 and a 9 would be 09.

Incidentally, this is the third edition of **Phoenix Command**, and the fourth printing. Most of the changes which have been made are minor, and what editing has been done is more in the nature of tinkering than actual redesign. Owners of earlier editions will not find major discrepancies; a list of significant changes has been included in Chapter Four.

We are confident that players in search of excitement and realism will continue to be as satisfied with the new **Phoenix Command** as they were with the earlier editions. Enjoy the game, with our best wishes.

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1 THE CHARACTER

Welcome to **Phoenix Command**. For those unfamiliar with role-playing games or wargames, **Phoenix Command** is an excellent introduction to the fascinating world of simulation gaming. Just as chess represents a strategic game of conquest and strategy, **Phoenix Command** details the action in modern small arms combat. Like chess, playing pieces moved on a playing surface resolve the action. But unlike chess, the playing pieces in **Phoenix Command** represent individual people, or characters, with combat resolved on a second by second basis. The outcome depends on each character's actions, skill, and strategy. Any number of people can play **Phoenix Command**; it is ideally suited to two teams, with a referee to moderate the action.

1.1

USING THE GAME

Phoenix Command is a small arms combat system. It has been designed for use as a stand-alone game or as a combat system for any other game. Its self contained rules may be used to accurately recreate combat scenarios from books, movies, current events, or history. All that is needed are pencil and paper, six- and ten-sided dice (available at local game stores), and either scale models, hex maps (also available at game stores) or a large piece of paper. The models, maps or paper are used as the game surface. On it the terrain, buildings, and the basic setting in which game play will take place are established. This might be a deserted village, a jungle, or a city street. Once the playing surface has been set, playersdivide up the people, or characters, whose actions will be represented on the playing surface. These characters are the playing pieces, and like chess pieces they are represented by figures, markers, or any other agreed upon device. Each player is responsible for the actions of each of his characters, guiding them through play. **Phoenix Command** provides the system of movement and combat which regulates the interactions between characters, accurately simulating the results of the conflict.

1.2

CHARACTERISTICS

Each character or combatant has certain innate characteristics which help to determine performance on the battlefield. These **Characteristics** are defined by numbers which represent the character's physical and mental capabilities; Strength, Intelligence, Will, Health, and Agility. Other characteristics which are specific to role-playing are not dealt with here, as they do not directly affect combat.

Figure 1 is a sample **Status Sheet** for a character. The five Characteristics are located in its upper left column. Definitions of the Characteristics are as follows and a blank Status Sheet is at the back of this book.

Name: Trent

Skill Level: 8

Characteristics

Strength	STR	16
Intelligence	INT	13
Will	WIL	12
Health	HLT	12
Agility	AGI	10
Base Speed		3
Maximum Speed	MS	6
Skill Accuracy Level	SAL	14
INT Skill Factor	ISF	27
Combat Actions	CA	8

Combat Actions per Impulse

	Impulse 1	2	3	4
Actions	2	2	2	2

Knockout Value	KV	48

Body Armor

	Protection Factor	Weight
Helm:	—	
Visor:	—	
Body:	—	
Limbs:	—	

Equipment

M16 Rifle	8.0
2 Magazines	2.0
Magazine Pouch	.2
Fighting Harness	.6
Clothing	5.0

Encumbrance = 15.8

Weapon Data:

Reload Time	RT	8
Rate of Fire	ROF	*7
Ammunition Capacity	Cap	30
Ammunition Weight	AW	1.0
Penetration	PEN	17
Damage Class	DC	6

Aim Time	Aim Time Mod	Shot Accuracy
1	-22	-8
2	-12	+2
3	-9	+5
4	-7	+7
5	-6	+8
6	-5	+9
7	-4	+10
8	-3	+11
10	-1	+13
12	0	+14

"How do you expect me to fight with this helmet on? And this ammo weighs a ton!"

Humbert NoDose

Figure 1 Sample Status Sheet

Strength (STR): The overall physical strength of the character. An untrained character with STR 10 can dead lift about 200 pounds, one with STR 14 can dead lift about 250 pounds, and one with STR 18 can dead lift about 400 pounds.

Intelligence (INT): Mental dexterity influencing the speed with which the character can make decisions. As such it is a factor in determining overall combat effectiveness.

Will (WIL): Resolve and willpower, affecting courage in the face of danger and resistance to the pain of wounds.

Health (HLT): Physical health and the ability to recover from wounds.

Agility (AGI): Physical coordination and speed.

The value of each Characteristic will typically be between 3 and 18. The larger the value, the greater the character's capability, as indicated on the following table.

Characteristic	Description
18	Exceptional
16	Excellent
14	Good
12	Above Average
10	Average
8	Below Average
6	Poor
3	Extremely Poor

To use this system with another game, convert the other game's characteristics to the 3 to 18 scale, using the preceding guidelines. For a stand-alone game, simply determine the value of each characteristic by summing the roll of three six-sided dice. Alternatively, the pregenerated troop data of Section 1.5 can be used for quick pick-up games, or to provide opponents for scenarios.

1.3 GENERATING A CHARACTER

To generate a character, determine each value on the Status Sheet using the following step-by-step procedure. General explanations of these values are given here; the full details are found in the chapters that follow. A blank Status Sheet has been provided at the end of this book, while **Figure 1** is an example of a completed sheet.

Step 1 Characteristics

Separately determine the values of each of the characteristics found in the upper left-hand corner of the Status Sheet by summing the roll of three six-sided dice.

Each Characteristic = Total of three six-sided dice

Step 2 Skill Level

The character's ability is represented by his **Gun Combat Skill Level**. This should now be established using the following guidelines.

Skill Levels range from 0 to 20, with Level 0 being someone with no training whatsoever. An average soldier in an average army is assumed to be 3rd to 4th Skill Level, while highly trained elite troops are 5th to 7th. Outstanding members of elite units might be 9th to 12th, and only truly exceptional people would be of higher level. 20th Skill Level is the maximum possible.

Those of you who are using other role-playing games will have your own way of generating Skill Levels, and acquiring experience or training. Simply adjust that system to this scale for determining your Skill Levels.

Player or Referee chooses the Gun Combat Skill Level

Step 3 Encumbrance

Now the **Encumbrance** is determined. This is the total weight of armor, clothing, weapons, and equipment carried into combat. The greater the Encumbrance, the slower the character. Backpacks and other non-combat equipment can sometimes be dropped

before entering combat; if so, they should not be included in this weight. The setting of the game will determine whether this occurs or not.

To find the Encumbrance of a character, simply total the weights (in pounds) of all equipment being carried. A discussion of weapons and equipment may be found in Section 1.4, and in the **Weapon Data Tables** at the back of this book.

The Weapon Data Tables are divided into seven sections; Pistols, Sub-Machineguns, Assault Rifles, Machine Guns, Shotguns, Direct Fire Explosive Weapons, and Grenades. Select the character's weapon or weapons from the Weapon Data Tables, and record on the Status Sheet their weights, and those of all armor, ammunition, and equipment carried on the Status Sheet. If armor is being worn, record its **Armor Protection Factor (PF)** in the space provided (see Section 1.4).

Record equipment weights and Armor Protection Factors
Encumbrance = Total weight carried into combat

**"One for all,
And all for one,
If he's out of arms reach,
Then go for your gun."**

The King's Musketeers

Step 4 Base and Maximum Speed

Next find the character's **Base** and **Maximum Speeds**. These depend on his Strength, Agility, and Encumbrance. Base Speed represents overall mobility, while Maximum Speed is the character's top running speed.

Find the Base Speed by cross-indexing the Strength (STR) characteristic (Step 1) with the Encumbrance (Step 3), on the **Base Speed Table (1A)**. Record the Base Speed on the Status Sheet. As an example, a character with STR 16 and an Encumbrance of 15 pounds has a Base Speed of 3.0. Encumbrance should be rounded off to the nearest column.

Now cross-index the Base Speed with the character's Agility (AGI) characteristic (Step 1) on the **Maximum Speed Table (1B)**, to find the Maximum Speed (MS). For example, a character with AGI 10 and a Base Speed of 3.0 has a Maximum Speed of 6.

In this way, the character's strength and quickness are factored in with the weight he is carrying, to determine how quickly and easily he can move.

Base Speed = Cross-index Strength (Step 1) and Encumbrance (Step 3) on Table 1A
Maximum Speed = Cross-index Agility (Step 1) and Base Speed on Table 1B

Step 5 Skill Accuracy Level

The character's **Skill Accuracy Level (SAL)** is now determined. This measures his skill with weapons, and obviously has a significant effect on how accurate his shots will be. The greater the SAL, the greater his expertise. It is found opposite the Gun Combat Skill Level on **Table 1C**, and should be recorded on the Status Sheet. Note that there is a rapid increase in the SAL as a character moves through the low levels. This is because of the very rapid improvement in ability which comes from even a little training or practice.

"If you can't dazzle them with style, riddle them with bullets."

Corely Norris

Skill Accuracy Level found on Table 1C opposite the Gun Combat Skill Level (Step 2)

Step 6 Intelligence Skill Factor

Next the **Intelligence Skill Factor** is established. This is the sum of the Intelligence characteristic and the Skill Accuracy Level (Step 5). Record it on the Status Sheet. Intelligence in this sense does not represent learning, but general quickness of wit and reaction.

Intelligence Skill Factor = Intelligence (Step 1) + Skill Accuracy Level (Step 5)

Step 7 Combat Actions

The time required to perform any act, such as loading a weapon, opening a door, or walking through a room, is measured in **Actions**. Each Action is not a precise amount of time, but a relative representation of how long an act will take someone. Some people can do things more quickly than others; this is represented by allowing them to use more **Combat Actions** during each 2 second Phase, or one-half second Impulse.

To find the Combat Actions, go to the **Combat Actions Table (1D)** and cross-index the character's Maximum Speed (MS) of Step 4 and his Intelligence Skill Factor (ISF) of Step 6. Record his Combat Actions on the Status Sheet.

Each game **Phase** is divided into four **Impulses**, and a character's Combat Actions are naturally divided up on that level as well. The **Combat Actions Per Impulse Table (1E)** gives the number of Actions a character may perform in each of the four Impulses. Just go across the line for the character's number of Combat Actions, and record each of the four numbers in the appropriate spaces on your Status Sheet. These four numbers added together will equal your character's Combat Actions.

Combat Actions = Cross-index Maximum Speed (Step 4) and Intelligence Skill Factor (Step 6) on Table 1D

Combat ActionsPer Impulse = Found opposite the Combat Actions (above) on Table 1E

"A Bullet in the arm Does very little harm. A bullet in the head Can make you very dead."

Fred the Singing Bandit

Step 8 Knockout Value

Phoenix Command uses a system of shock and Physical Damage to determine how a character is affected by wounds. A key factor in this system is each character's **Knockout Value (KV)**. This number is used to determine at what point the character goes into shock from his injuries. The larger the Knockout Value, the greater the ability to ignore the pain of wounds. The Knockout Value is one half of the Will characteristic times the Gun Combat Skill Level (rounded off).

Knockout Value = .5 x Will (Step 1) x Gun Combat Skill Level (Step 2)

Step 9 Weapon Data

A wide-ranging list of weapons is found in the **Weapon Data Tables** located at the back of this book. The appropriate data for the weapon used by a character should be transferred from the Weapon Data Tables to the Status Sheet. For those just starting out, this is certainly not necessary during character generation. It is, however, a good idea to copy the numbers at some point, as the information will be used in combat.

Much of the data in the Weapon Data Tables is not used in the Basic Game of Chapter 2. Many values are used only in the Advanced Rules of Chapter 3 and the Optional Rules of Chapter 5, while some are used only in the **Advanced Phoenix Command Combat Supplement**. The following discusses the values contained on the Weapon Data Tables. Those playing the Basic Game may ignore those used in the Advanced or Optional Rules.

Length (L): Overall weapon length in inches. If two numbers are shown separated by a slash (/), the first number is the weapon's length with the stock folded, while the second is its overall deployed length.

Weight (W): The loaded weapon weight in pounds. It does not include a holster or sling.

Reload Time (RT): The time, in Action Counts, required to fully reload the weapon.

Rate of Fire (ROF): The time, in Action Counts, required to chamber a round from the weapon's magazine.

An asterisk (*) indicates a self-loading action in which a round is chambered automatically after each shot fired. With this type of weapon, a round is always ready for fire until the magazine is empty.

A number following an * indicates the weapon is capable of fully automatic fire and gives the number of rounds fired per half second burst.

Weapons with no ROF entry have no magazine; the time required to prepare a shot is given by the Reload Time (RT).

Blam. Blam.
"Stop." Blam.
"Police." Blam.

Officer Axly

Ammunition Capacity (Cap): The maximum number of rounds which can be held in the weapon's magazine.

Ammunition Weight (AW) and Feed Device: The weight in pounds per belt (Blt), drum (Drm), magazine (Mag), or individual round (Rnd).

Knock Down (KD): Measure of the weapon's knock down capability. This has nothing to do with physical damage or incapacitation but can be used to determine if the projectile's momentum knocks the target off his feet or off balance. This is discussed in the Optional Rules of Chapter 5.

Sustained Automatic Burst (SAB): The measure of the weapon's recoil and its accuracy during long bursts of automatic fire. This is used in the Advanced Automatic Fire rules of Chapter 3.

Aim Time Modifiers (Aim Time Mod): The combined measure of the weapon's accuracy and speed of aim. There are several **Aim Time Modifiers**, one for each **Aim Time** listed in the third column. How accurate a shot is obviously has a lot to do with how much time has been spent aiming. The Aim Time Modifiers measure this. As a character devotes more Actions to his Aim Time on a given shot, his accuracy improves. The greater the Aim Time Mod, the greater the accuracy.

Each weapon's listing contains Aim Time Mods for several Aim Times. These Aim Times typically range from 1 to 12 Actions. The Aim Time Mod to the right of each Aim Time measures the weapon's inherent accuracy and speed of aim.

A close look at these numbers will show that small weapons, such as pistols, are more accurate for brief aim times, but do not improve much with long aim, while longer rifle-type weapons are the opposite. This is obviously because light, short pistols can be aimed quickly, but have short barrels and lack real accuracy. Rifles, on the other hand, take longer to move around, but if aimed carefully can be extremely accurate.

The Aim Time Mods are important factors in shot accuracy, of course, and affect the Odds of Hitting of every shot fired.

These Aim Time Mods should be added to the character's **Skill Accuracy Level**, which measures the shooter's accuracy, to determine the overall **Shot Accuracy (SA)**. Just add the Skill Accuracy Level (SAL) to each of the weapon's Aim Time Mods, and record the totals under Shot Accuracy on the Status Sheet. The Weapon Data section of **Figure 1** shows both sets of data, the Aim Time Mods from the **Weapon Data Tables**, and the Shot Accuracy values after the SAL has been added in.

Shot Accuracy = Aim Time Mod (Weapon Data Table) + SAL (Step 5)

Penetration (PEN) and Damage Class (DC): PEN measures bullet penetrating power, and DC measures bullet damage capability. The greater the PEN and DC, the greater the penetration and damage. The PEN and DC are given for target ranges 10, 20, 40, 70, 100, 200, 300, and 400 hexes. A hex is 2 yards across and **in the Basic Game of Chapter 2, only the 10 hex range values need be recorded**. There are three sets of PEN and DC values. Each set represents a different type of ammunition as given to the left of these values: Armor Piercing (AP), Full Metal Jacket (FMJ), High Explosive (HE), High Explosive Anti-Tank (HEAT), and Jacketed Hollow Point (JHP).

Players not using the **Advanced Phoenix Command Combat Supplement** should not use weapon data from the shaded portions of the tables. This data represents performance beyond the weapon's **Effective Range** and is used only in the **Advanced Phoenix Command Combat Supplement.**

Minimum Arc (MA): The minimum number of hexes over which a burst of fully automatic weapon fire must be spread. The greater the weapon's recoil, the greater the Minimum Arc. This value is used only in the Advanced Rules of Chapter 3.

Ballistic Accuracy (BA): The measure of weapon/ammunition accuracy potential. The larger the BA, the greater this potential. This value is used in the **Advanced Phoenix Command Combat Supplement.**

Time of Flight (TOF): The projectile's time of flight in tenths of seconds. This value is used in the **Advanced Phoenix Command Combat Supplement.**

Record Weapon Data from Weapon Data Table
Shot Accuracy = Aim Time Mod (Weapon Data Table) + SAL (Step 5)

The character is now ready for play. Use of the above values is detailed in Chapter 2: Basic Game: Movement and Combat.

1.4

EQUIPMENT AND ARMOR

This section gives the weight of combat equipment and body armor. Weapon data is provided in the **Weapon Data Tables** located at the back of the book. Weapon data has been divided into seven sections; Pistols, Sub-Machineguns, Rifles, Machine Guns, Shotguns, Explosive Direct Fire Weapons, and Grenades/Explosives. Within each section, the weapons have been separated by nationality. A brief discussion of the values on the tables is found in Step 9 of Section 1.3. Detailed use of those values is in Chapters 2, 3 and 5. The weights of some standard pieces of combat equipment are found in the following table. While this is by no means a complete list, it should fill the needs of most games. Players should feel free to expand the list as desired.

Equipment Table

Equipment	Weight
Bayonet	1.0
Binoculars	2.0
Bipod	1.0
Canteen (full)	2.5
Clothing	5.0
Entrenching Tool	1.5
Field Radio	12.0
Fighting Harness	.6
Headset Communication	1.0
Holster	.4
Magazine Pouch (2 Mags)	.2
Optical Scope	2.5
Sling	.4
Smoke Grenade	1.0

The weight, **Protection Factors (PF)**, and coverage of common body armor has been included in the following table. The larger the armor's PF, the greater the protection. If the weapon's Penetration value (PEN) is less than or equal to the armor's Protection Factor (PF), the armor will stop the projectile. Body armor has been divided into head, visor, and body coverage and is worn over normal clothing. The BPF value is used only in the **Advanced Phoenix Command Combat Supplement** and is the **Blunt Protection Factor.**

Armor Table

Armor / Clothing	PF	BPF	Armor Weights Head	Visor	Body
Clothing	0	0	-	-	5.0
Light Flexible Armor	4	1	-	-	2.0
Medium Flexible Armor	6	2	-	-	2.6
Heavy Flexible Armor	9	3	-	-	3.2
Light Rigid*	6	4	2.2	.8	7.9
Rigid*	10	4	3.1	.8	11.5
Medium Rigid*	16	5	4.0	.8	15.0
Heavy Rigid	30	6	-	-	24.0

* Visor PF = 4

1.5

PREGENERATED TROOPS

This section provides pregenerated troop data for players to use as characters or for opponents in scenarios. The following table provides all the values required for play except weapon data which is found on the **Weapon Data Tables** at the back of this book.

To prepare a combatant, take a blank **Status Sheet** like the one at the back of this book, and record the Skill Level, Combat Actions, Armor PF, Knockout Value, and Skill Accuracy Level given below.

Pregenerated Troop Table

Troops	Skill Level	Combat Actions	Helm PF	Body PF	Knockout Value	Skill Acc Level
Untrained	0	3	-	-	5	0
Militia	1	4	-	-	5	5
Green	2	4	-	-	10	7
Line	4	4	-	-	20	10
Crack	5	6	-	-	35	11
Elite	7	6	-	-	56	13
Line	4	3	16	30	20	10
Crack	5	4	16	30	35	11
Elite	7	4	16	30	56	13

Now, pick a weapon from the **Weapon Data Tables** and fill in the Weapon Data section of the Status Sheet. Add the Skill Accuracy Level to each of the Aim Time Mods and record the sums (the Shot Accuracy) on the Status Sheet. The combatant is now ready for play.

2 BASIC GAME: MOVEMENT AND COMBAT

The **Phoenix Command Combat System** has been designed to be both intense and realistic. It is designed to simulate real combat as accurately as possible. This means that battle is very dangerous, and that bullets are as deadly to a veteran as they are to a new recruit. After their initial experiences, it is likely that characters will learn that combat is not a thing to be entered lightly.

The **Basic Combat** rules are designed to introduce the various concepts involved, in simple and direct ways. As players learn the basic system, and should they desire more detail in their play, the various Optional rules can be added in. Each group of players should feel free to use the rules with which they are comfortable; the game has been designed to allow a high degree of realism, but that is certainly not necessary for a very enjoyable experience.

2.1 GAME SCALE AND PLAYING SURFACE

As mentioned during Character Generation, the **Phoenix Command** combat system uses **Phases** which are 2 seconds long. Each Phase is divided into a series of 4 **Impulses**, in which all movement and fire are executed simultaneously. For a playing surface, either a table top or a hex map may be used, with each **Inch** or **Hex** representing 2 yards. Each combatant should be represented on the playing surface by a miniature figure, a counter, or other agreed-upon marker.

Players should be set up on the playing surface whenever combat is imminent. The Referee should simply draw the outlines of buildings and other terrain features, such as trees and ridge lines, directly on the surface. A variety of blank, erasable hex maps are currently available in hobby and gaming stores, and are ideal for this purpose. If the players are using a table top, then butcher paper or something similar can easily be substituted. As much detail as desired may be included, and the Referee should be careful to draw all features to scale. Models of buildings, when available, are of course ideal. When the map is ready, then the characters are placed in their locations, along with whatever opponents or other people they can see.

2.2 PHASES AND COMBAT ACTIONS

As stated above, each **Phase** consists of four **Impulses**. Since a Phase is two seconds long, each Impulse is one-half of a second. During each Impulse, every combatant is able to perform a certain number of **Combat Actions**, as shown in the **Actions Per Impulse** portion of the Status Sheet (Section 1.3, Step 7). For example, a character with 4 Combat

Actions may perform one Action in each Impulse, while someone with 6 Actions may perform 2 in the first and third Impulse, and 1 each in the second and fourth. A character does not have to use all his Actions in each Impulse, or each Phase, but those which are not used are simply lost; they may not be saved from Impulse to Impulse.

The **Action Time Table** on the **Status Sheet** gives the Action costs for many typical actions. As an example, movement in a running stance costs 1 Action per hex, and assuming a firing stance costs 2 Actions. The Referee may determine the cost of any unlisted action using his own judgement. The Action cost should be equal to two times the time (in seconds) it would take an average man to perform the act. For example, an activity which takes an average man 3 seconds to perform would cost 2 X 3 = 6 Actions.

"There is no such thing as excessive violence."

Gil the Treacherous

Anything listed on the Action Time Table may be performed by any combatant; it just takes some people longer than others. If a player is attempting to do something which takes more than a single Impulse, or which would extend into the next Phase, then he simply applies whatever Actions he has to the activity, and continues applying them each Impulse until he has enough. When he has 'spent' enough Actions, then he can perform the act. Players should write down their accumulation of Combat Actions when doing this; small hash marks are sufficient.

For example, consider the character Trent, from the sample Status Sheet on page 3. Trent has 8 Combat Actions; this is 2 Actions per Impulse. It is the beginning of a Phase, and he wants to take 6 Actions of aim before he fires. He aims, at 2 Actions per Impulse, through the first two Impulses, and fires at the end of the third. If he had begun aiming in the third Impulse of one Phase, then he would have fired at the end of the first Impulse of the next Phase. (2 Actions in Impulse Three, and 2 more in Impulse Four for a total of 4 Actions. A new Phase would then begin, and Trent would use his 2 Actions during Impulse One to bring his total to 6.)

Actions can be mixed, as long as they are not exclusive. This means that a player can aim while moving, but cannot aim at two different targets at once, or any other obvious contradiction. It is also difficult to **aim while moving**; a character may only use a maximum of 1 Impulse worth of aim if he is moving.

In Trent's case, he might choose to move forward one hex (using 1 Action per hex), and take 1 Action of aim as well, in each Impulse. After 2 Impulses, he would have moved through two hexes and would have 2 Actions of aim. If he wanted his shot to be more carefully aimed than that, he would have to stop moving.

It should be noted that combatants can change their minds. A player who intends to aim for 6 Actions may decide instead to shoot after only 5 (or 4, or 7, or any other number). The target may also move out of visibility (Section 2.4) before the player wishes to fire. In this case the player must shoot as the target leaves visibility, using whatever Actions of aim he has at that point, or the time spent aiming is simply wasted, and the combatant receives nothing for the Actions he has used.

2.3

FACING AND MOVEMENT

The figure or marker representing each character is always oriented in a specific direction; this determines where he can move and fire, and is called the character's **Facing**. Facing may be in any direction and is not limited by the hex grid. Hexes are only used to regulate movement distance.

The character's Facing determines his **Field of Fire** and **Field of View**. The Field of Fire is the area into which he can fire his weapon; this is a 60 degree cone centered on his Facing. The Field of View is the area he can immediately see; the front 180 degrees, centered on his facing. If the game is being played on a table top or other unmarked surface, the Fields of Fire and View are estimated by the Referee. Note that when a character is in a Firing Stance, his Field of View is also 60 degrees.

The Action Time Table mentions the Action costs for **Changing Facing**; it should be noted that small turns made while moving are free. For each hex entered, a combatant may change facing up to 60 degrees (one hexside) without CA cost. There is only a CA cost for turning if the combatant is not moving that Impulse, or if he wishes to turn more than one hexside per hex.

Example:

At the start of play, Trent (8 CA) is behind the cover of a tree, and wants to move 11 hexes forward to a low wall. In Phase 1, he moves 3 hexes forward, changes facing 1 hexside, and continues on 5 more hexes. This uses a total of 8 Actions. In Phase 2, he continues moving forward 3 more hexes and reaches the wall. He stops, and changes facing 3 hexsides to face back the way he came. This uses a total of 4 Actions (3 for moving, a free hexside turn in the last hex, and 1 Action for 2 more hexsides), meaning that Trent has completed his movement at the end of Impulse 2 of Phase 2. He has 2 more Impulses, and therefore 4 more Actions, available before the Phase ends.

2.4

FIRE

There are several factors which affect the accuracy of a shot. The skill of the shooter, the basic accuracy of the gun itself, the amount of effort spent aiming, and the range are obviously all very important.

Each is considered when determining the chance of hitting a target. The **shooter's skill** is represented by the **SAL**, and the **Range** is determined by counting the number of hexes or inches between the shooter and the target.

The weapon's inherent accuracy and the amount of time spent aiming are covered by the **Aim Time Mods** from the **Weapon Data Tables**. A shot using 1 Action is the quickest, and is usually called a Snap Shot. A shot using the maximum number of Actions shown in the Aim Time Mods column is the most accurate possible for that weapon. Note that the **act of firing** is included in the Aim Time; a Snap Shot uses one Action for aiming and firing, and does not require 1 Action for aim and another to pull the trigger.

These factors are all included in the **Odds of Hitting Table (2)**. The left column is labelled **Shot Accuracy (SA)**; this is equal to the Aim Time Modifier of the weapon used at the number of Actions of aim which the shooter has applied, plus the shooter's **Skill Accuracy Level** (Section 1.3, Step 5). If the Shot Accuracy falls between two values, use the lower number. On Trent's Status Sheet (Figure 1), with 4 Actions of aim, his Shot Accuracy is +7.

The SA is then cross-indexed with the Range to the target, in either hexes or inches, to determine the **Odds of Hitting**. Enter the Range column with the first number that is equal to or greater than the actual range. If, as mentioned above, Trent has a Shot Accuracy of 7, then he would have a 86% chance of hitting a target that was 8 to 10 hexes away.

Target Visibility

Naturally, a character has to be able to see a target to shoot at it. A direct line of sight system is used for target visibility and spotting. All exposed targets within a character's Field of View are visible from the beginning of the Impulse they begin an action which exposes them, until the end of the Impulse in which they go into concealment. In other words, if a character steps out around a corner (which takes 1 Action) on Impulse One, fires on Impulse Two, and ducks back around the corner on Impulse Three, he is visible from the beginning of Impulse One to the end of Impulse Three.

OPTIONAL MODIFIERS

There is far more to the chance of hitting than the factors mentioned above; some of these other factors are covered on the **Optional Accuracy Modifiers Table (2C)**. If desired, any or all modifiers which apply are added to (or subtracted from) the Shot Accuracy, before determining the Odds of Hitting.

As an example, return to Trent's shot with an SA of 7 and a 86% chance of hitting. If his target were moving, he would subtract 5 from his Shot Accuracy. This would give him a new SA of 7 - 5 = 2. He would now need to roll a 53 or less to hit a target at Range 10. If the target was also running in the open (Standing Exposed), however, Trent would add 8 to the SA, bringing it up to 10, and a 96% chance.

Positions and Stances

There are three possible positions; **Standing, Kneeling**, and **Prone**. Each of these has a different Shot Accuracy Modifier, as indicated on **Table 2C**. From a Standing position, it costs 1 Action to Kneel, and 2 to go Prone. From Kneeling, it costs 1 to either Stand or go Prone. When Prone, it costs 2 to Kneel, and 3 to Stand up.

There are also two Stances used in determining Shot Accuracy. If no preparation is made before a combatant begins aiming, he is said to be **Firing From The Hip**, and suffers a -6 penalty to his Shot Accuracy. If he uses 2 Actions to assume a proper firing position, called a **Firing Stance,** then his aim uses the normal Odds of Hitting. The Aim Time begins after the combatant assumes the Firing Stance. Once in a Firing Stance, the character continues to receive the Firing Stance advantages until he moves.

Ducking

Ducking is a defensive option available to all combatants whenever they are fired upon. Ducking costs no Actions, and a Duck may be performed during the same Impulse as any other activity, including firing. All shots fired at someone who Ducks are at **-5 Shot Accuracy**, and if the person Ducking fires at the same time, he would execute his fire with a **-10 Shot Accuracy** modifier. Note that Ducking interrupts any action which was being performed.

Automatic Fire

Most of the weapons used in the game are capable of **Automatic Fire**. When a weapon is set on Automatic, it fires a one-half second burst each time the trigger is squeezed, instead of just a single round. Weapons which can do this are those which have an asterisk(*) preceding their Rate of Fire (ROF) value on the Weapon Data Table.

When using Automatic Fire, only one burst may be fired per Impulse, and therefore a maximum of four bursts may be fired per Phase. This is in contrast to single shot firing, where the maximum number of shots which can be fired in an Impulse or Phase is limited only by the number of Combat Actions. On the other hand, all Automatic Fire receives the **+1 Action Aim Time** bonus shown on **Table 2C**. It also uses the **Automatic Fire Table (2B)** to determine how many rounds hit the target. This table works in the following way.

To use Automatic Fire, determine the Odds of Hitting normally, making sure to include the +1 Aim Time modifier for Automatic Fire. Roll to see if the shooter hits; if he does, then it means that the rounds are in the correct area, and at the right elevation. Now go to **Table 2B.** Find the appropriate Range, and cross-index it with the **Rate of Fire** of the weapon. This gives the number of rounds which have hit the target.

It is also possible to hit more than one target with a burst of Automatic Fire. At ranges of 45 hexes or less, the shooter may choose to sweep his fire across a full hex. If this happens and a hit is scored, every person in the target hex is hit. Use the 45 Hex range entry on **Table 2B** to determine the number of hits scored on each target.

"Dispose of them discreetly, Demolish them completely."

Fred the Singing Bandit

Target Size

Combatants who are in doorways, behind walls, and in similar situations are harder to hit than those who are standing in the open. The **Target Size Modifiers** deal with these situations.

There are five entries in this portion of the table. **Looking Around Cover** is for targets who are just looking over or around cover, and are exposing only their heads. **Firing Around Cover** is for when the target is behind cover and returning fire, or preparing to; the shooter can see the head, shoulders, and arms. **Standing**, **Kneeling**, and **Prone Exposed** are all self-explanatory.

In addition to the Odds of Hitting modifiers, targets which are Looking Over or Firing Around Cover can only be hit in certain body locations. This is handled by using the **Firing Around Cover Hit Location Table**, and is discussed in Section 2.6.

2.6

HIT LOCATION AND DAMAGE

Whenever a target is hit, the **Hit Location and Damage Table (3A)** is used. This table breaks the body down into its significant areas, or Hit Locations, depending on how vital they are to survival. It shows the appropriate injury caused by the shot, based on the weapon's effective Damage Class. The various factors on the Table are discussed below.

Target Position

There are two columns of Target Positions, labelled **Firing Around Cover** and **In The Open**. The Open column is used for targets who are largely or entirely visible to the shooter, and includes all possible Hit Locations from Head to Foot.

The Firing column is used for targets who are mostly concealed. As discussed in Section 2.5, only certain Hit Locations can be hit on people who are under cover. The Firing column includes only the head, shoulders, and arms as possible hit areas. To accurately simulate hits to targets who are **Looking Over Cover**, ignore all rolls on this Hit Location Table over 22.

Hit Location

This section of the table is simply a list of the various body areas which can be hit. Glance hits are assumed to cut across the target shallowly, and usually ricochet off bone .

Having selected the correct Target Position column, the firing player rolls a 00-99 number to determine the Hit Location.

Example: Trent has hit an opponent who is firing over a wall. Trent will therefore use the Firing Around Cover column. He rolls a 62, which is the Shoulder location. If his opponent had been In The Open (largely visible to Trent) then this same roll would have resulted in a hit to the Thigh - Flesh area.

Penetration Line

Once the Hit Location has been determined, the question is whether the shot has penetrated the target's armor. Some shots will strike cleanly, while others partially or completely glance off. (See Glancing Roll, below.) This will obviously have a major effect on the damage done. The relative protection afforded by armor is accounted for by using the 4 **Weapon Penetration Lines** at the top of the **Hit Location and Damage Table (3A)**.

To determine which line should be used for a given shot, the weapon's **Penetration** is compared to the Armor's **Protection Factor (PF)** on the **Penetration Line Summary (3B)**. The table gives the minimum weapon Penetration values necessary for various degrees of effectiveness against different PF's. As an example, if the target's PF is 2 in the Location that has been hit, then a shot with a Penetration of 3 would use Weapon Penetration Line 1, a Penetration of 4 or 5 would use Line 2, Penetration 6 would use Line 3, and Penetration of 7 or higher would use Line 4. Obviously a shot with Penetration of 2 or less would fail to penetrate the armor.

Example: Trent is firing an M16 rifle, using FMJ ammunition. His Penetration is therefore 17. The target is wearing Medium Rigid body armor, with a PF of 16. When Trent's shot hits the target's Shoulder, we check the Penetration Line Summary; shots with a Penetration of 17 to 22 use Weapon Penetration Line 1. If Trent's Penetration were 23, then his shot would use Line 2. If the target were wearing Light Flexible body armor, on the other hand, with a PF of 4, his Penetration of 17 would use Line 4.

Glancing Roll

As mentioned above, the protection afforded by armor is not determined simply by its thickness. An important factor is its ability to deflect fire, by the use of slope, layering, or even reactive or reflective shielding. In these ways, well-designed armor can often preserve the life of its wearer from even high-powered weapons.

This is reflected by the use of the **Glancing Roll**, shown at the top of the **Hit Location and Damage Table (3A)**. For each shot that hits a target, a 0-9 number is rolled. This number is entered on the appropriate Weapon Penetration Line to determine the effect of the shot. If the number rolled is less than the lowest number in the Low Velocity Damage column, then the shot glanced off the armor; no damage is done. Otherwise, the number rolled determines which of the two sections of the Hit Location and Damage Table should be used; **Low Velocity Damage** or **Over Penetrating Damage**. These columns are discussed below.

"Don't think of it as being vastly outnumbered, think of it as having a very wide shot selection."

Generalissimo Puerco,
President for Life

Example: Trent's shot is using Line 1. This means that he must roll a 9 on his 0-9 die for the shot to cause Low Velocity Damage. If the number he rolls is less than 9, then no damage will be done. On the other hand, if he were on Line 4, then he would do Low Velocity Damage on a roll of 0, 1, or 2, and Over Penetrating damage on a roll of 3 or greater.

Resolving Damage

Now that the correct section of the Damage Table is known, the exact damage is determined. The severity of a wound is judged in terms of points of **Physical Damage (PD)**. The greater the PD, the more serious the wound and the greater the chance that the target has been incapacitated.

The PD value covers a very wide range, from 1 point to many thousands of points. These represent varying degrees of damage; rough descriptions are included in the Low Velocity Damage column. A scan down this column and the PD's associated with various Hit Locations will give the player some idea of what he is dealing with.

For example, a Low Velocity Damage hit to the Thigh - Flesh areas does 3 points of PD. This is in the general category of Superficial Wounds, and while somewhat painful, it is not an incapacitating wound to any but the most frail of people and is little threat to one's health. A Low Velocity wound to the Thigh - Bone, however, does a 16 PD Disabling Injury, while one to the Heart does a 4000 PD Critical Wound. The significance of PD is discussed in the next section.

The **Low Velocity Damage** column represents damage caused by shots which have been significantly slowed down by the target's armor. The damage from such shots is limited, and so the weapon's Damage Class is not considered. Just cross-index the Hit Location with this column to determine damage.

Over Penetrating Damage handles shots which have not been significantly slowed by armor. These shots are moving very rapidly, and can cause extensive rupturing of tissue in addition to the damage done in the path of the bullet itself. For these shots, choose the column which includes the weapon's **Damage Class**, and cross index it with the Hit Location.

Because the armor worn by a target is rarely the same for all Hit Locations, it is often necessary to roll the Hit Location before determining the Weapon Penetration Line and damage type.

Example: Trent's shot was to the Shoulder location. If the shot is doing Low Velocity Damage, then the target takes a 21 Physical Damage point Disabling Injury. If he were on the Over Penetrating Damage table, however, the Damage Class (DC) of his M16 would determine the damage. The DC of the M16 is 6; cross-indexing the Shoulder hit location with the Damage Class 6-8 column under Over Penetrating Damage, the damage is 1000 PD and a Double Disable result.

The first use of PD is to determine whether the combatant is disabled or incapacitated; this is covered in the next section. Even more important than that, however, the PD also determines the chance of a combatant surviving his wounds. This is discussed in depth in Section 2.9.

2.7

DISABLING INJURIES AND KNOCKOUT

There are two immediate side effects possible from a wound received in combat. It is possible that the victim will fall unconscious, slip into shock, or otherwise be unable to continue fighting. He might also be able to continue, but find that his abilities have been limited due to his injuries.

Being incapacitated is the first issue. Each Impulse in which a combatant takes one or more wounds, there is a chance that he will be unable to continue the battle. The following **Knockout Table** is used to determine the odds of this happening.

Compare the total amount of **Physical Damage (PD)** that the combatant has received to his **Knockout Value (KV)**, discussed in Section 1.3, Step 8. Select the appropriate line from the table, and read across to find the **Incapacitation Chance (IC)**.

A 00-99 number is then rolled, and if the number is less than the IC, then the combatant is out of the fight. If the number rolled is greater than or equal to the IC, then the combatant may continue, subject only to the Disabling Injuries rule discussed below.

"Join the army... Where every day could be your last."

Sgt. Ingram

Knockout Table

Total PD	Incapacitation Chance
less than 1/10 of KV	—
over 1/10 of KV	10
over KV	25
over 2 times KV	75
over 3 times KV	98

For example, Trent's KV is 48. If he took a wound of 4 points or less, he would not even have to check for knockout. From 5 to 48 points, he would have a 10% chance of being knocked out. 49 to 96 points gives a 25% chance, 97 to 144 is 75%, and 145 or more would mean incapacitation on any roll except 98 or 99.

Incapacitation must be **checked each Impulse** that a combatant takes damage, regardless of how much he takes. Also, the check is made against the total damage the combatant has received, not just the value of the latest wound. Thus, if Trent had taken 35 PD from previous wounds, and was hit again for 21 PD more, his total PD would be 56. This is more than his KV, and he would have to roll a 25 or better to remain active.

Note that a character who is **Incapacitated** is not necessarily unconscious. Some Incapacitated characters are simply scared and unable to continue to function (especially those with low KV's), while others are in extreme pain or have slipped into shock. Regardless, they are no longer considered effective in combat. The Optional Rules of Section 5.13 can be used to determine the exact condition of a character who has failed his Knockout roll.

Regaining Consciousness

The severity of a wound has a marked effect on how soon the victim can recover from shock, regain consciousness, or otherwise deal with the short-term incapacitation represented by a failed Knockout roll. This is handled through the use of the **Incapacitation Time Table (8B)**.

First choose the appropriate **PD Total** line. Round down if the character's PD Total is not shown; a PD Total of 49 uses the 0 PD line. Then roll a 0-9 number, and cross-index. This gives the time required to return to normal (or at least semi-normal) functioning. See Section 2.10 for combat capabilities following recovery.

Disabling Injuries

Disabling injuries are indicated on the tables with one or two asterisks (*). They are hits which have significantly damaged or broken the limb in question. These hits prevent the combatant from using the injured limb until it is fully healed. As noted on **Table 3A**, a single asterisk is a normal Disabling injury, while a double asterisk is required to Disable someone under the influence of pain deadening drugs.

A Disabled Leg means the character cannot move (in the Basic Game), and a Disabled Arm or Shoulder means that he cannot fire a weapon with that Arm. (These rules are slightly modified in the Advanced Rules; see **Table 7A**.)

2.8 TACTICAL NOTES

The **Phoenix Command Combat System** is somewhat different from most games, and naturally the tactics used in the game are also different. For this reason, a few very simple pieces of tactical advice are included below. Players may make of these what they will; based on playtesting, these points are sensible advice. They are not, however, rules of any sort, and talent, unusual situations, or luck may render any of them invalid in certain circumstances.

The most important advice sounds obvious, but it is very wise; try not to get shot. The longer you aim, the better your chance of hitting, but the longer you are exposed to enemy fire. Because of this, taking a Snap Shot and Ducking is often advisable.

Make use of cover, and try to get the drop on your opponent. Cover the corner or doorway you expect him to come around, and when he appears take a shot and duck. It is likely that during the Impulse he comes around the corner he will not have any more Combat Actions. Take your free shot and do not give him time for a good return shot.

Also, movement in a small arms battle is usually made up of quick darts from cover to cover. Unlike in the movies, combatants who stay out in the open take terrible, and often fatal, risks. Stay low, and do not step into open areas that your opponent can see.

One last point; teamwork is a key factor. Do not attack a prepared enemy from the front if it can be avoided. Frontal assaults are bloody and unpleasant, and your characters deserve better treatment than that. Let part of the team work around the flank and surprise the enemy. This will make your life far easier and much longer.

2.9 MEDICAL AID AND RECOVERY

Whenever someone has been wounded, the **Medical Aid and Recovery** rules are used to determine if he will survive. There are few hard and fast rules about how much damage it takes to kill a character. Instead, serious injuries simply increase the risk of fatality, and make more sophisticated medical care a necessity.

Whether a character lives or dies, and how long he will need in order to recover from his injuries, is determined using the **Medical Aid and Recovery Table (8A)**. The following terms are used on the table.

DT = Damage Total. This is the total of all Physical Damage (PD), modified to account for the character's Health.

HT = Healing Time. This is the number of days required for a character to fully recover from his wounds.

CTP = Critical Time Period. When a character is injured, he has this much time to seek Medical Aid before the player rolls to see if he survives.

RR = Recovery Roll. This is the percentage chance that the character has of surviving his wounds. If no Recovery Roll is given, then the character will automatically die at the end of the Critical Time Period, unless better Medical Aid is found.

"Who says Russian roulette isn't an acceptable way to rally a broken man?"

Lieutenant Axly

The Basis for Recovery

During combat, the player keeps a running total of the **Physical Damage (PD)** points taken. This PD Total, modified to account for the character's Health, determines the **Damage Total**. This measures the severity of his injuries; the greater the Damage Total, the more severe the injuries and the smaller the chance of surviving. The Damage Total is:

Damage Total (DT) = PD Total X 10 / Health Characteristic

Example: Trent has received two wounds, of PD 14 and 4, for a total of 18. His Health is 12, and so the Damage Total (DT) = 18 X 10 / 12 = 180 / 12 = 15. In this way, Trent's above average Health has reduced the effect that the damage will have on him.

If there is no entry for the character's DT, then the next lower entry should be used. A DT of 34 would use the DT 30 line, for example.

How much time a character has to seek and receive Medical Aid is determined by the **Critical Time Period (CTP)**. At the end of the CTP, he must make his **Recovery Roll**; if he makes this roll, he will survive. If he fails, he dies. The length of the CTP is given opposite the Damage Total on **Table 8A** and depends on the type of **Medical Aid** available.

Consider Trent, with a DT = 15. His CTP is found on **Table 8A** under the column "No Aid", and is 72 hours. If he does not receive Medical Aid in 72 hours, his Recovery Roll (RR) would also be taken from the "No Aid" column, and would be 85. Trent must then roll a 00-99 number; if it is less than or equal to 85, he will survive. If he survives, then the time in days for his wounds to heal is given by the **Healing Time (HT)**, found on **Table 8A** opposite the DT. In Trent's case, it is 30 days.

Medical Aid

Naturally, **Medical Aid** greatly improves the chance of survival. This improvement depends on the type of aid available, and each type is listed in a separate column on **Table 8A**. Medical Aid has been divided into four general types; **First Aid**, **Aid Station**, **Field Hospital**, and **Trauma Center**. Each type has its own Critical Time Period and Recovery Roll opposite the Damage Total.

There are six Recovery Roll entries under the Trauma Center category. Each of these represents a hospital of increasing sophistication, and is defined by its Technology Level. The Technology Level of a facility is given next to the time period represented in **Table 8C**. Any character who remains in a Trauma Center throughout the first third of his Healing Time may reduce his total Healing Time by 20%. For example, if the HT were 60 days, then a character remaining in a Trauma Center for the first 1/3 of that time, or 20 days, would subtract 20% from his HT. This subtraction would equal 60 days X 20% = 12 days, and would give him a total HT of 60 - 12 = 48 days.

In **Phoenix Command**, the treatment an injured character receives is very similar to the method used in modern warfare. Usually, First Aid is applied as soon as possible after a character is wounded. This immediately lengthens the CTP, to the number shown in the First Aid column. (This represents simply stopping the external bleeding of the wound.) At

that point, the character is moved to a better facility, depending on what is available. The goal is, of course, to get the character to the best hospital possible, and to use the intermediate steps as ways of stabilizing his condition.

Note that when the CTP is increased, the time available is still assumed to have begun when the injury took place.

Example: A character has a Damage Total (DT) = 3500. This uses the 3000 (or 3K) line on the Medical Aid and Recovery Table (8A). Checking a DT of 3000 under the column labelled No Aid, we see his CTP is 81 phases, with no Recovery Roll given. This means that without medical attention he cannot survive, and he has only 81 phases in which to receive that attention. Luckily, a medic arrives before the end of his CTP and treats him. Referring to the column labelled First Aid at a DT of 3000, we see the medic has increased his CTP to 2 hours. Unfortunately, he still has no RR. The First Aid, however, has at least stabilized his condition temporarily, and he is rushed to a Tech Level 13 Trauma Center before the end of 2 hours. His new CTP is now 18 days, and his RR = 30. So, 18 days after the injury, he rolls his 00-99 Recovery Roll. If less than or equal to 30 is rolled, he survives; if greater than a 30 is rolled, he dies.

If he survives, then the Healing Time (HT) for his wound is 88 days. It takes this long for his injuries to completely heal. If he remained in the Trauma Center for 1/3 of this time, or 29 days, he would be able to subtract 20% (18 days) from the total HT, and would be healed after only 70 days.

2.10

WOUNDED CAPABILITIES AND HEALING

Whenever a character is suffering the effects of an unhealed injury, his physical capabilities are reduced. This reduction depends on the character's status, which will fall into one of the following categories: Recent Wounds - Character Makes Knockout Roll; Recent Wounds - Character Fails Knockout Roll; and Old Healing Injuries.

Recent Wounds - Character Makes Knockout Roll

Recent wounds are ones which have been suffered during the current combat. (Once one hour has passed since the injury, they are considered Old Healing Injuries.) As long as the character makes his Knockout Roll, he is affected only by Disabling Injuries (Section 2.7) and can continue combat subject only to those limitations. These fresh injuries, if not disabling, are ignored due to the effects of adrenalin and other adjustments made by the body during crisis. Disabling injuries remain in effect until completely healed.

Recent Wounds - Character Fails Knockout Roll

A character who fails his Knockout Roll is incapacitated. With inexperienced combatants, (people with low Knockout Values), this often represents a rapid descent into shock, or being immobilized out of fear and confusion. With more serious wounds, it represents incapacitation due to extreme pain, shock due to blood loss, or an actual loss of consciousness.

The time a character remains dazed or knocked out is found on the **Incapacitation Time Table (8B)** by cross-indexing a 0-9 roll and the PD Total. Round the PD down to the nearest entry. Note that more serious wounds generally result in a longer period of incapacitation. After the **Incapacitation Time** has passed, the character is once again capable of action and has a penalty of Healing Time / 20 points subtracted from his Combat Actions, along with any problems due to disabling injuries.

Example: A character has failed his Knockout Roll and has a PD Total of 30. He uses the 0 PD line on Table 8B, and rolls a 2; he regains consciousness after 1 Phase. The Healing Time for a 30 PD wound is 41 days; after regaining consciousness, he suffers a HT / 20 or 41 / 20 = 2 point penalty to his Combat Actions.

Old Healing Injuries

From one hour after the injury until the time the wounds heal, the character suffers a "Days" / 20 point penalty to his Combat Actions. "Days" are the number of days remaining until the injuries heal.

Example: Trent has a Damage Total = 15 and, therefore, a Healing Time of 30 days. So, from one hour after his injury to the end of the first day, he has a 30 / 20 = 1.5 point penalty to his Combat Actions. (This rounds to 2 points.) The next day, he has a Healing Time of 30 days minus 1, or 29, and a 29 / 20 = 1.45 point penalty, which rounds down to 1.

2.11

EXPLOSIVES AND GRENADES

Explosives are a very potent force in combat. For area effect, for clearing buildings, and for similar activities, there is no type of weapon which is more valuable. This section presents a basic set of rules for using explosive weapons. All explosive damage data is contained in **Table 3D**; it need not be recorded on the Status Sheet. Detailed rules for the use of Explosive Weapons are contained in Section 3.6.

Explosive Weapon Accuracy

The **Shot Accuracy** of Explosive Weapons is found in the same manner as conventional weapons, with two exceptions. These are the **Explosive Weapon Target Size Modifiers** and the fact that the detonation site of all explosive rounds must be determined, even if the round missed.

Explosive Weapons are often aimed at a hex position, a building, or a large object, rather than a person. When this is the case, use the optional Explosive Weapon Target Size Modifiers shown on **Table 2C**. Simply add in the appropriate modifier when necessary. Note that the Target Size Modifier for a Hex is +12; this does not represent the modifier for a 2 yard diameter object. It represents the effective size of a hex when it is viewed from a standing position through the weapon's calibrated sights.

"Guns and Bullets, Grenades and Knives, With some of these, I might stay alive."

Fred the Singing Bandit

As mentioned above, a missed shot with an explosive weapon must be tracked. A bullet which misses its target can be ignored; an explosion cannot. If an explosive round misses, it is likely that it is either long or short of the target hex, but not too far to the right or left. Roll a 0-9 number; on a 0 through 4 the shot is short, and on a 5 through 9 it is long. To find how many hexes long or short it is, move down the appropriate Target Range column on the **Odds of Hitting Table (2A)** and find the entry with odds just greater than the number rolled. One half the difference between the SA which gives these odds and the SA required to hit, rounded up, is the number of 2 yard hexes by which the shot has missed. A shot may not miss by more than 1/3 the Range.

Example: Trent is firing a Grenade Launcher. His SA is 13 and the Range is 40, giving him a 67 to hit. He rolls an 82, however, and misses. Scanning down the Range 40 column, he sees that 3 lines down, at SA 16, the Odds of Hitting are 86. The shot has therefore missed by 3 / 2 = 1.5 = 2 hexes. He rolls a 7 for Long/Short; the shot is long. The round explodes two hexes past the target hex, on a direct line from where Trent fired.

Explosive Concussion Damage

The damage done by an explosive weapon is caused by **Concussion**; the shock wave generated by the blast. Explosive rounds in general have an effective **Blast Radius** of 6 hexes. This means that every person within 6 hexes of the blast location must check the **Explosive Concussion Damage Table (3D)** to determine the damage taken.

Simply choose the round type, and cross-index the target's **Range** in hexes from the burst with target exposure. For example, a target in the open 2 hexes away from a Frag Grenade would take 50 PD. Targets completely behind **Solid Cover** take no damage from explosives. The **"C"**, or **Contact** indicates the round actually hit the target.

ADVANCED RULES

3

The **Advanced Rules** use the same framework as the basic game; game scale, Movement, Field of View, and Action and Impulses are all unchanged. The major differences in the advanced game are in the Odds of Hitting and the Damage System. The Advanced Rules provide more detail and are more versatile than the basic game, yet add little complexity. Any or all of them may be added to the basic game, allowing players to tailor a system to their own needs.

3.1

ODDS OF HITTING

In the basic game, the character's Shot Accuracy is determined by adding his weapon's Aim Time Modifier to his Skill Accuracy Level (SAL). This Shot Accuracy is then cross-indexed with the target range to determine the Odds of Hitting. Optional Modifers can be added to the basic Shot Accuracy to account for target size, shooter firing stance, and movement. The Advanced System takes these concepts one step further. Each factor influencing accuracy is now treated as a separate **Accuracy Level Modifier (ALM)**. These ALM are added together for each shot to determine the shot's accuracy.

When a shot is fired, several factors modify the Odds of Hitting. These factors are: aim time, firing stance, and target range, visibility, motion, and size. Each of these effects has an Accuracy Level Modifier (ALM). The shot's accuracy is the sum of all applicable ALMs. This sum is called the **Effective Accuracy Level (EAL)**. The greater the EAL, the greater the Odds of Hitting. These ALMs are described as follows.

"For a lasting victory we must bury their hearts and minds."

Paul Maul

Aim Time ALM

The amount of time spent aiming has an important effect on accuracy. The greater the aim time, the more accurate the shot, as indicated by the weapon Aim Time Mods on your Status Sheet. A shot using 1 AC, is the quickest and is a Snap Shot. A shot using the maximum number of AC shown on the Weapon Data Tables, is the most accurate possible.

To correct weapon aim time accuracy for the shooter's skill, the shooter's **Skill Accuracy Level (SAL)** should be added to the weapon's Aim Time Modifiers and the sum recorded next to each Aim Time on the Status Sheet. These sums are called the **Shot Accuracy** and are used to determine the accuracy of each shot.

To gain the full accuracy of a weapon, the shooter must **"Assume a Firing Stance"**. That is, he must bring the weapon to a firing position where the aiming sights can be used and recoil handled. This costs 2 Action Counts (Table 7B) which do not count toward Aim Time. When moving or when stationary and not aiming, the shooter does not carry his weapon in a firing stance.

If the shooter does not want to use 2 AC establishing a firing stance, he may fire from the hip. Although faster, this is less accurate since the weapon's sights are not used. There is a -6 ALM for **Hip Firing** as shown on **Table 4B**.

"Why are you ducking? He couldn't possibly hit us in the head from there."

Humbert NoDose, his last words

Target Range ALM

The Target Range ALMs are given on **Table 4A**.

Firing Stance / Situation ALM

The Firing Stance/Situation ALMs are found on **Table 4B**. These cover typical firing stances (standing, kneeling, prone) and various situations such as Hip Firing.

Visibility ALM

Visibility ALM are given on **Table 4C**. These correct for smoke, darkness, optical scopes, and other effects on vision.

Movement ALM

Corrections for target and shooter motion are found on **Table 4D**. The **Moving Target ALM** is found on **Table 4D** by cross-indexing the target speed (in hexes per Impulse) and target range (in 2 yard hexes). If the entry is in the shaded portion of the table, then there is no restriction on Aim Time. If the entry is in the unshaded portion of the table, the shot's Aim Time is restricted to a maximum of 2 Impulses.

For shooters moving under their own power, the **Moving Shooter ALM** is found in the same manner as for a Moving Target. The Shooter's speed is cross-indexed with the target range on **Table 4D** to find the **Moving Shooter ALM**. A moving shooter has an Aim Time restriction of 1 Impulse. Note that the shooter's speed is the number of hexes moved the Impulse the shot was fired, and that a **moving shooter must Hip Fire.**

Target Size ALM

Target Size ALM for common targets are given on **Table 4E**. If the target cannot be found in the common listings, its Target Size ALM can be found opposite its diameter, in feet, on the **Target Size ALM Table (4F)**.

Effective Accuracy Level (EAL)

The **Effective Accuracy Level (EAL)** is the sum of all applicable ALM's and determines the Odds of Hitting. The following is an example of how the EAL is determined using the preceding ALM.

Example: Trent is prone and takes a shot after 6 AC of aim. The target is stationary, 50 hexes away, and firing over blocking cover.

Aim Time	ALM = 9	Aim Time 6 AC, from Status Sheet
Range	ALM = 5	Range 50 hexes, Table 4A
Firing Stance	ALM = 6	Prone, Table 4B
Target Size	ALM = 0	Firing over blocking cover, Table 4E
	EAL = 20	

The **Odds of Hitting** are found on the **Single Shot Odds Table (4G)**. Read down the table to the EAL, then across to the Odds of Hitting. In the preceding example, Trent has an EAL = 20, therefore, his Odds of Hitting are 67.

The player now rolls a 00-99 number using two ten-sided dice. If less than or equal to the Odds of Hitting is rolled, the shot hits. If greater than the Odds of Hitting is rolled, the shot misses.

Reflexive Duck

In the basic game there are optional modifiers for the target or shooter Ducking. This type of Duck is a **Reflexive Duck** in response to enemy fire. A player may take a Reflexive Duck any time he is firing or looking around cover. This cost no AC and allows him to bring his body back behind cover. When a player takes a Reflexive Duck, there is an additional

-5 ALM to any shots taken at him that Impulse, and any shot he takes is at an additional -10 ALM. Note that a Reflexive Duck interrupts any action the character was taking and brings him behind cover.

3.2

HIT LOCATION AND DAMAGE

When a target is hit, the **Hit Location and Damage** are found on the **Hit Location and Damage Table (6)**. There are two pages to this table. The first page is for weapons with a **Damage Class (DC)** of 1 to 4. The second is for weapons of DC 5 to 10.

The Hit Location sections of each page are identical and are found on the left-hand columns labeled **"Firing Over Cover"** and **"In the Open"**. The first column, "Firing Over Cover", is used for a target firing over or around blocking cover. The second column, "In the Open", is used for a target in the open.

To determine the Hit Location, refer to the appropriate column (target Firing or Open) and roll a 00-99 number. Find the number rolled in the appropriate column and move along that line to the second column. This gives the Hit Location. For a target Looking over cover, use the Firing column and a 00-22 roll.

Examples:

A roll of 15 hits a target Firing Over Cover in the Forehead.

A 09 hits a target In the Open in the Shoulder.

Aiming at Specific Body Locations

A shooter may choose to aim specifically at the target's Head, Body, or Legs. If this is done, the Odds of Hitting are figured in the normal way using the appropriate Target Size ALM from **Table 4E**. If a hit occurs, roll a 00-32 for the exact loaction of a Head hit, 57-99 for a Leg, or use the **Specific Hit Location Table (5D)** for Body hits. Damage is determined normally.

Resolving Damage

The **Physical Damage (PD)** inflicted is found to the right of the Hit Location and depends on the weapon's **Damage Class (DC)** and **Effective Penetraton (EPEN)**. The EPEN measures bullet impact after penetrating armor or cover. The EPEN is the weapon's PEN minus the target's Effective Armor PF for that hit location.

EPEN = Weapon PEN - Effective Armor PF

The **Effective Armor PF (EPF)** is the target's armor PF covering that hit location corrected for bullet glancing. To find the Effective Armor PF (EPF), cross-index the target's armor PF with a 0-9 roll on **Table 6D**. Note that the greater the 0-9 roll, the greater the Effective Armor PF.

"Don't think of it as losing a leg. Think of it as eliminating the risk of tripping over your own two feet."

Dr. Oscar Sneiderbunk

No Penetration (EPEN less than or equal to 0)

If the EPEN is less than or equal to zero, the shot does not penetrate and does no damage. The damage done by nonpenetrating rounds is not included in this system. It iis covered in the **Advanced Phoenix Command Combat Supplement.**

Low Velocity Penetration (EPEN less than the Effective Armor PF)

If the EPEN is greater than zero but less than the Effective Armor PF, the shot penetrates but is substantially retarded. The bullet has been significantly slowed, and its killing power reduced. When this occurs, find the Physical Damage (PD), by going right from the Hit Location to the **DC = 1** column. Then find the column with EPEN less than or equal to the EPEN of the hit and read off the damage.

Physical Damage (PD) measures wound severity. The greater the PD, the greater the wound severity and chance of incapacitation. A PD entry followed by "H" is in hundreds of points, "K" in thousands, "T" in ten thousands, "X" in hundreds of thousands, and by "M" in millions (e.g., 2H = 200, 3K = 3,000, 7T = 70,000, 1X = 100,000, and 1M = 1,000,000).

Example: A target wearing body armor with PF = 2, is hit in the shoulder by a weapon whose PEN = 7. A 9 is rolled for the Effective Armor PF giving an EPF = 4.

$$EPEN = PEN - EPF = 7 - 4 = 3$$

Since the EPEN is greater than zero but less than the EPF, the DC = 1 column is used. For an EPEN = 3, DC = 1, hit in the shoulder, the Physical Damage (PD) = 4 points.

High Velocity Penetration (EPEN greater than the EPF)

If the EPEN is greater than the EPF, the shot's penetration is essentially unretarded, and the Physical Damage (PD) is found by cross-indexing the EPEN and Hit Location under the projectile's full Damage Class (DC) column.

Example: A target in body armor with EPF = 4, hit in the shoulder by a rifle with a PEN of 17, has an EPEN = 17 - 4 = 13. The EPEN is greater than the EPF, so the weapon's DC = 6 is used. With EPEN = 13, the Physical Damage (PD) = 300 points.

Special Notes

These damage tables are the result of detailed computer generated anatomical models. These models provide the most accurate simulation of bullet wounds available. Note that the values on the table show large jumps in physical damage. This models penetration into a vital area, such as the heart. Repeated values indicate the bullet has exited the other side of the target (overpenetrated). More detailed and graphic representation of these tables is available in the **Phoenix Command Small Arms Damage Table Supplement**. That supplement details bullet penetration through the body with 1/10 PEN resolution, and provides Hit Locations for front, oblique, rear, and side profiles.

3.3

DISABLING INJURIES AND SHOCK

Each time a combatant is wounded, he may fall unconscious or become dazed. If this occurs, he is down and out of combat; if it doesn't, he may continue fighting restricted only by **Disabling Injuries.** A Disabling Injury to the limbs or spine occurs whenever the damage enters a shaded portion of **Table 6A**. A Disabled limb cannot be used until the injury completely heals.

The Damage Tables represent the Physical Damage done by projectiles and their effect on survival and recovery. The immediate shock and trauma associated with broken bones has not been included as it does not affect long term survival. To account for the short term effects of shock and broken bones, the **Shock PD** values of **Table 6C** are added to the PD of Disabling Injuries for purposes of Knockout. The Shock PD is effective only on the Impulse it is inflicted. It is not included in the PD Total after the Knockout Roll is either made or failed.

Example:

A target hit in the Arm Bone by a shot with EPEN = 3 and DC = 2 does 5 PD and is a Disabling Injury to the upper arm. This makes the Knockout PD of the wound 5 plus the Shock PD of 20 from Table 6C, or 5 + 20 = 25. Ffor Knockout, the target's PD Total is increased by 25 points. For purposes of survival and recovery, only the basic PDof 5 is included in the PD Total.

FULLY AUTOMATIC WEAPON FIRE

Fully automatic weapon fire is done in half second (one Impulse) bursts and is often tracked across the target(s). The original point of aim is often to one side of the target(s) and the **Arc of Fire** tracked across as shown in **Figure 2**.

The Arc of Fire determines overall effectiveness since it defines bullet distribution. In **Figure 2A**, the Arc of Fire is 2 hexes, and there are 4 bullets into each hex. In **Figure 2B**, the Arc of Fire is 4 hexes, and there are only 2 bullets into each hex.

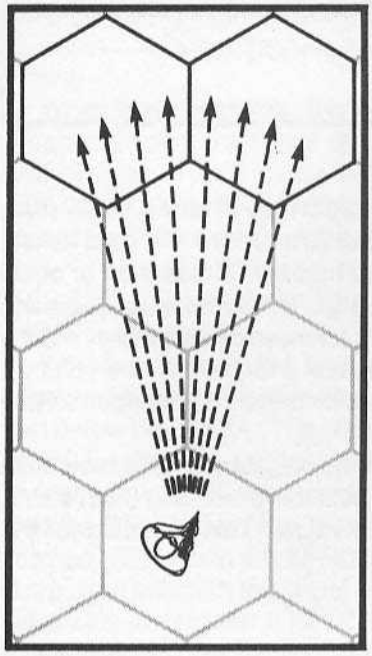


Figure 2A

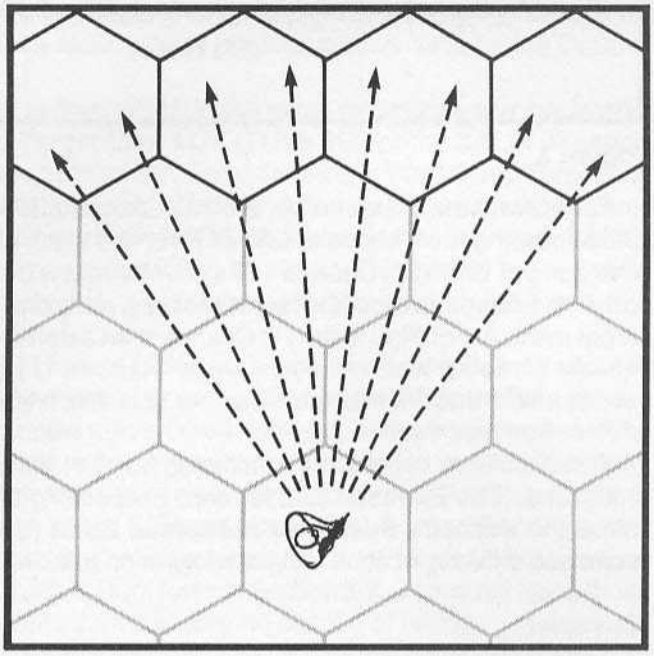


Figure 2B

"What do you expect me to do with him? He's got more holes than a golf course."

Dr. Oscar Sneiderbunk

Burst Elevation

To find the Odds of Hitting, the **Elevation** of the burst must first be determined. This elevation is the height of the burst relative to the target(s). If the shooter properly aims, the burst Elevation will correspond to the targets' rather than going over their heads or into the ground.

To determine if the burst is at the proper Elevation, the burst's EAL must be found. This Automatic weapon EAL is identical to an EAL for single shot fire except the **Automatic Elevation Target Size Modifier (Auto ELE)** is used instead of the normal Target Size ALM. The Auto ELE target size modifier is found on **Table 4E** for common targets and measures target height. For nonstandard targets, it is found on **Table 4F** opposite target height in feet. The Auto ELE is summed with the other ALMs, as usual, and this EAL is used with the **Burst Elevation Odds Table (4G)**. If the result is a miss, the burst was either too high or too low and misses.

Arc of Fire

If the burst is at the proper Elevation, the **Arc of Fire** must be determined. The shooter designates a burst initiation hex (or position on the table). This is the position at which the Arc of Fire begins. The shooter then designates over which hexes the burst is swept. The minimum width of the Arc of Fire depends on target range and the shooter's control of the weapon's recoil. This is given by the weapon's **Minimum Arc (MA)** and has been recorded on the Status Sheet for each target range. The Minimum Arc is the minimum number of hexes over which the burst must be tracked. The maximum width of the Arc of Fire is limited only by the shooter's **Field of Fire**. All targets at the proper Elevation, which are in the hexes covered by the Arc of Fire, may be hit. On level ground, the depth of the Arc

of Fire extends up to 100 two yard hexes toward (but not past) the shooter and 100 two yard hexes past the target as shown on **Figure 3**. All personnel in this area are eligible targets. In the case of contoured terrain, or if a question arises as to which targets are eligible, common sense should be used.

"Settle down or I'll sew your ear lobes to the bed."

Dr. Oscar Sneiderbunk

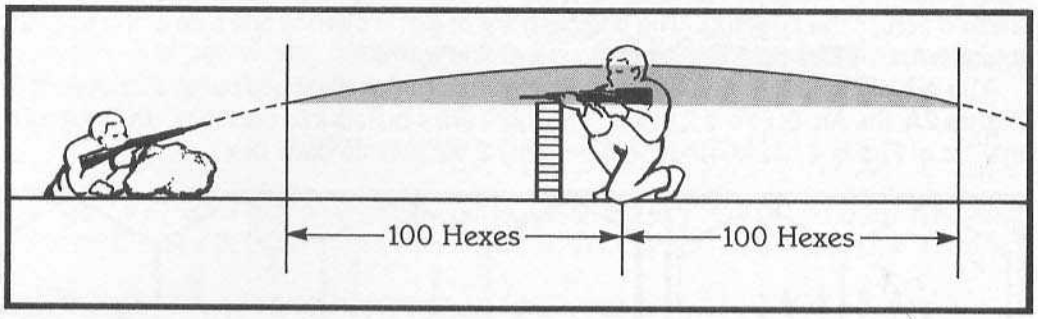


Figure 3

To determine if a target is hit, enter the **Automatic Weapon Hit Chance Table (5A)**, cross-indexing the weapon's **Rate of Fire** and width of the **Arc of Fire** in 2 yard hexes. This number is the **Hit Chance**. The shooter rolls a 00-99 number. If less than or equal to the Hit Chance is rolled, the target has been hit by one round. The same is done for each target in the Arc of Fire. If the Hit Chance is an asterisk (*) followed by a number, it is the number of rounds which hit each target. Thus, an *2 indicates a target has been hit by 2 rounds. Note that the maximum number of bullets hitting is limited by the weapon's Rate of Fire. See also Section 3.7.

The shooter is capable of continuous burst of automatic fire subject to ammunition limitations. The Elevation EAL for each succeeding burst is the preceding burst's EAL minus the weapon's **Sustained Automatic Burst (SAB)** value. This accounts for the increased difficulty of controlling a weapon on autofire.

Example:

Trent fires a burst from an M16A1 rifle while rushing two opponents. The opponents are 5 hexes away, exposed and kneeling. Trent's EAL is:

Aim Time	ALM = 2	Aim Time 2AC, Status Sheet
Range	ALM = 22	Range 5 hexes, Table 4A
Hip Fire	ALM = -6	Table 4B
Shooter Motion	ALM = -8	Shooter moved 1 hex the Impulse the burst was fired, Table 4D
Target Size	ALM = 11	Auto ELE, Exposed-Kneeling, Table 4E
	EAL = 21	

Using the Burst Elevation Odds Table (4G), the Elevation Odds of Hitting are 86. Trent rolls a 42 which indicates the burst is at the proper Elevation. His Minimum Arc = .4, so he must track the burst over a minimum of .4 hex. He chooses to track the burst over 3 hexes to cover both opponents in the Arc of Fire. His Rate of Fire = *7. The Automatic Weapon Hit Chance Table (5A), with a Rate of Fire = 7 and Arc of Fire = 3 hexes, gives a Hit Chance = 29. Trent rolls an 11 and hits the first opponent with one round. He rolls a 66 and misses the second opponent.

Seeing that he missed, Trent continues to spray the area with a second burst. To determine if this second burst is at the proper Elevation, the prior burst's EAL of 21, minus the weapon's SAB value of 3, is used. The second burst's EAL = 21 - 3 = 18. Trent rolls a 23 and the burst is, again, at the proper Elevation. This time Trent puts the burst into the remaining target's hex with an Arc of Fire = .4. The Hit Chance for Rate of Fire = 7 and Arc of Fire = .4 is *2. Donovan hits the opponent with two rounds.

Unlike a rifle or pistol, a shotgun covers an area with pellets. The size of this area, or pattern, depends on the shotgun, the type of shot fired, and the target range. At pointblank range, the pattern is very small and shotgun accuracy is much like a rifle. At longer range, the shot spreads and the pattern covers many feet. The size of this pattern is given by the **Shotgun ALM (SALM)** and is found on the **Weapon Data Tables** under the PEN and DC values. The greater the SALM, the larger the pattern and the easier it becomes to hit the target. But hitting the target with the pattern does not always mean you hit the target with pellets. If the pattern becomes too large, the shot spreads over too large an area to be effective. To accurately model both these effects requires special rules for the Odds of Hitting.

When firing buckshot, the EAL is determined in the same manner as any single shot weapon, except the larger of the **Target Size ALM (Table 4E)**, or the **SALM (Weapon Data Table)**, is used for the target size modifier. Enter the **Single Shot Odds Table (4G)** with this modified EAL to determine the Odds of Hitting with the shotgun's pattern. Note that at very close range, many shotguns have no SALM value. At these ranges, the shot has not spread and is essentially one mass when it strikes. This greatly increases its penetrating power and damage potential. For these cases, the shotgun is treated as a single shot weapon.

If the pattern hits, the number of pellets hitting is determined by the **Base Pellet Hit Chance (BPHC)**. The BPHC is a 00-99 number and is found on the **Weapon Data Tables** just below the SALM. The shooter now rolls a 00-99 number. If less than or equal to the BPHC is rolled, the target is hit by one pellet. If greater than the BPHC is rolled, the target is missed. A BPHC preceded by an asterisk (*) gives the number of pellets that hit. Note that the BPHC gives the chance of hitting a Target Size ALM = 0. Section 3.7 gives a method of adjusting the BPHC for smaller or larger target sizes. BPHC values of less than 0 are used only with the target size adjustment rules of Section 3.7. Those not using those rules should consider a BPHC of less than 0 to give no chance of hitting.

The **Pattern Radius (PR)** listed below the BPHC gives the size of the shotgun's pattern in 2 yard hexes. If the pattern hits, all targets within PR hexes of the intended target are also in the shotgun's pattern and could be hit by pellets. The shooter must check each target in the pattern for hits using the preceding BPHC.

Example:

Axly fires a SPAS 12 shotgun at an opponent who is partially behind Blocking Cover 15 hexes away. The EAL for a shotgun firing buckshot is:

Aim Time	ALM =	-6	Aim Time 2AC
Range	ALM =	13	Range 15 hexes, Table 4A
Target Size	ALM =	7	Larger of the Target Size ALM of 0 or SALM of 7
	EAL =	14	

Entering the Single Shot Odds Table (4G) with this EAL gives an Odds of Hitting of 27. Axly rolls a 23 and hits with the shotgun's pattern. The BPHC is *2, so Axly hits the opponent with two pellets. Unfortunately, the opponent was also hiding behind a hostage. Since the Pattern Radius (PR) is .2 hexes, the hostage is also in the shotgun's pattern, and Axly also hits the hostage with two pellets.

When determining the Hit Location and Damage for multiple pellet hits, there are two ways of resolving damage. Each pellet hit can be figured separately, or, for simplicity, all pellets can be run as hitting the same location. In this case, one Hit Location is rolled, and the resulting Physical Damage is multiplied by the number of pellets that hit.

"Oops."

Ex-Officer Axly

Fully Automatic Shotguns

Special rules are required to handle a shotgun firing a fully automatic burst. To determine the chance of hitting with the shotgun's patterns, the normal automatic fire rules apply using the larger of the **Target Size Elevation ALM** or the **SALM** for the target size modifier. Enter the **Auto Elevation Odds Table (4G)** with this modified EAL to determine the Odds of Hitting the target elevation with the shotgun's patterns. If the patterns are at the right elevation, enter the **Automatic Weapon Hit Chance Table (5A)** and cross-index the weapon's Rate of Fire (ROF) and Arc of Fire just as you would for an automatic burst. This gives the number of patterns hitting, or the chance of one pattern covering the target. Determine pattern hits just as you would for automatic fire against all targets in the Arc of Fire. For each pattern hit, use the BPHC to determine number of pellet hits just as you would for a single shotgun blast.

Grouping Multiple Pellet Hits

To more accurately handle multiple pellet hits the following rules can be used to group the resulting Hit Locations. To use these rules, the Hit Location of the first pellet is determined by a 00-99 roll using standard rules. All additional hits from the same blast should be grouped around this location. To determine the spacing of this grouping, consult the following **Shotgun Multiple Hit Table** . Enter this table with the SALM and find the **Hit Location Spacing (HLS)**. All pellet hits should be selected within plus or minus HLS percent around the first Hit Location on the Open Hit Location column. These additional Hit Locations may be determined randomly from within this spacing or distributed evenly.

Shotgun Multiple Hit Table

SALM	HLS	SALM	HLS	SALM	HLS	SALM	HLS	SALM	HLS
< -12	1	-4	4	2	11	8	25	14	60
-10	2	-2	6	4	14	10	34	16	79
-6	3	0	8	6	19	12	45	18	100

Example: In the preceding example, Axly hit the hostage with two pellets. If he rolls a 07 for his Hit Location roll, he hits the hostage in the Shoulder Glance with the first pellet. At range 15, the SPAS 12 has an SALM of 7 and the HLS = 19 (using the SALM 6 entry). This means the second pellet must hit between a hit location roll of 07 - 19, or 00, to 07 + 19, or 26. The second hit would then be rolled within this spacing and will result in a hit from the head to upper body.

3.6

EXPLOSIVE WEAPONS AND GRENADES

Explosive Weapons and **Grenades** are found in the Weapon Data Tables and are divided into two categories; Explosive Weapons such as grenade and rocket launchers, and Hand Grenades. For Explosive Weapons, the values on the left side of the table are identical to those of the standard small arms. The PEN on the left side is the projectile's PEN and gives its penetration capability. It is primarily used to determine the projectile's penetration against armored targets. If the PEN is less than or equal to the **Effective Armor PF (EPF)**, the projectile detonates on the armor's surface but does not penetrate. The explosion is treated as a blast outside the armor. If the PEN is greater than the Effective Armor PF, the explosive penetrates and all personnel within take damage from the explosion just inside the armor's wall. The Effective Armor PF is defined in Section 3.2.

The values on the right side of the table are the weapon's explosion data. The PEN and DC give the penetration and damage of the explosion's shrapnel depending on target range from burst in 2 yard hexes. The **Base Shrapnel Hit Chance (BSHC)** is the chance of hitting each target in the burst area with shrapnel. The **Base Concussion (BC)** gives the concussion damage of the explosion. Use of these values will be discussed later in this section.

Hand Grenade and Explosives data are found in the Grenades / Explosives section of the Weapon Data Tables. The **Arm Time (AT)** is the Time, in AC, to arm the grenade; the **Fuse Length** (FL) entry, its fuse length in 2 second phases; and the **Range (R)**, the distance it can be thrown in 2 yard hexes from a kneeling stance. The PEN, DC, BSHC, and BC are the same as described in the preceding paragraph. An "I" for a Fuse Length entry indicates the grenade is Impact detonated.

Note that some of the following material has been repeated from Chapter 2 for convenience.

Explosive Weapon Accuracy

The EAL of an Explosive Weapon is found in the same manner as conventional weapons, with two exceptions. These are the **Explosive Weapon Target Size Modifiers** and the fact that the detonation site of all explosive rounds must be determined, even if the round missed. Rules governing these situations are as follows.

Explosive Weapons are often aimed at a hex position, building, or large object, rather than a person. The Target Size ALM of a doorway, window, or building is found on **Table 4F**, opposite target diameter in feet. Note that the Target Size ALM of +12 for a hex is not for a 6 foot diameter object. It is an effective target size as viewed from a level firing position using the weapon's calibrated sights. If the shooter is firing from a highly elevated position, the hex ALM can be taken from **Table 4F** for a 6 foot diameter target and is +15.

An Explosive Weapon's EAL is found in the same manner as conventional weapons, using the preceding Target Size ALM. This EAL is used on the **Single Shot Odds Table (4G)** to find the Odds of Hitting. If the hit roll is greater than the Odds of Hitting, the shot misses. For a miss, refer to **Table 4G** and find the EAL entry with odds just greater than the number rolled. The difference between this EAL and the EAL required to hit determines the number of 2 yard hexes by which the shot misses. Enter the **Shot Scatter Table (5C)** with this number and read off the number of hexes by which the shot misses. As mentioned above, a missed shot with an explosive weapon must be tracked. If the explosive round misses it is likely that it is either Long or Short of the target hex, but not too far to the right or left. Roll a ten-sided die; on a 0 through 4 the shot is Short, on a 5 through 9 it is Long. For misses of greater than 1 hex, the impact hex is either Long or Short and in a direct line from shooter to target. For misses of 1 hex, the impact hex is selected randomly from those one hex from the target hex on a 1 to 6 roll.

"I'm too busy worrying about what I've done to think about what I'm doing."

Axly

Example:

Donovan is firing a grenade launcher. His EAL is 14 giving him a 27 to hit. He rolls an 82, however, and misses. Scanning up the Odds of Hitting Table he sees that 9 lines up, at EAL 23, the Odds of Hitting are 86. The difference between this EAL and that required to hit is therefore 9. Entering the Shot Scatter Table (5C), he sees that his shot missed by 2 hexes. He rolls a 7 for Long/Short; the shot is long. The round explodes 2 hexes past the target hex, on a direct line from where Donovan fired.

Hand Grenade Accuracy

The accuracy of thrown grenades is found in a similar manner to Explosive Weapons. For thrown grenades, the EAL is the sum of the target Range ALM, the thrower's Skill Accuracy Level (SAL), Aim Time Modifiers (Table 4H), Target Size ALM, and applicable Visibility and Motion ALMs. As with Explosive Weapons, the Target Size ALM for a hex is +12.

Thrown Grenade Aim Time in AC	Aim Time ALM
1	-26
2	-18
3	-14
4	-12
6	-11
8	-10

"Is it suppose to smoke like this?"

Trebor Nawoc

Scratch, scratch. "I can just barely make it out, it's in Russian. It says, This face towards enem..."

Din the Decisive, his last words

"Grenade? Where?"

Burce the Blind

Explosive Damage

Explosions have two damaging effects: shrapnel and concussion. The **Base Shrapnel Hit Chance (BSHC)** measures shrapnel generation while the **Base Concussion (BC)** indicates concussion damage. These values are found on the right side of the **Weapon Data Tables** depending on target range from burst.

The **Base Shrapnel Hit Chance (BSHC)** is a 00-99 number and is the chance of hitting with shrapnel. Roll a 00-99 number for each target in the burst area. If less than or equal to the BSHC is rolled, the target is hit by one piece of shrapnel. A **"C"** on the table is for a target in Contact with the explosive. An asterisk (*) preceding the BSHC gives the number of shrapnel pieces hitting. Note that the BSHC gives the chance of hitting a Target Size ALM = 0 target. Correction of the BSHC for smaller or larger target size is the subject of Section 3.7. BSHC values less than 0 are used only with the target size adjustment rules of Section 3.7. Those not using Section 3.7 should consider a BSHC value of less than 0 to indicate no chance of hitting with shrapnel.

Shrapnel Hit Location and Damage are determined in the normal way using the PEN and DC from the right side of the Weapon Data Table. In determining multiple hits from shrapnel, the Hit Location and Damage for each piece can be figured separately, or, for simplicity, all pieces can be run as hitting the same location. In this case, one Hit Location is rolled, and the resulting Physical Damage is multiplied by the number of pieces hitting.

To find the **Concussion Damage**, enter the right side of the Weapon Data Table at the target range from burst and find the **Base Concussion (BC)**. The BC is the Physical Damage (PD) points done to a target in the open. The **Blast Modifier Table (5B)** contains modifiers to this Base Concussion. The actual Concussion Damage is the BC times appropriate Blast Modifiers. The total Explosive Damage is the sum of the shrapnel and concussion damage.

Concussion PD = BC x Blast Modifiers

Explosive Damage = Shrapnel Damage + Concussion Damage

Example: Donovan is caught in an alley with an empty rifle as two opponents charge his position. He has time to arm a US model M26A2 grenade, and, listening to the enemy's approach, throws it around the corner, aiming at point X of Figure 4.

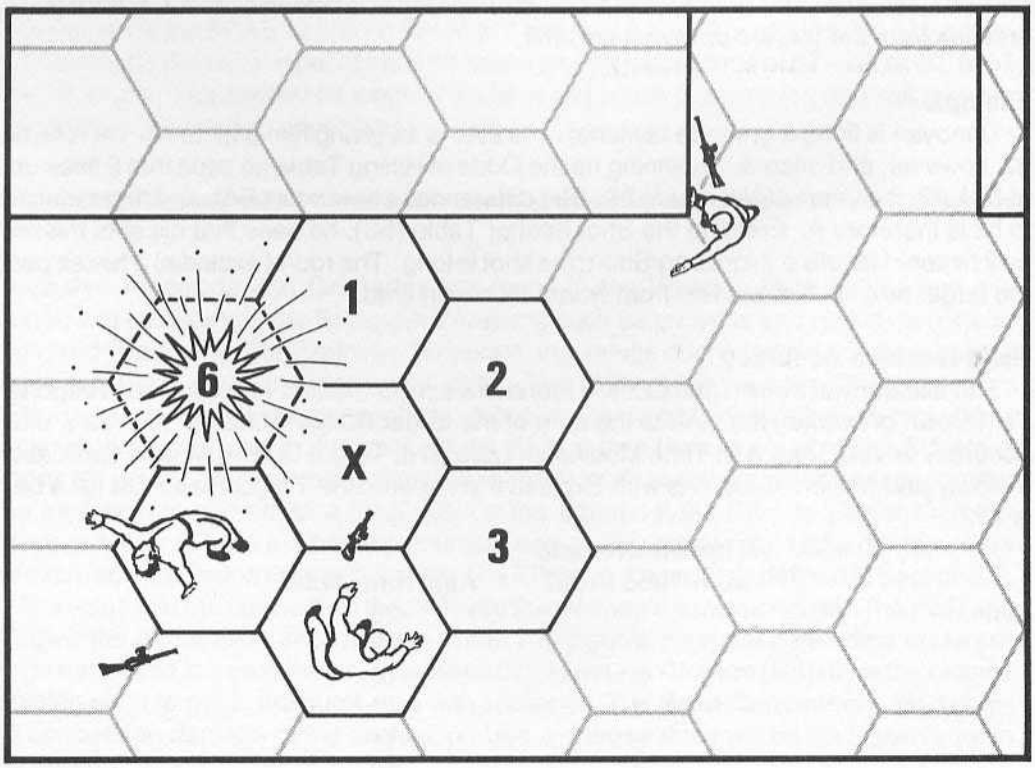


Figure 4

Donovan's EAL for this throw is:

Range	ALM	=	25	Range 3 hexes, Table 4A
Skill	ALM	=	9	Skill Accuracy Level
Visibility	ALM	=	-14	Throwing Not Looking, Table 4C
Aim Time	ALM	=	-12	Aim Time 4 AC, Grenade Aim Time Table (4H)
Target Size	ALM	=	12	Hex grid target size
	EAL	=	20	

Donovan's Odds of Hitting the intended target hex are 67. Donovan rolls a 71 and misses. The EAL with odds just greater than the number rolled is EAL = 21 (Odds 74). So Donovan missed his target hex by 21 - 20 = 1 EAL. This means a miss by 1 hex referring to the Shot Scatter Table (5C). The hex is determined randomly from those one hex from the intended target. Using a 1 to 6 roll, it lands in hex number 6 (see Figure 4). The grenade had an Impact fuse so explodes on impact.

Opponent 1 is caught one hex from the blast and is hit by one piece of shrapnel since the BSHC is *1. The Base Concussion (BC) is 176, so, in addition to the shrapnel hit, he receives BC x Blast Modifier = 176 x 1 = 176 PD in concussion damage.

Opponent 2 is two hexes from the blast and the BSHC is 25. Donovan rolls a 64 and misses the opponent with shrapnel. The BC is 52, so the opponent receives 52 x 1 = 52 PD in concussion damage.

Donovan was five hexes from the blast and behind solid cover around the corner. He is immune to shrapnel damage, and the concussion damage he receives is the BC = 12 (range 5) times the Blast Modifier = .01 (behind solid cover), 12 x .01 = .12 = 0 PD.

3.7

HIT CHANCE AND TARGET SIZE

In the basic game, the **Automatic Weapon Hit Chance**, shotgun **Base Pellet Hit Chance (BPHC)**, and **Base Shrapnel Hit Chance (BSHC)** are based on a Target Size ALM = 0. This is why these values are called Base values. If the player wants to more accurately handle the effects of Target Size on these Hit Chances, he can use the following rules.

To account for target size, enter the appropriate **Hit Chance Table (5A)** with the appropriate Arc of Fire, shotgun BPHC, or BSHC. Now, move up or down the table from this position to find the Hit Chance corrected for Target Size. If the Target Size ALM = +8, move up the table 8 lines and read off the Hit Chance. If the Target Size = -4, move down the table 4 lines to find the Hit Chance. When finding the Automatic Weapon Hit Chance or Shotgun Pellet Hit Chance, the **Automatic Width target size modifier (Auto WTH)** is used for the Target Size ALM. This Auto WTH is found on **Table 4E** for common targets or on **Table 4F** opposite the target's width in feet. Note that the second column of the **Automatic Weapon Hit Chance Table (5A)** called **"Index"** is simply a list of the line numbers on **Table 5A**. This Index makes moving up or down lines on the table easier.

For a shotgun, the number of pellets hitting cannot be greater than the **Pellet Number** given next to the BPHC on the Weapon Data Table. Likewise, for fully automatic fire, the number of hits per burst is limited to the weapon's Rate of Fire.

Examples:

The Automatic Weapon Hit Chance for an Arc of Fire = 3, Rate of Fire = 7, and Auto WTH target size = 3 is 44.

The Pellet Hit Chance for a BPHC = 37, and Auto WTH target size = -3 is 15.

The Shrapnel Hit Chance for a BSHC = 21, and Target Size ALM = 8 is *2.

BLOCKING AND NONBLOCKING COVER

Cover is a general term used to describe objects and materials behind which a target hides from view. Because bullets penetrate many barriers, cover has been divided into two categories, Blocking and Nonblocking.

A target is behind **"Blocking Cover"** when the cover will stop penetration of the enemy's weapon. The target is behind **"Nonblocking Cover"** when the cover will not stop penetration.

The weapon's PEN measures its penetrating power. The cover's **Protection Factor (PF)** measures its protection and is given on the **Cover Protection Factor Table (7C)**. If the weapon's PEN is greater than the cover's PF, the weapon penetrates and the cover is Nonblocking. If the PEN is less than or equal to the PF, the cover is blocking.

If the target is behind Nonblocking cover, as in the case of a man firing over a cardboard box, the entire target area, both visible and hidden, is used for the **Target Size ALM** in Section 3.1. In this case, the Target Size ALM would be for a man standing exposed (ALM = +7) rather than a man firing over blocking cover (ALM = 0).

"It won't do you any good to hide behind the girl. She'll only stop 3 points."

Gil the Treacherous

Hit Location and Damage

Note that the Hit Location column on the left side of **Table 6** does not contain numbers for all hit locations. This divides the table into two parts, giving target areas exposed when Firing Over Cover or In The Open.

When a hit is scored on an opponent behind **Nonblocking Cover**, the second column (Open) is always used. If he is Firing Over Cover and the 00-99 hit location roll is in the top part of the table, he is hit in an exposed location. Otherwise, the bullet must penetrate the cover before striking. In this way, one roll tells you where you hit and whether or not that location is protected by cover. This distinction may be significant in determining damage. The EPEN, used in Section 3.2 to resolve damage, is the weapon's PEN minus cover PF minus the target's Effective Armor PF (EPF).

EPEN = weapon PEN - cover PF - EPF

Example: A target is Firing over Nonblocking Cover. Since the cover is Nonblocking, the 2nd column, labeled In The Open, is used. A 93 is rolled, indicating a Hit Location of Shin. This Hit Location is in the bottom part of the table, so it is behind the Nonblocking Cover. The bullet penetrates the cover and strikes the target. If a 02 were rolled for the hit location, the bullet would strike the target in the Forehead. Since this Hit Location is in the top part of the table, it is an exposed area, and does not have to penetrate the cover.

GAME TIPS AND PLAYING AIDS

4

This Chapter presents game tips designed to speed up play, a list of changes in this edition of **Phoenix Command**, and a set of tournament rules from which quick pick-up games can be run. It should help the player get started, and also provides a few beginning scenarios and maps.

4.1 GAME TIPS

Delegation of Work

There are several ways to make the game play more quickly. The referee can delegate such things as Hit Locations and Damage to an experienced player, and each player can figure his own Odds of Hitting, Knockout, and Disabling Injuries. Game play is then a sequence of the referee calling a new phase, all players moving and determining Odds of Hitting, the player with the Damage Tables resolving PD for all shots hitting, and each player resolving Knockout and Disabling Injuries.

Ranging Stick

To speed up EAL determination, take a long straightedge, such as a yard stick, and mark it in hex increments. If a one inch per hex scale is used, make a mark each inch down the length of the stick. Now, refer to the **Target Range ALM Table (4A)**, and indicate the corresponding Range ALM next to these marks. The first mark would be +33, the second mark +28, and so on. When a shot is fired, instead of counting hexes to find the Range ALM, place the Ranging Stick at the shooter's position and extend it over the target to read off the Range ALM.

Markers

To help regulate the character's position on the game surface, indicate exposed figures by placing a marker such as a penny next to a figure who is, for example, looking out a window. This saves time asking which figures are, or are not visible. Figures around a corner or behind a waist high wall, with no marker, are assumed unexposed. Figures with a marker are assumed to be looking or firing around the corner or over the wall.

4.2 SAMPLE SCENARIOS

Scenario 1 The Bridge at Oppenheim

It is the fifth day of the Russian invasion of Germany, and they have reached the Rhine. The Russians have sustained heavy losses and are no longer an indomitable war machine, but the German and NATO armies have suffered also. The remnants of your NATO squad are sent to Oppenheim, just south of the smoking ruins of Mainz and Wiesbadden. There, you are to join a fresh battalion and hold or destroy the bridge. Upon arrival, you find yourselves alone. When you report this, new orders are given: Hold the bridge until reinforcements arrive.

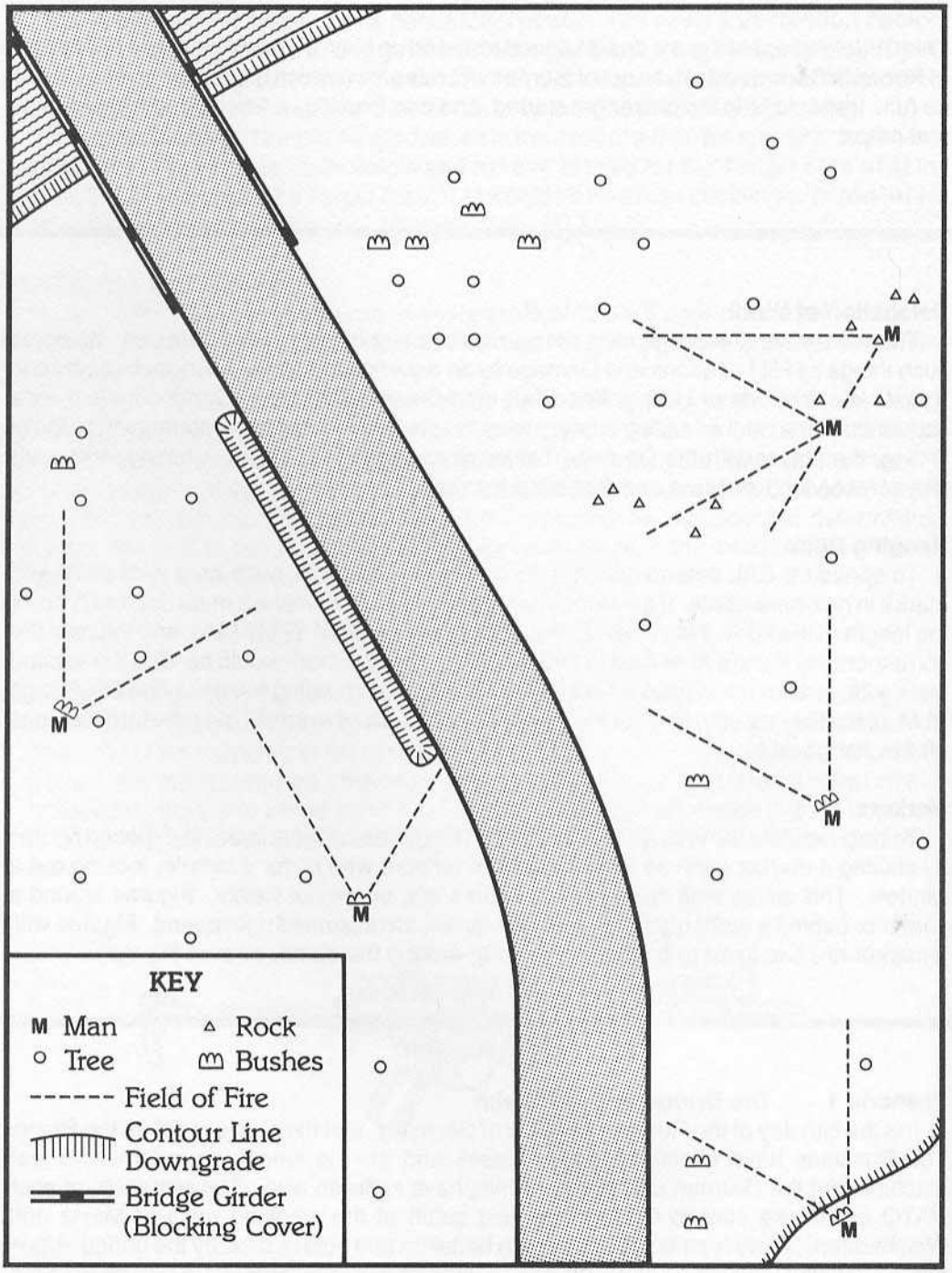
Three hours later your squad is well dug-in in a "buzz-saw", so that everyone can be counted as looking over cover (Target Size ALM = -4, Auto ELE = -3) while still being able to fire from a braced kneeling stance (ALM = +5). You have at your disposal one M249 Minimi with a 200 round belt. Each man has an M16A1 and two extra magazines.

This beginning scenario is designed for 5 to 8 players, each of whom will run one man, while the referee runs the enemy. It is pretty much a "turkey shoot", aimed at teaching the basics of Odds of Hitting and Damage.

To set up this scenario, study the map and copy it onto a suitable playing surface (hex map or table with 1 hex = 1 inch). The scale for this scenario is the standard 2 yards per hex. Place each man on the field so that his Field of Fire (Section 2.3) covers the bridge.

"If you're in combat
And the odds aren't fair,
Don't look for me,
I won't be there."

Fred the Singing Bandit



Scenario 1: The Bridge at Oppenheim

The idea behind the "buzz-saw" pattern is to overlap Fields of Fire from different directions, so that an enemy cannot find cover from all incoming fire. The trees and rocks marked on the map are blocking cover, but can only really cover a man from one direction of attack. So, for maximum effect, the squad's men should be spread out on both sides of the road. On a map, the "Ms" and dashed lines indicate a possible set-up for 6 men and their Fields of Fire.

As mentioned above, the squad is well dug-in. The men are in foxholes with sandbags on the rim so that they can fire, while only exposing the top of their heads and eyes. This gives each man a very small target area, making him hard to hit. Since sandbags to either side of his Field of Fire block his periphery, only opponents who are in his Field of Fire can fire at him. The disadvantages of this set-up are 1) Field of Fire cannot be changed without losing the preceding advantages (if changed he becomes a man firing over cover, Target Size ALM = 0, Auto ELE = +2), 2) if a man is hit it will be in the head (use the firing column with a 00-22 roll), and 3) his Field of View is limited to his Field of Fire. Note that you will not find this "dug-in buzz-saw" in the rules: it is an example of how you can expand the realism of play by common sense extensions of the rules.

"This war will not end until there is Just Us!"

Ictentrid O'Reilly

The following table gives character and weapon data for both sides. All the Shot Accuracy values have been determined. To keep things simple, everyone except the NATO squad leader has the same Skill Level and Combat Actions. The players decide who will run the squad leader and who will run the Minimi.

		M16A1		M249		AKM47	
NATO Squad Leader		**Aim Time**	**Shot Accuracy**	**Aim Time**	**Shot Accuracy**	**Aim Time**	**Shot Accuracy**
Skill Level	5	1	-11	1	-17		
Skill Acc Level	11	2	-1	2	-7		
Combat Actions	6	3	2	3	0		
Knockout Value	35	4	4	4	2		
		5	5	5	4		
		6	6	6	5		
		7	7	7	7		
		8	8	8	8		
		9	9	9	9		
		11	11	11	11		
NATO Soldier / Russian							
Skill Level	2	1	-15	1	-21	1	-16
Skill Acc Level	7	2	-5	2	-11	2	-5
Combat Actions	4	3	-2	3	-4	3	-2
Knockout Value	10	4	0	4	-2	4	0
		5	1	5	0	5	1
		6	2	6	1	6	3
		7	3	7	3	7	4
		8	4	8	4	8	5
		9	5	9	5	9	6
		11	7	11	7		

"Listen...When I want your opinion, I'll tell you what it is."

Sgt. Ingram

The scenario begins as the Russians advance onto the bridge. There is a total of 48 Russians: 8 in two jeeps and 4 squads of ten on foot. Their only arms are the AKM47s (with two extra magazines each, AP ammunition). Their initial advance consists of one squad on point (one point man, 4 flankers, 5 bringing up the rear) and one of the jeeps with four men following. This group is moving at 1 hex per phase as it comes on board. The rest

of the Russians remain at the north end of the bridge, 20 hexes off board. To keep things simple, no firing on or off board is allowed (the referee could extend the map, however, drawing the bridge and far bank).

The NATO squad has had time to conceal their foxholes, so they will not be spotted until they fire.

The goal of the NATO squad is to incapacitate all 14 of the lead Russians on the first phase of fire. This would so demoralize the rest of the enemy that they would fall back and regroup. If this condition is not reached, the rest of the enemy will attack to support their comrades' retreat (the jeep can move 16 hexes per phase). This engagement will last 60 phases, after which the Russians fall back and regroup. Diehards can continue play at their own risk.

Scenario 2 Police Raid

"I think I'm allergic to war."

Din the Decisive

After a month of undercover investigation, the manufacturing center for a major drug ring has been located. Police have isolated the area and a SWAT team of ten men has been brought in. Police surveillance estimates the building occupants as three guards, two technicians, and one leader.

The manufacturing center is located in a building which has had all its windows boarded up. There are, therefore, no details of internal activity, but drawings and floorplans of the building have been pulled from city files and are available as shown on page 38. Possible entry points for the SWAT team are the doors and windows.

The SWAT team can be armed with UZI sub-machineguns, M16 rifles, or M870 shotguns and are equipped with Medium Rigid Body Armor. Their stats are given in the following table along with those of the suspects. The suspects are in normal clothing and are armed with M16 rifles and M92F pistols.

		Shot Accuracy		
SWAT Team	**Aim Time**	**M16**	**Uzi**	**M870**
Skill Level 6	1	-10	-11	-11
Combat Actions 6	2	0	0	0
Knockout Value 42	3	3	3	3
	4	5	4	5
	5	6	6	6
	6	7	7	8
Suspect Guard	**Aim Time**	**M16**	**M92F**	
Skill Level 5	1	-11	-6	
Combat Actions 8	2	-1	0	
Knockout Value 25	3	2	1	
	4	4	2	
	5	5	3	
	6	6	4	
Leader / Technician	**Aim Time**	**M16**	**M92F**	
Skill Level 3	1	-13	-8	
Combat Actions 7	2	-3	-2	
Knockout Value 21	3	0	-1	
	4	2	0	
	5	3	1	
	6	4	2	

Police Entry

The player running the police should choose his entry path or paths and divide his team up as he wishes. He will not know where the opponents are within the building.

To force a door or window, one policeman must use a sledge or equivalent device to force entry. His chances of forcing entry are 80% for a doorway, and 90% for a window. Forcing a door or window takes 1 phase and no movement or fire takes place in the first phase. Any door or window resisting entry can be hit again. Each try consumes 6 Action Counts. Once entry is established, police are free to enter and arrest the suspects. Don't forget that the police using the sledge must pick up their weapons and make sure to account for time to climb through windows (Table 7B).

The Suspects

At the end of phase 1 the suspects are placed in the building by a 0-9 roll. Roll a 0-9 for each suspect and place him on the appropriate numbered hex.

The suspects will be surprised by the raid and will not have their rifles ready. For each of them, roll a 0-9 number and refer to the following table to determine how many hexes away his rifle is. Place the rifle on the map randomly at the appropriate distance, using markers.

"Who died and made you Lieutenant?"

Sgt. Servo

Distance from Rifles

Roll	Guard	Leader	Technician
0	0	0	*
1	0	0	*
2	0	2	*
3-6	1	4	*
7	2	6	-
8	3	8	-
9	4	10	-

All the Suspects have a pistol on them which they may choose to use rather than their rifles. An asterisk in the Technician column indicates they are armed with a pistol and will use it. A dash (-) indicates they will flee and surrender if cornered or ordered to freeze.

Police Custody

Police entering the building will be confronted by a number of people; some armed, some fleeing, etc. Assume it takes 1 AC to determine if a person has a drawn weapon. If armed we would suggest you assume he will use it.

For a police officer to tell a suspect to "Freeze" costs 2 AC. Once he has frozen, it costs 3 AC to tell him to drop his weapon and for him to comply. At this point the suspect can be searched and handcuffed, but that will take essentially forever. To move a prisoner at gunpoint takes 4AC per hex, but allows an officer to remove a prisoner from the building.

Stray Fire

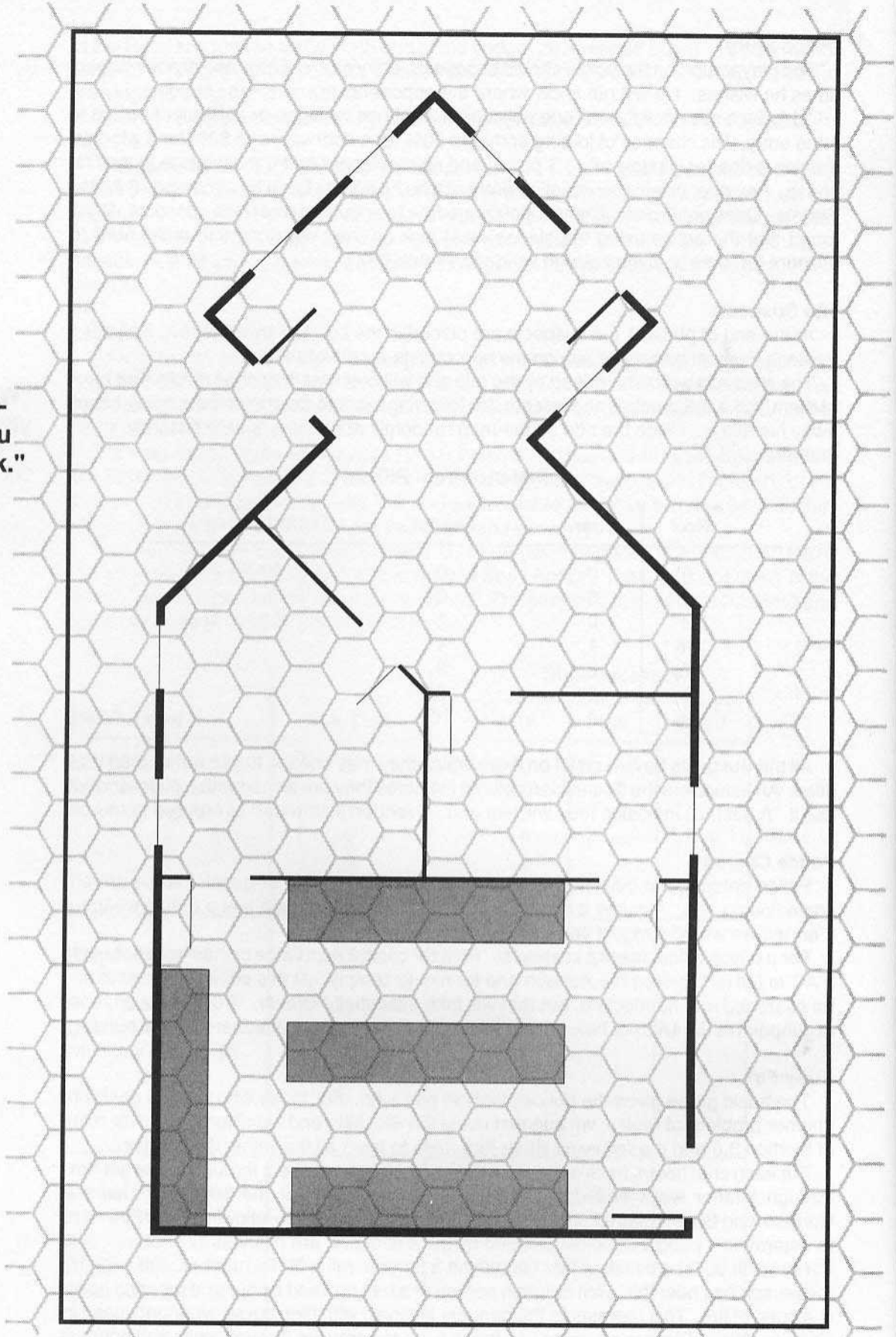
The basic game gives the police plenty to play with. For those who want to deal with another problem of reality, we suggest using the Blocking and NonBlocking Cover rules of Section 3.8 and the following Stray Fire rules to track all fire within the building.

For each shot taken, track a line from the hex the shot was fired, through the target hex, through interior walls and doors, and to an exterior wall of the building. Use the NonBlocking Cover rules for fire crossing walls and doors with the following Blind Fire rules to determine if people in hexes crossed by the line of fire are hit by stray shots.

For each bullet crossing a hex containing a person, roll a 00-99 number. On a 00-16, the person has been hit. Roll for each person in a hex crossed by fire and for each bullet in a burst of fire. This represents the dangers involved with high power weaponry used in close confines. Players may also use these rules to spray fire through walls and doors at unseen opponents.

"All my work is guarenteed for life, or you get your money back."

Dr. Oscar Sneiderbunk



Scenario 2: Police Raid

THIRD EDITION PHOENIX COMMAND

Third Edition Phoenix Command contains many product improvements. These are listed below to help players familiar with the1st and 2nd editions find rule modifications and improvements.

Basic Combat System (Chapter 2)

A Basic Combat System has been added to introduce players to the **Phoenix Command** system and provide a fast and easy system for role-playing use. It maintains a high degree of realism, yet minimizes the work load on player and referee.

Game Flow (Section 1.3, 2.1, 2.2)

Game Flow within each Phase now takes place on an **Impulse** basis; with 4 Impulses per Phase. This system greatly improves resolution and deletes the need for the Target Visibility Table.

Ducking (Section 2.5, 3.1)

A -5 ALM Ducking or Appearing ALM has been added to account for target motion as he appears or ducks out of sight.

Movement ALM (Section 3.1)

The Moving Shooter and Moving Target ALMs have been expanded to include aim time restrictions, and the tables have been modified.

Field of View (Section 2.3, 5.1)

Field of View with the weapon at the ready, in a Firing Stance, and during Pinning Fire are defined.

Shock Points (Section 3.3)

The Shock Effects of broken bones have been included in the updated Damage Tables to more accurately simulate the incapacitating effects of Disabling Injuries.

Automatic Shotguns and Grouping Pellet Hits (Section 3.5)

Rules defining the use of fully automatic shotguns and for grouping pellet hits have been included.

Explosive Weapon and Grenade Accuracy and Scatter (Section 3.6)

New rules for explosive weapon accuracy, thrown grenade accuracy, and scatter have been included.

Knockdown (Section 5.12)

A Knockdown factor has been defined which determines whether a projectile knocks a target off balance or off his feet.

Pinning Fire and Cover Fire (Sections 5.9 and 5.10)

Pinning Fire Field of View has been included along with rules for Cover Fire.

Single and Double Action Revolvers (Section 5.11)

Rules defining the use of single and double action weapons have been included.

Spotting and Sound Detection (Sections 5.2 and 5.3)

The Spotting and Sound Detection rules have been improved.

Effects of Incapacitation (Section 5.13)

Levels of Incapacitation have been defined.

"Once you've pulled the pin out of Mr. Grenade, he is no longer your friend."

Sgt. Servo

USING PHOENIX COMMAND

Phoenix Command has been designed as a dual-purpose game. It may be used as a man-to-man modern wargame which requires no other rules, or it may serve as a combat system within another game, usually role-playing. The following are just a few ways in which this system can be used.

Using Phoenix Command as a Stand-Alone Wargame

Phoenix Command is an ideal framework for modern, man-to-man level wargaming. The referee simply chooses a scenario, whether from reality, a book, or a movie, and draws up a battle map. Pregenerated troops may be used, or custom characters can be created. Appropriate weapons and equipment are assigned to each character and teams are drawn from available players. The referee then briefs each team, and the game begins. The referee controls game flow and has authority to settle disputes. The two sample scenarios of Section 4.2 are simple examples of the type of games which can be played.

Using Phoenix Command with other Games

Phoenix Command makes a ideal combat supplement for other games, especially for. players who wish to add more realism to their gaming. The rules of Chapter 1 provide guidelines for adapting other games to **Phoenix Command**. Players make this conversion and use **Phoenix Command** for combat, medical aid, and wound recovery. Players are encouraged to use only the parts of **Phoenix Command** which suit their style of play. This might mean using the **Phoenix Command** Odds of Hitting but staying with their other game's damage system. In these ways, **Phoenix Command** can be tailored to your own needs, and will greatly expand your gaming experience.

Using Phoenix Command with other Leading Edge Games

All **Leading Edge Games** products have a combat system similar to or simpler than **Phoenix Command**, and are designed to be completely compatible with it. All weapons and rules that are a part of the **Phoenix Command** line may be used in combination with any **Leading Edge Games** product.

Additionally, all equipment and rules supplements to other **Leading Edge Games** products can be used with **Phoenix Command**. This expands **Phoenix Command** play to include any level of technology or role-playing venue.

"I must be doing something right. Not everyone here is dead."

Dr. Oscar Sneiderbunk

Phoenix Command Tournament Rules

The **Tournament Rules** are designed to allow players to throw together a pick-up game, as well as for actual tournament play. A simple point system is used to balance the game, and tactical skill and knowledge of weaponry are the keys to victory.

Teams may be assigned, or the battle may be a free-for-all. Unless it is a friendly pick-up game, it is recommended that one person be the referee, and control game flow. A map which is acceptable to all concerned is used, or is drawn up. Players may be placed on the map at random, or assigned a **Baseline** - a specific point of entry.

Players may choose to have characters who are incapacitated or killed reenter, unwounded, at their team's Baseline, to create an endless battle.

Each player receives 58 points per combatant. These are used to "buy" characteristics, skill levels, armor, and weapons. Points may not be shared between characters or players.

Characteristic points cost one point each, and no characteristic may be less than six.

Combatants are base 3rd **Skill Level**, and each extra level costs 3 points. For example, 5th level costs 6 points.

Body Armor costs 1/2 the PF, rounded up. Heavy Flex costs 5, for example. Helmets costs 1 for Rigid or lighter, 2 for heavier.

Weapons cost are found on the following table. The only limit on the number of weapons which may be taken is the character's point total. All ammunition is FMJ, or HEAT for explosives.

Weapon Costs

Weapon	Cost
Machine Gun, Grenade Launcher	6
Automatic Rifle or Automatic Shotgun	4
Sub-Machinegun*, Anti-Tank weapon or RPG	3
Non-Automatic Rifle or Shotgun	2
Pistol, Hand Grenade, or 1 Reload	1

* The HK53, AKR, and Bushmaster are actually Sub-Machineguns, but cost as much as Automatic Rifles.

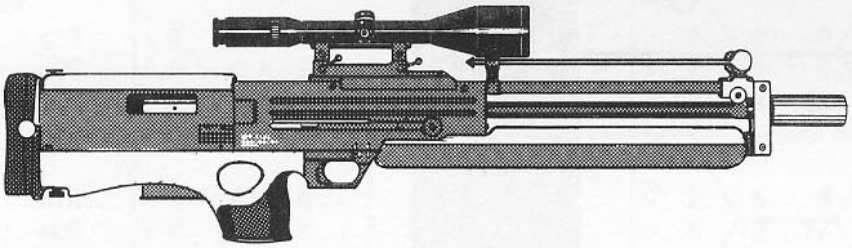
"Listen, Lieutenant; No food, No fight."

Sgt. Servo

Each character earns **Victory Points**. The single character with the highest total is the individual winner. Add up the individual's totals for each side to decide which team wins.

Victory Points

3	points for killing or incapacitating an opponent
1	point for a disabling wound to an opponent
0	points for any other wound on an opponent
-3	for being killed or incapacitated
-1	for leaving the playing field disabled
-2	for leaving the field undisabled, anywhere except the opponent's Baseline
+4	for leaving the field undisabled on the opponent's Baseline



5 OPTIONAL RULES

These optional rules allow the player to more accurately simulate combat; certain details left out of the basic game are included here, as are rules covering special situations. Any or all of these rules may be added by agreement of the players.

5.1 EXPANDING THE FIELD OF VIEW

In the basic game, a character's **Field of View** is his front 180 degrees. He may respond to any threat in this front 180 degreesbut he cannot see or react to a threat coming from behind. There are times, however, especially in close combat, when a character will not know in which direction the threat will come. In these cases, he can increase his Field of View by glancing to the side or rear. These glances take time. Increasing his Field of View to 240 degrees decreases his Combat Actions by 1, increasing it to 300 degrees decreases his Combat Actions by 2, and increasing it to a full 360 degrees decreases his CA by 3. Note that a character may not increase his Field of View when in a Firing Stance or if using the Pinning Fire rules of Section 5.9.

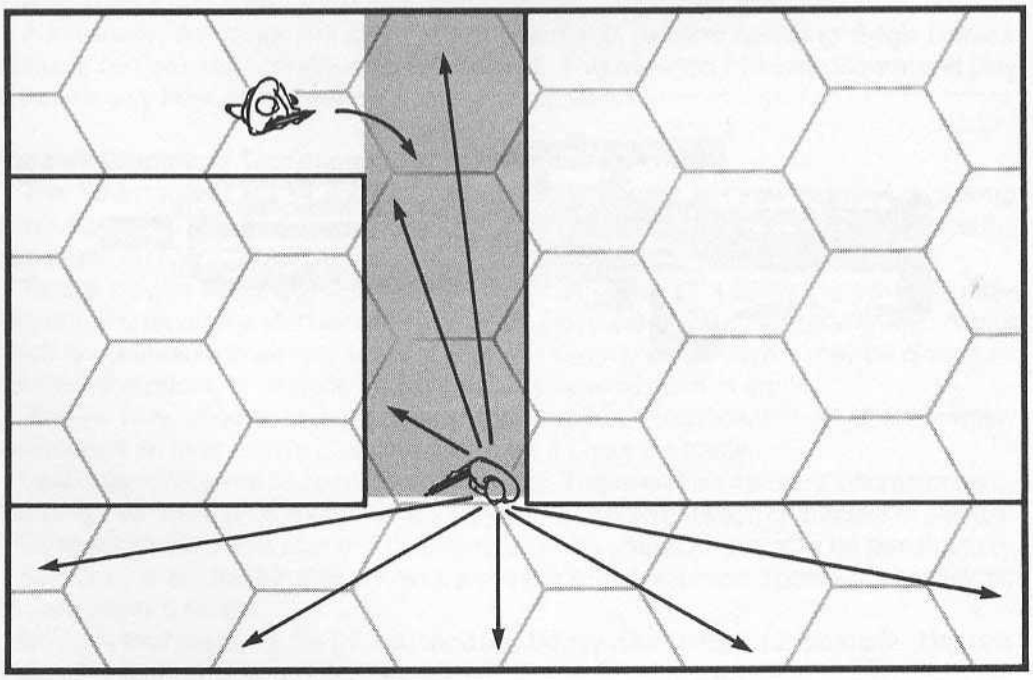


Figure 7: Expanding the Field of View

Example:

Donovan, whose CA = 5, is in a building and has lost contact with his comrades. He hears gunfire and motion in adjoining rooms and hallways. Confused, he decides to stay put and remain on the defensive. He is standing at the "T" of a corridor and, fearing attack from any direction, increases his Field of View to 300 degrees (2 point penalty) as shown in Figure 7. This leaves him an effective CA of 3 and means he receives an action on the 1st, 3rd, and 4th Impulse of each phase. Seconds later, an opponent runs around the corner behind Donovan. Donovan spots the opponent in his increased Field of View, changes Facing 120 degrees (1AC) on the first Impluse of the phase, and fires a Snap Shot (1AC) on the third Impulse of the phase.

5.2

SPOTTING

In the basic game, it is assumed that anyone within the character's line of sight is immediately seen. To add more realism the following **Spotting Rules** may be used to determine the time required to spot a target.

These basic Spotting Rules give the **Spotting Time**, in Impulses, required to spot a target. They are intended for close combat and depend on whether the target is **Moving**, stationary but **Using Combat Actions**, or stationary and **Frozen**. A Moving target is someone or something which is physically in motion on the play field. A stationary target using CA is someone who is not Moving, but is using CA for aiming, reloading, or any other physical action. A stationary target who is Frozen is someone who is not using any CA for any action other than those which do not require physical motion, such as spotting and communication. Movement of the eyes or lips is not considered "physical motion" in this sense.

To use these rules, simply enter the following **Spotting Time Table** for the appropriate terrain type. Tables are given for No Cover, a flat surface such as a parking lot; within a Town; Hilly terrain with cover, and Jungle or Heavy Brush. Simply enter the appropriate table cross-indexing the target range in hexes with the target's Motion and Target Size ALM. (Round Target Size ALM down) This gives the Spotting Time.

	Target Size 8, 4, or 0								
Range	**Moving**			**Using CA**			**Frozen**		
	8	**4**	**0**	**8**	**4**	**0**	**8**	**4**	**0**
No Cover									
<10	0	0	0	0	0	0	0	0	0
<20	0	0	0	0	0	1	2	5	8
<40	0	2	2	2	2	3	12	24	33
Town									
<10	0	0	0	0	0	1	2	5	8
<20	0	0	1	0	2	2	5	12	17
<40	2	2	3	2	5	8	24	45	54
Hill									
<10	0	0	1	0	2	2	5	12	17
<20	0	2	2	2	2	3	12	24	33
<40	2	5	8	5	12	17	45	68	137
Jungle									
<10	1	2	3	2	3	5	17	33	45
<20	2	3	5	3	8	12	33	54	68
<40	8	17	24	17	33	45	137	275	275

"Listen, Lieutenant, we either do it my way or I'll have to shoot you."

Sgt. Servo

Example:

Donovan is advancing down an alley. There is a sniper Frozen in a window 30 hexes away. Donovan's Spotting Time is found on the Town terrain table at range 40, for a Frozen target of Target Size ALM = 0 (in firing stance) and is 54 Impulses.

The sniper has been watching the alley and spots Donovan in 2 Impulses. After that time he starts to bring his rifle to bear. He is now stationary using CA, so Donovan's Spotting Time is now 8 Impulses. This is not a good situation to be in, but gives an indication of why Town fights are unpopular.

Pinned Spotting

The preceding rules give the Spotting Time to pick up a new target. Once the character has spotted a target it is much easier to spot him a second time. For basic play, a three hex convention is used for second spotting. In other words, once a target is spotted, the character can respot any target within one hex of the same location with a Spotting Time of 0. This is **Pinned Spotting**; the position is pinned and the spotter knows where to look. This is one of the main reasons it is advisable to keep moving in combat. Once the enemy has a position pinned, they can effectively bring fire to bear without a spotting time penalty.

Character Ability and Spotting Time

The preceding rules give the Spotting Times for an average soldier whose CA = 4. The Spotting Time can be considered in Action Counts with the character's Spotting Time based on his Combat Actions. This more closely corrects the Spotting Time for skill and experience. For the purist, the Spotting Time should be read in Action Counts, and the character's CA for spotting should be taken off **Table 1D** for a Maximum Speed (MS) of 4 versus his Intelligence Skill Factor (ISF). This separates the character's strength and encumbrance from the spotting time and depends only on his intelligence, or quickness of thought, and skill. For those using our role-playing games, the SAL used in determining the ISF should be based on his Traps and Spotting Skill Level.

5.3

SOUND DETECTION

In many situations a character must rely on his hearing to warn him of approaching danger. The following **Sound Detection** rules give the chance of hearing various noises based on situation and conditions.

To determine the chance of detecting a sound, enter the following **Sound Magnitude Table** to find the **Sound Magnitude (SM)** of the noise the character is trying to detect. The greater the SM, the louder the noise. This SM is adjusted for conditions such as range, wind, background noise, and the listener's attention. To make these adjustments, simply enter the following tables, as appropriate, and add the sound modifiers to the SM. These sound modifiers include:

Range

Correction for noise level as a function of distance from the source.

Intervening Factors or Conditions

These modifiers adjust the SM for air conditions, intervening cover such as doors or brush, and general terrain conditions.

Background Noise

These modifiers adjust the SM for the background noise level at the listener's position. If the Background noise level is much louder than the sound, he will not be able to detect it. Note that the Background Noise level is the average continuous noise present when

the listener is trying to hear the sound. Loud bursts of background noise such as cheers from a crowd will only be effective during the time they are present .

Listener Attention

These modifiers adjust the SM for the listener's condition of alert and readiness.

Once the **Effective Sound Magnitude (ESM)** is determined by adding all appropriate modifiers to the basic SM, enter the **Sound Detection Table** with this ESM to find the chance of detecting the sound. The listener rolls a 00-99 number. If less than or equal to the detection chance is rolled, the noise is heard. For single noises such as a gunshot, the listener gets only one roll for detection. In the case of a continuous noise, the listener receives one roll each phase.

"My loyal troop... you've come back to save me!"

Captain Stora

"Actually, sir, we came back for your gun..."

Gil the Treacherous

Sound Magnitude

Weapon Fire		**Weapon Fire**	
Pistol or SMG		Grenade Launchers	103
Small Caliber	102	Rocket Launchers	140
9mm	105	Lase Rifle	70
Magnums	107	Gauss Rifle	95
Silenced Pistol / SMG	60	Slivergun / Flechette	110
Rifles, MG, or Shotguns	110	Rocket Rifle	120
Conversation		**Alarms**	
Whisper	20	Telephone or Door Bell	83
Single Voice	45	Dog Bark	88
Small Group Conversation	55	Whistle	90
Loud Conversation	65	Megaphone / Alarm	100
Shout	85	Air Raid Siren	125

Combat Actions	**Using Normal AC**	**Using x10 AC**
Weapon Action		
Automatic Pistol or SMG	59	26
Automatic Rifle or MG	60	27
Shotgun	62	29
Bolt Action Rifle	58	25
Cock Revolver	57	24
Insert Magazine	45	22
Open Velcro Pocket	56	20
Open Door Latch	57	15
Wire Cutters	45	15
Bolt Cutters	55	25

Movement and Actions		**Terrain Modifiers**	
Grenade Landing	53	Grass / Sand / Carpet	0
Person Moving		Moist Earth	+3
Creep 1 / 4 HPP	20	Hard Ground (dirt)	+8
Stalk 7 HPP	26	Gravel	+11
Walk 2-3 HPP	43	Brush	+12
Trot 4 HPP	56	Leaves	+13
Run 5+ HPP	58	Hard Surface	
Jump to Ground (6-10 foot)	65	Soft Sole	0
Body Falling to Ground	50	Hard Sole	+8
Dropped Weapon	70	Metal Sole	+14

"Just another tragic case of terminal kinetic energy poisoning."

Dr. Buen-Scheuk

Range Modifier

Range	Mod	Range	Mod	Range	Mod
0	0	16	-30	260	-54
1	-6	23	-33	360	-57
2	-12	32	-36	510	-60
3	-16	45	-39	1000	-66
4	-18	64	-42	2000	-72
6	-22	90	-45	3000	-76
8	-24	130	-48	5000	-80
11	-27	180	-51	15000	-90

Intervening Factors and Conditions

Outdoors	0
Indoors	+3
Direct Line of Sight	0
Isolated from Sound	
Through Brush	-2
Interior Wall / Door	-4
Light Exterior Wall / Door	-10
Medium Exterior Wall / Door	-12
Isolated from Sound	
Heavy Wall / Door	-18
Solid Cover (bunker)	-26
Wind	
None	0
Low	-1
Moderate	-3
High	-6
Gale Force	-9

Background Noise

Wind	
Low	-10
Moderate	-20
High	-35
Gale Force	-60
Water	
Ocean Surf (Pacific)	-20
White Water Stream	-40
White Water Rapids	-70
Conversation	
Whisper	-20
Normal Voice	-45
Small Group Conversation	-55
Loud Conversation	-65
Shouting	-85
Movement (Walking On)	
Grass / Sand / Carpet	-43
Moist Earth	-46
Hard Ground (dirt)	-51
Gravel / Brush	-54
Leaves	-56
Hard Surface (soft sole)	-43
Hard Surface (hard sole)	-51
Miscellaneous	
Urban House at Night	-18
City Street at Night	-20
Air Conditioning in Building	-30
Outdoor Crickets	-35
In House off Busy Street	-40
In a Jet Aircraft	-50
On a Busy Street	-70

Listener Attention

Sleeping	-20
Critically Preoccupied	-3
Preoccupied	-1
Normal Alert	0
Expecting Alarm	+2
Focused Attention	+6
Fired Weapon Recently	-6
Using Directional Sound Amp.	+24
In Power Armor	+20

Sound Detection Chance

ESM	Chance	ESM	Chance	ESM	Chance
10+	99	5	88	0	8
9	98	4	82	-1	2
8	97	3	72	-2	2
7	95	2	50	-3	0
6	92	1	20	-4	-

Example:

A group of guards are playing a lively game of poker inside a light frame house. It is cold outside, so the windows and doors are closed. Outside a guard dog barks at an intruder 6 hexes away. The guards' chance of hearing the dog is based on a ESM of 88 (dog bark) - 22 (range 6 hexes) + 0 (no wind) - 10 (isolated by light wall) - 55 (background small group talking) - 1 (listeners preoccupied) = 0. Each guard's chance of hearing the dog is 8 per cent per phase.

5.4 DEFENSIVE SKILLS

The basic game does not account for the character's defensive skills. A skilled opponent, who is aware of a threat, will be a harder target to hit than an unskilled one. The skilled opponent will present a smaller target area and know how best to use cover and movement to elude fire.

The following presents a **Defensive ALM** based on the target's Intelligence Skill Factor (ISF) of Section 1.3, Step 6. This Defensive ALM is added to the Effective Accuracy Level (EAL) of all shots fired at the character.

Defensive ALM

ISF	Defensive ALM	ISF	Defensive ALM	ISF	Defensive ALM
3	+16	10	+5	20-22	-2
4	+13	11	+4	23-24	-3
5	+11	12	+3	25-27	-4
6	+10	13-14	+2	28-30	-5
7	+8	15-16	+1	31-34	-6
8	+7	17	0	35-38	-7
9	+6	18-19	-1	39-40	-8

5.5 INITIATIVE

In a combat situation, **Initiative** and **Morale** have probably the most important role in determining a combatant's overall effectiveness. In the Basic Game, the combatants react as perfect automatons. Their Combat Actions determine the speed with which they can perform any act, but not a moment is lost pausing to think,and not an instant is wasted. In reality, only the perfect soldier would be capable of such action. The following presents a simple way in which game flow can more accurately represent real people in combat.

Each player must decide what **Course of Action (COA)** his character will follow. A Course of Action is a planned series of actions such as: 1) advance to window, 2) kneel, 3) establish a firing stance out the window. The number of actions a character may

perform during a COA is limited to the **Action Number (A#)** defined below. The time, in Action Counts, required to think of this COA is given by the **Initiative Time (IT)**. After IT Action Counts required to think, the character embarks on the COA.

The Initiative Time (IT) and Action Number (A#) are found on the following **Initiative Time Table** opposite the Intelligence Skill Factor (ISF) of Section 1.3, Step 6.

**"See Squid fight.
See Squid get scared.
See Squid run away
and abandon his
friends.
Don't be a Squid."**

Death Bunny

Initiative Time Table

ISF	IT	A#	ISF	IT	A#	ISF	IT	A#
3	32	2	8-10	20	3	21-28	8	5
4-5	28	2	11-14	16	3	29-39	4	6
6-7	24	3	15-20	12	4	40+	0	7

Example:

Donovan has an Intelligence Skill Factor of 21. This means his Initiative Time (IT) = 8 and Action Number (A#) = 5.

Donovan has just entered a building and is hiding around the corner of a corridor. Somewhere down the corridor is a room from which an opponent is firing. He decides to peek around the corner and duck back. This decision takes 8 AC. So, 8AC later he looks around the corner (1AC), then ducks back (1AC).

Donovan saw an empty corridor with two doors. The first door seems to be the one from which he hears gunfire. He decides to set down his rifle, arm a grenade, draw his pistol, run down the corridor (2 hexes), and toss the grenade through the door; a total of 5 separate Actions. This Course of Action takes him 8AC to devise. So after 8AC, he proceeds with his plan.

The preceding example shows how the Initiative Time (IT) is used. While a character is pausing to think, he is free to use those AC changing facing or stance, reloading, or any other action which would not expose him to fire or interfere with his thinking.

Once a Course of Action is started, it cannot be canceled until at least 1AC is spent. A character may, however, respond immediately to any threat. For example, if an opponent had jumped Donovan while he was thinking, he could immediately respond to this threat. The IT applies only to the time required to think of his own Course of Action (usually offensive), not immediate threat response. If a character is interrupted during the performance of a Course of Action, he may immediately respond, and then, without penalty, continue on his COA. He cannot, however, alter his plans in midstream without pausing for IT AC. If it is not safe to pause for IT AC, he can immediately flee to the nearest cover and reconsider from relative safety.

Example:

Donovan has Combat Actions = 5 and embarks on the Course of Action determined in the preceding example. In the 1st phase, he sets down his rifle (4AC) and starts to grab a grenade (1AC of 4). In the 2nd phase, he finishes grabbing the grenade (3AC) and starts to arm it (2 of 3AC). In phase 3, he finishes arming the grenade (1AC), draws his pistol (2AC), and moves 2 hexes down the corridor (2AC). In Impulse Four of Phase 3, Donovan moved one hex down the corridor. At the same time an opponent entered the corridor from the far end. Neither Donovan nor the opponent had any extra Combat Actions in the fourth Impulse so each spots the other, but no shots are fired.

On the first Impulse of Phase 4, both Donovan and the opponent exchange Snap Shots. Both their actions were immediate, taking place 1AC into Phase 4. Donovan incapacitates his opponent, while the opponent misses. Donovan can now either wait IT = 8AC and change his plans or proceed without further delay. Donovan proceeds and tosses the grenade into the room (2AC).

The preceding rules have a very important aspect: a squad leader or commander can relay orders to his troops in exactly the way he would plan his own actions. If well disciplined, they will respond and a preplanned, coordinated attack can be initiated. Once the plan is completed or interrupted, the troops must rely on their own initiative.

Players should realistically model the time it takes a leader to relay his orders. A complex set of instructions could take minutes to communicate. Once coordinated and positioned, the leader can give the go signal, and all troops will jump to action. Once this preplanned Course of Action is accomplished, the leader should reassemble his unit, evaluate the situation, and give new orders. For basic orders, you may assume it takes 2 times the leader's IT to issue each order. Therefore if a leader with IT = 8 were to give orders to 4 maneuver elements, the time required would be 2 x 8 = 16 AC per order x 4 orders = 64 AC. For leaders with an ISF of 40 or more, assume an IT of 4 for giving orders.

Combat now takes place on a more realistic time line. There will be minutes of silence as each side coordinates and plans, followed by intense action. The unit with fastest IT will be able to keep up the pressure and remain on the offensive. An ill led unit with long IT will be unable to go on the offensive and will be forced to respond to the enemy's attacks.

5.6 MORALE

Whenever someone is being shot at, the natural response is to seek cover. A character will remain exposed to fire (either moving or returning fire) only as long as a shot does not come too close to his position; a character's **Critical Distance** determines how close this might be. The Critical Distance depends on his Knockout Value and is found on the following table.

Critical Distance Table

Knockout Value	Critical Distance	Rally Time	Knockout Value	Critical Distance	Rally Time
1-4	6	160	30-39	2	20
5-9	5	120	40-49	1	8
10-19	4	80	50-79	1	4
20-29	3	40	79 +	1	0

Whenever a shot or automatic fire burst elevation roll misses a character, the shooter should find the EAL with Odds of Hitting just larger than the number rolled. If the difference between this EAL and the EAL required to hit is greater than the Critical Distance, the target is unaffected by the miss. If the difference is less than or equal to the target's Critical Distance, he must make a **Morale Roll.**

To make a Morale Roll, the character rolls a 00-99 number. If less than or equal to his Knockout Value (KV) is rolled, he is unaffected by the near miss. If greater than his KV is rolled, he must take cover (duck) or go to a **Low Prone** position. A Low Prone position is a defensive posture from which one cannot move or fire.

Once a character is under cover, he can attempt to make a **Tripled Morale Roll** (a roll less than or equal to 3 times his KV). If he makes this roll, he can reinitiate action. If he fails this roll, he will remain under cover until rallied or he comes under life threatening fire. If he comes under life threatening fire, he will either flee or surrender.

To be **Rallied**, another comrade who has not failed morale must enter the hex of the broken man and spend **Rally Time AC** bolstering his morale. The Rally Time is based on the unbroken character's KV and is found on the preceding **Critical Distance Table**. For each set of Rally Time AC spent rallying, each broken character in that hex is given another chance to make his Morale Roll. If he makes this roll, he has been rallied and is ready for action.

Example:

Donovan has a Knockout Value (KV) of 15 and, therefore, a Critical Distance of 4. If a shot with an EAL of 17 (Odds of Hitting = 46) is fired at him, and a 52 is rolled for the Odds of Hitting, the shot misses. The number just larger than the one rolled is for an EAL of 18. The shot, therefore, missed by 18 - 17 = 1 EAL. Since this near miss is less than or equal to his Critical Distance, he must make a Morale Roll. Donovan rolls a 67 and fails his Morale Roll so dives for cover behind a boulder. Once under cover, he attempts his tripled Morale Roll (3 times his KV of 15 = 45). He rolls a 48, failing his second roll.

A few phases later, Donovan's squad leader enters his hex and orders him forward. Donovan's squad leader's Rally Time = 8, so after his squad leader expends 8 AC rallying Donovan, Donovan may attempt another Morale Roll (roll less than or equal to his KV). He rolls a 09, making his roll, so can reinitiate action.

5.7

SHOT TIMING WITHIN A PHASE

In the basic game, play advances on an Impulse by Impulse basis and all fire is resolved at the end of each Impulse. There are times, however, when detailed timing is desired, especially in situations of near-simultaneous fire. The **Master Phasing Count (MPC)** resolves this.

The Master Phasing Count (MPC) gives the moment within an Impulse when each of the character's Action Counts are performed. It is graduated in tenths of a second (5 for an entire Impulse), and is found opposite the Combat Actions that Impulse on the following table.

Master Phasing Table

Combat Actions That Impulse	Master Phasing Count 1	2	3	4	5
1			X		
2		X		X	
3	X		X		X
4	X		X	X	X
5	X	X	X	X	X

Donovan, who receives 2 Combat Actions this Impulse, would look on the Combat Actions 2 line and find two numbers: 2 and 4. These are the times (in tenths of a second) during the Impulse he completes each of his two Combat Actions. If Donovan fires on his 2nd AC, he fires on MPC4 of that Impulse. If he fires on his 1st AC, he fires on MPC2.

Example:

Donovan and an opponent exchange fire down a corridor. Donovan, whose Combat Actions = 2 that Impulse, fires on his 1st Action Count. The opponent, whose CA = 1, also fires on his 1st Action Count. Using the Master Phasing Count, we see Donovan fires on MPC2 just before the opponent's shot on MPC3.

Players can now resolve damage in the order shots are taken, from the lowest MPC to highest.

If a character is shot during an Impulse when he is about to fire, and he is not disabled or knocked out, his shot is executed with an extra ALM modifier of -10 to his aim. If he fires before he is hit, there is obviously no penalty to his aim.

If he is disabled or knocked out, there is an ALM modifier of -20 to his aim if the shot is taken within 3 MPC after the time of the injury. Any shots which would have been fired more than 3 MPC after the time of a disabling injury or knockout are cancelled.

Example:

Donovan hits and knocks out his opponent on MPC2. The opponent was returning fire on MPC3. Since this shot occurs within 3MPC of the time of his knockout, it is resolved with an additional ALM = -20.

5.8

SECOND SHOT ACCURACY

Successive shots into the same area are obviously somewhat more accurate, and the Second Shot rule reflects this. A shooter who fires a second shot at a target in the same hex in which the first shot was fired receives a +1 AC bonus to his second shot's aim time. To receive this bonus, the shooter must remain stationary and may not have broken firing stance.

Example:

A stationary shooter spends 2 AC aiming and fires a second shot at a target in the same hex as the preceding shot without breaking firing stance. His second shot's aim time is the AC spent aiming plus 1, or 2 + 1 = 3AC.

5.9

PINNING FIRE

A location can be **Pinned** if the shooter is in a firing stance and elects to aim at that location. The location can be up to one hex wide, and is usually a clearly definable spot, such as a window or corner. If a target appears in the pinned location, the shooter adds 1AC to the aim time spent aiming after the target appears. A shooter can pin only one hex at a time and his Field of View is reduced to 10 degrees.

Example:

Donovan pins a window from which he expects an opponent to appear. Two phases later, an opponent comes into view. Donovan spends 1AC aiming and fires. His shot's aim time is 1 + 1 = 2AC.

5.10

COVER FIRE

Cover Fire is an effective way to drive the enemy under cover so that he is less of a threat. It is most effective with fully automatic weapons, but single shot weapons can also be used. Cover Fire is aimed at a hex, or hexes, and assumes a Target Size of +10. If the Cover Fire hits, then any opponent appearing in that hex, or hexes, comes under immediate attack. The chance of hitting is taken from the **Automatic Fire Hit Chance Table (5A)** for automatic fire based on the Rate of Fire and Arc of Fire. For single shot fire, each round hitting the hex has an 11% chance to hit.

Example:

To cover a comrade's approach to a building, Donovan fires a burst of automatic fire from his M16 into the windows of the building. The windows are contained in an Arc of Fire of 3 hexes and Donovan's fire is accurate. During the Impulse, an opponent appears in the window and is attacked by Donovan's Cover Fire. Donovan's Hit Chance is taken from Table 5A with an Arc of Fire of 3 and Rate of Fire of 7 and is a 29. Donovan rolls an 18 and hits the opponent.

5.11

SINGLE AND DOUBLE ACTION WEAPONS

Revolvers and other pistols are available with either Single or Double Action triggers, depending on the weapon. A **Single Action** weapon's hammer must be manually cocked before firing each round, while a **Double Action** weapon can be cocked and fired with a single stroke of the trigger. This trigger stroke is much longer and stiffer than that of Single Action fire, and consequently impairs accuracy. Double Action weapons can be fired in the same way as Single Action weapons if the firer wishes.

Single Action weapons have a ROF of 2; in other words, it takes two AC to cock the weapon for a second shot. Double Action weapons have a ROF of 1. The basic Odds of Hitting assume weapons are being fired from a cocked position, or Single Action fire. If the shooter chooses to fire his weapon Double Action, his aim would have an additional -3 ALM applied. This penalty accounts for the long trigger stroke and greater amount of pressure required for Double Action fire. Note that the Rate of Fire applies only to a second or subsequent shot, but that the accuracy penalty applies to even a first shot.

Examples:

Axly is firing a Double Action revolver with a Rate of Fire of 1. He has just fired a shot and wants to continue firing as fast as possible. So, his next shot takes 1 AC to prepare and 1 AC to aim and fire. This shot would have an additional aim penalty of -3 ALM. If he had wanted to cock his revolver before firing, it would take him 2 AC to cock (Single Action fire), and 1 AC to aim and fire.

Donovan has just drawn his automatic pistol. The pistol has a round in the chamber with the hammer down. Donovan can either spend 2 AC to cock the hammer, or leave it down for Double Action fire. If he cocks the hammer, his shot would have no accuracy penalty. If he Double Action fires, his shot would have an accuracy penalty of -3 ALM. Because this is his first shot, the Rate of Fire does not apply. In other words, Donovan could fire his pistol after 1 AC of aim without having to spend 1 AC for Double Action fire.

5.12

KNOCK DOWN

In addition to the injuring effects of bullet wounds, knock down is a factor. This is particularly important in cases where the target is in body armor. The armor can stop the projectile's penetration but may result in the target being knocked off his feet. The **Knock Down (KD)** value of a weapon measures its knock down ability and is found in the **Weapon Data Tables.** To determine if a target has been Knocked Down simply cross-index the weapon's KD value with the Hit Location on the following **Projectile Knock Down Table**. If the KD is greater than or equal to the entry, that level of Knock Down effect is imposed on the target. These penalties range from a 1 to 4 Action Count penalty, to the target being knocked off his feet. The AC penalties represent the target being knocked off balance and represent the time required for him to regain his balance before he can take any action. The Knock Down result is just that; the target is knocked off his feet. It takes 1 Impulse for him to hit the ground during which he can take no actions. Once he hits the ground, it takes 3AC for him to roll into a position in which he can use his hands. From there, it takes another 3AC for him to rise to his feet or 2AC for him to rise to his knees.

Projectile Knock Down Table (PEN)

Penalty	Head	Body	Arm	Leg
-1 AC	2	11	2	3
-2 AC	3	14	3	4
-4 AC	4	17	4	5
Knock Down	10	19	16	6

Example:

Axly is hit in the head by a pistol whose PEN is 3. Luckily Axly was wearing a helmet which stops the bullet's penetration. The impact, however, causes him a 2 AC penalty as shown in the Projectile Knock Down Table.

Explosive Knock Down

Explosions also have Knock Down effects and are given in the following **Explosive Knock Down Table**. This table is used in the same fashion as the Projectile Knock Down Table, except the explosion's **Base Concussion (BC)** is cross-indexed with the target's armor type. Power Armor is an advanced high-tech exoskeleton used in the **High-Tech Weapon Data Supplement** and in our role-playing systems. It comes in three configurations; Light, Medium, and Heavy.

Explosive Knock Down Table (BC)

Penalty	Normal Infantry	Power Armor Light	Power Armor Med	Power Armor Heavy
-1 AC	50	270	520	770
-2 AC	66	350	700	1020
-4 AC	82	440	860	1260
Knock Down	90	480	950	1390

Example:

Axly is running over open terrain when a grenade explodes 2 hexes away. The blast causes him 52 PD in Concussion Damage. In addition to the wound,he is penalized 1 AC as shown on the Explosive Knock Down Table for a blast of BC = 52.

5.12

INCAPACITATION EFFECTS

In the basic game once a character has failed his Knockout Roll he has been Incapacitated. This incapacitation does not necessarily mean he is unconscious, it simply means he is out of action. The following **Incapacitation Effects Table** defines the various levels of Incapacitation, which can be used to define the character's potential actions following Knockout. To use this table, simply cross-index the **Knockout Roll** with the PD Total to determine the Incapacitation effects.

Incapacitation Effects Table

PD Total	Knocked Out	Stunned	Dazed	Disoriented
over 1/10 KV	00-00	01-02	03-05	06-09
over KV	00-02	03-08	09-16	17-24
over 2 x KV	00-13	14-31	32-52	53-74
over 3 x KV	00-26	27-53	54-82	83-97
200+	00-60	61-94	95-96	97-97

Knocked Out

The character is unconscious. The time he remains unconscious is taken from the **Incapacitation Time Table (8B).**

Stunned

The character is semi-conscious but incapable of action or coherent thought. Incapacitation Time is taken from **Table 8B.**

Dazed

The character drops to the ground conscious but incapable of offensive action or thought. After 1 Impulse, a dazed character may flee to cover and take non-offensive actions at 1/2 normal CA. His Incapacitation Time is taken from **Table 8B** with a -1 modifier to the 0-9 roll.

Disoriented

The character is fully functional except for Disabling Injuries and may flee or duck to save himself. He is incapable of offensive action and may not advance toward the enemy. His Incapacitation Time is taken from **Table 8B** with a -2 modifier to the 0-9 roll.

Example:

Axly has just taken 52 PD from a grenade blast. This puts his PD Total at Over 2 X KV. Axly rolls a 28 for his Knockout Roll and is Incapacitated. Referring to the Incapacitation Effect Table, he has been Stunned by the blast and drops to the ground incapable of action. Axly rolls a 2 on his 0-9 roll to determine his Incapacitation Time. Entering Table 8B, his Incapacitation Time is 15 Phases.

5.14

HERO RULES

Historical accounts of men in combat often refer to actions in which a man is seriously injured but remains in action. His wounds would clearly incapacitate a normal man and are outside the bounds of a high Knockout Value. This type of phenomenon is similar to what happens when a bear charges a hunter and can be shot repeatedly with little effect. It is tied to the adrenalin rush common to beasts of prey.

To model this phenomenon, the following rules may be used. Whenever a combatant takes wounds which push him over 3 X KV on an Impulse he is charging the enemy, or is aggressively moving to the aid of a comrade, and he makes his knockout roll with a 98-99 roll, he has moved into the realm of the adrenalin rush. For all further Impulses, his Knockout Roll is based only on the PD received that Impulse; the PD Total is ignored. This means if he is hit again on the next Impulse for 15 PD, his knockout roll would be based on a PD Total of 15. This continues until he fails another knockout roll or he exceeds his **Critical Time Period** (Section 2.9). Characters in this situation are only affected by double asterisk (**) Disabling Injuries.

These rules apply only to characters whose Knockout Value is naturally greater than or equal to 40. Note also that on the Impulse the character makes the 98-99 knockout roll to start the process he is knocked down and must get up.

Example:

Trent, whose KV is 48, leaves cover to go to the aid of Axly who has been Incapacitated in the open. As Trent gets to Axly he is hit in the leg and suffers a 200 PD double disabling injury. The 200 PD wound makes Trent's PD Total Over 3 x KV. Trent rolls a 98 for his Knockout Roll meaning he is not Incapacitated. He is however Disabled by the leg injury. Trent remains in action and drags Axly to cover. Over the time it takes him to get to cover he is hit again in the leg by a Glancing hit. This hit does another 11 PD. Because Trent has made his 98-99 Knockout Roll and the Hero Rules are in effect, his Knockout Roll due to the 11 PD injury is based only on the wounds received that Impulse, here 11 PD. Trent makes his Knockout Roll of 10 and drags Axly to cover.

Base Speed / 1A

	Encumbrance																	
STR	10	15	20	25	30	35	40	45	50	55	60	70	80	90	100	125	150	200
21	4.5	4.5	4	4	4	3.5	3.5	3.5	3.5	3.5	3	3	3	3	3	2.5	2.5	2
20	4.5	4	4	3.5	3.5	3.5	3.5	3.5	3	3	3	3	3	2.5	2.5	2.5	2.5	2
19	4	4	3.5	3.5	3	3	3	3	3	2.5	2.5	2.5	2.5	2.5	2	2	2	1.5
18	4	3.5	3.5	3	3	3	2.5	2.5	2.5	2.5	2.5	2	2	2	2	1.5	1.5	1.5
17	3.5	3	3	3	2.5	2.5	2.5	2.5	2	2	2	2	2	1.5	1.5	1.5	1.5	1
16	3.5	3	2.5	2.5	2.5	2.5	2	2	2	2	2	1.5	1.5	1.5	1.5	1	1	1
15	3	3	2.5	2.5	2	2	2	2	2	1.5	1.5	1.5	1.5	1.5	1	1	1	
14	3	2.5	2.5	2	2	2	2	1.5	1.5	1.5	1.5	1.5	1.5	1	1	1	1	
13	3	2.5	2.5	2	2	2	1.5	1.5	1.5	1.5	1.5	1.5	1	1	1	1		
12	3	2.5	2	2	2	2	1.5	1.5	1.5	1.5	1.5	1	1	1	1			
11	3	2.5	2	2	2	2	1.5	1.5	1.5	1.5	1.5	1	1	1	1			
10	3	2.5	2	2	2	2	1.5	1.5	1.5	1.5	1.5	1	1	1	1			
9	3	2.5	2	2	2	2	1.5	1.5	1.5	1.5	1.5	1	1	1	1			
8	3	2.5	2	2	2	1.5	1.5	1.5	1.5	1.5	1.5	1	1	1	1			
7	2.5	2.5	2	2	2	1.5	1.5	1.5	1.5	1.5	1.5	1	1	1	1			
6	2.5	2.5	2	2	2	1.5	1.5	1.5	1.5	1.5	1	1	1	1	1			
5	2.5	2.5	2	2	1.5	1.5	1.5	1.5	1.5	1	1	1	1	1				
4	2.5	2	2	1.5	1.5	1.5	1.5	1	1	1	1	1						
3	2.5	2	1.5	1.5	1.5	1	1	1	1	1	1							
2	2	1.5	1.5	1.5	1	1	1	1										
1	1.5	1.5	1															

Maximum Speed (MS) / 1B

	Base Speed							
AGI	1	1.5	2	2.5	3	3.5	4	4.5
21	2	4	5	7	9	10	12	13
20	2	4	5	7	8	10	11	13
19	2	4	5	7	8	10	11	12
18	2	4	5	6	8	9	11	12
17	2	3	5	6	8	9	10	12
16	2	3	5	6	8	9	10	11
15	2	3	5	6	7	9	10	11
14	2	3	4	6	7	8	9	11
13	2	3	4	6	7	8	9	10
12	2	3	4	5	7	8	9	10
11	2	3	4	5	6	7	8	9
10	2	3	4	5	6	7	8	9
9	2	3	4	5	6	7	8	9
8	2	3	4	4	5	6	7	8
7	2	3	3	4	5	6	7	8
6	2	2	3	4	5	5	6	7
5	1	2	3	4	4	5	6	6
4	1	2	3	3	4	4	5	6
3	1	2	2	3	3	4	4	5
2	1	1	2	2	3	3	4	4
1	1	1	1	2	2	2	3	3

Skill Accuracy

Skill Level	SAL
0	0
1	5
2	7
3	9
4	10
5	11
6	12
7	13
8	14
9	15
10	16
11	17
12	18
13	19
14	20
15	21
16	22
17	23
18	24
19	25
20	26

Combat Action Table / 1D

ISF = INT + SAL

	Intelligence Skill Factor (ISF)																
MS	7	9	11	13	15	17	19	21	23	25	27	29	31	33	35	37	39
1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2
2	1	1	1	2	2	2	2	2	2	3	3	3	3	3	3	4	4
3	1	2	2	2	3	3	3	3	4	4	4	4	5	5	5	5	6
4	2	2	3	3	4	4	4	5	5	5	6	6	6	7	7	7	7
5	2	3	3	4	4	5	5	6	6	7	7	7	8	8	8	9	9
6	3	3	4	5	5	6	6	7	7	8	8	9	9	10	10	11	11
7	3	4	5	5	6	7	7	8	9	9	10	10	11	11	12	12	13
8	3	4	5	6	7	8	9	9	10	11	11	12	12	13	14	14	15
9	4	5	6	7	8	9	10	10	11	12	13	13	14	15	15	16	17
10	4	6	7	8	9	10	11	12	12	13	14	15	16	16	17	18	18
11	5	6	7	9	10	11	12	13	14	15	15	16	17	18	19	19	20
12	5	7	8	10	11	12	13	14	15	16	17	18	19	20	21	21	22
13	6	7	9	11	12	13	14	15	16	17	18	19	20	21	22	23	24

Combat Actions Per Impulse / 1E

Combat Actions	Impulse 1	2	3	4
1	1			
2	1		1	
3	1		1	1
4	1	1	1	1
5	2	1	1	1
6	2	1	2	1
7	2	1	2	2
8	2	2	2	2
9	3	2	2	2
10	3	2	3	2
11	3	2	3	3
12	3	3	3	3
13	4	3	3	3
14	4	3	4	3
15	4	3	4	4
16	4	4	4	4
17	5	4	4	4
18	5	4	5	4
19	5	4	5	5
20	5	5	5	5
21	6	5	5	5

Odds of Hitting / 2A

Shot Accuracy	Target Range in Hexes 2	3	4	6	7	10	20	40	70	100	200	300
-30	00											
-28	01											
-26	02	01										
-24	03	01	01									
-22	05	02	01	00								
-20	07	04	02	01	01							
-18	12	06	04	02	01	00				MISS		
-16	18	09	06	03	02	01						
-14	27	15	09	05	04	02						
-12	39	22	15	07	06	03	01					
-11	46	27	18	09	07	04	01					
-10	53	33	22	12	09	05	01					
-9	60	39	27	15	12	06	02	00				
-8	67	46	33	18	15	07	02	01				
-7	74	53	39	22	18	09	03	01				
-6	80	60	46	27	22	12	04	01				
-5	86	67	53	33	27	15	05	02				
-4	90	74	60	39	33	18	06	02	00			
-3	94	80	67	46	39	22	07	03	01			
-2	96	86	74	53	46	27	09	04	01	00		
-1	98	90	80	60	53	33	12	05	01	01		
0		94	86	67	60	39	15	06	02	01		
1		96	90	74	67	46	18	07	02	01		
2		98	94	80	74	53	22	09	03	02		
3			96	86	80	60	27	12	04	02	00	
4			98	90	86	67	33	15	05	03	01	
5				94	90	74	39	18	06	04	01	
6				96	94	80	46	22	07	05	01	00
7				98	96	86	53	27	09	06	02	01
8					98	90	60	33	12	07	02	01
9						94	67	39	15	09	03	01
10						96	74	46	18	12	04	02
11						98	80	53	22	15	05	02
12							86	60	27	18	06	03
13							90	67	33	22	07	04
14							94	74	39	27	09	05
15							96	80	46	33	12	06
16							98	86	53	39	15	07
17								90	60	46	18	09
18			HIT					94	67	53	22	12
19								96	74	60	27	15
20								98	80	67	33	18
21									86	74	39	22
22									90	80	46	27
23									94	86	53	33
24									96	90	60	39
25									98	94	67	46
26										96	74	53
27										98	80	60
28											86	67
29											90	74
30											94	80
31											96	86
32											98	90
33												94
34												96

Automatic Fire Table / 2B
Multiple Hits

Target Range	Rate of Fire 4 - 8	9 - 15	16+
10	3	5	8
15	2	5	7
20	2	4	6
25	2	3	5
35	1	2	4
45	1	2	3
60	1	1	2
60+	1	1	1

Accuracy Modifiers / 2C

Shot Accuracy Modifier	Stance / Situation
	Shooter Stance
0	Standing
+3	Kneeling
+6	Prone
-6	Hip Firing*
-10	Shooter Moving or Ducking
-5	Target Moving, Ducking, or Appearing
	Target Size
-4	Looking Over Cover
0	Firing Over Cover
+8	Standing Exposed
+6	Kneeling Exposed
+2	Prone Exposed
	Firing Through Smoke
-4	With Ultrasonics
-14	Without Ultrasonics

Explosive Weapon Target Size Modifiers

+12	Target is a Hex
+9	Target is a Window
+13	Target is a Door

Automatic Fire - All Automatic Fire is executed with a bonus of 1 Action to the Aim Time.
Called Shots - The Shooter may choose to use the 'Firing Around Cover' Hit Location Table when firing at a target in the open. All such fire is executed with a 1 Action Aim Time penalty. This option is generally used for low Damage Class or low Penetration weapons, and increases the chance of disabling an opponent, at the cost of reduced accuracy.
*** -Hip Firing.** Establishing a Firing Stance takes 2 Actions, after which the Aim Time begins; if a Firing Stance is not established, the Hip Firing modifier is used.

Hit Location and Damage Table / 3A

WEAPON PENETRATION LINE	GLANCING ROLL (0 - 9)	
	LOW VELOCITY DAMAGE	OVER PENETRATING DAMAGE
4	0 - 2	3 - 9
3	3 - 9	
2	6 - 9	
1	9	

HIT LOCATION ROLL Firing Around Cover	HIT LOCATION ROLL In The Open	Hit Location		Physical Damage		Over Penetrating Physical Damage Weapon Damage Class (DC) 1 -2	3-5	6-8	9-10
00-02	00-00	**Head**	Glance	7	Light Wound	7	200	1,000	80,000
03-17	01-02		Forehead	2,000	Critical Wound	2,000	60,000	Dead	Dead
18-22	03-03		Eye-Nose	3,000	Critical Wound	3,000	80,000	Dead	Dead
23-38	04-05		Mouth	300	Critical Wound	300	6,000	30,000	Dead
39-56	06-08	**Arm**	Glance	1	Superficial Wound	1	*5	*11	*32
57-69	09-10		Shoulder	*21	Disabling Injury	*21	**500	**1,000	**1,000
70-76	11-11		Upper Arm - Flesh	3	Superficial Wound	3	*12	**100	**100
77-80	12-12		Upper Arm - Bone	*7	Disabling Injury	*7	*60	**100	**100
81-83	13-13		Forearm - Flesh	3	Superficial Wound	3	*12	*50	*50
84-92	14-14		Forearm - Bone	*6	Disabling Injury	*6	*60	**60	**60
93-95	15-15		Hand	3	Superficial Wound	3	*8	*15	*15
96-99	16-16		Weapon		Weapon Critical				
	17-19	**Body**	Glance	1	Superficial Wound	1	7	16	47
	20-23		Chest	51	Heavy Wound	51	100	300	2,000
	24-24		Base of Neck	300	Critical Wound	300	6,000	40,000	Dead
	25-25		Heart	4,000	Critical Wound	4,000	100,000	Dead	Dead
	26-30		Spine	300	Critical Wound	300	5,000	30,000	Dead
	31-42		Abdomen	35	Heavy Wound	35	900	5,000	30,000
	43-56		Pelvis	21	Medium Wound	21	100	500	4,000
	57-60	**Leg**	Glance	1	Superficial Wound	1	*7	*16	*47
	61-77		Thigh - Flesh	3	Superficial Wound	3	*88	**500	**600
	78-82		Thigh - Bone	*16	Disabling Injury	*16	**400	**700	**700
	83-99		Shin - Foot	*14	Disabling Injury	*14	**200	**200	**200

* - Indicates a Disabling Injury ** - Indicates a Disabling Injury to a combatant on Herculon or Anestalon (See Living Steel)

Penetration Summary / 3B

Armor Protection Factor PF	Weapon PEN Penetration Line 1	2	3	4
2	3	4	6	7
4	5	7	9	11
6	7	10	12	16
10	11	15	19	25
16	17	23	29	38
20	21	28	36	47
30	31	41	53	69
40	41	54	70	91
50	51	67	87	113
60	61	80	104	135
70	71	93	120	156
100	101	132	171	222
180	181	236	306	398
200	201	262	340	442

Weapon Summary / 3C

Weapon	Penetration (Ammo Type) FMJ	AP	Damage Class
Pistols			
9mm	2	3	3
45 ACP	2	2	3
SMG			
9mm	2	4	3
45 ACP	2	2	3
Rifles & MG			
M 16	17	23	6
M 14	20	28	8
AK 47	11	16	7
AK 74	14	19	6
M 60	20	28	8

Explosive Concussion Table / 3D

Explosive	Target Range from Burst C	0	1	2	3	5	10
Frag Grenade							
In Open	13k	700	180	50	30	12	4
Partial Cover	6h	350	90	25	15	6	2
Prone	10h	525	135	38	22	9	3
Blast Grenade							
In Open	20k	900	220	60	32	14	4
Partial Cover	10k	450	110	30	16	7	2
Prone	15k	675	165	45	24	10	3
40mm Grenade							
In Open	32h	273	80	25	13	6	1
Partial Cover	16h	136	40	12	6	3	1
Prone	24h	205	60	19	10	4	1

Range / 4A

Range	ALM
1	33
2	28
3	25
4	23
5	22
6	20
7	19
8	18
9	17
11	16
12	15
14	14
16	13
19	12
22	11
25	10
30	9
35	8
40	7
45	6
50	5
55	4
65	3
75	2
85	1
100	0
115	-1
130	-2
150	-3
170	-4
200	-5
230	-6
250	-7
300	-8
350	-9
400	-10
450	-11
500	-12
600	-13
700	-14
800	-15
950	-16
1100	-17
1250	-18
1400	-19
1650	-20
1900	-21
2150	-22
2500	-23
2850	-24
3300	-25
3800	-26
4350	-27

Situation & Stance Modifiers / 4B

ALM	
0	Standing (standing & braced +4)
+3	Kneeling (kneeling & braced +5)
+6	Prone (prone & braced +7)
+1	Using Sling for Support (Aim Time >7)
-6	Firing from the Hip
-7	Firing Rifle with One Hand
-4	Firing Pistol with One Hand
-4	Folding Stock Not Used
-3	Firing Pistol Double Action
-2	Deployed Bipod Not Braced
+3	Bipod Mounted Weapon
+5	Tripod Mounted Weapon
+11	Turret Mounted Weapon
+3	Pistol with Shoulder Stock

Visibility Modifiers / 4C

ALM	
0	Good Visibility
-2	Dusk
-4	Night Full Moon
-6	1/2 Moon
-12	No Moon
-10	Firing at Muzzle Flash
-6	Smoke, Haze, Fog
-8	Looking into a Light
-6	Optical Scope under 8 hexes
-4	Optical Scope Broken
-8	Advanced Aiming System Broken
-4	Weapon Sights Broken
-8	Firing from Teargas, No Mask
-14	Shooter Not Looking

Movement Modifiers / 4D

Speed HPI	Target Range in 2 Yard Hexes 10	20	40	70	100	200	300	400	600	800	1000	1200	1500
.5	-6	-5	-5										
1	-8	-6	-5	-5					-5				
2	-10	-8	-6	-5	-5				(No Maximum Aim)				
3		-10	-7	-6	-5	-5							
4			-8	-6	-6	-5	-5						
10			-10	-10	-8	-6	-5	-5	-5	-5			
20					-10	-8	-7	-6	-5	-5	-5	-5	
30						-10	-8	-7	-6	-6	-5	-5	-5
40							-9	-8	-7	-6	-5	-5	-5
50							-10	-9	-8	-7	-6	-6	-5
60				-10				-10	-8	--7	-6	-6	-6
70				(Maximum 2 Impulse Aim)					-9	-8	-7	-6	-6
80									-9	-8	-7	-7	-6
90									-10	-9	-8	-7	-6
100										-9	-8	-7	-7
110										-10	-9	-8	-7
120										-10	-9	-8	-7

Standard Target Size Modifiers / 4E

	Target Size	Auto Elev	Auto Width
Look Over/Around	-4	-3	-3
Fire Over/Around	0	+2	+2
Standing Exposed	+7	+14	+1
Kneeling Exposed	+6	+11	+3
Prone / Crawl	+2	+2	+2
Running	+8	+14	+1
Low Crouch	+7	+11	+2
Hands and Knees	+6	+8	+1
Low Prone	+1	0	+5
Head	-3	0	-3
Body	+5	+8	+3
Legs	+4	+8	0

Target Size Modifier Table / 4F

Size	ALM	Size	ALM	Size	ALM
.1	-15	1.6	+5	8.4	+17
.2	-10	1.8	+6	9.7	+18
.3	-7	2.1	+7	11.1	+19
.4	-5	2.4	+8	12.8	+20
.5	-3	2.7	+9	14.7	+21
.6	-2	3.2	+10	16.9	+22
.7	-1	3.6	+11	19.4	+23
.8	0	4.2	+12	22.3	+24
.9	+1	4.8	+13	25.7	+25
1.0	+2	5.5	+14	29.5	+26
1.2	+3	6.3	+15	34.0	+27
1.4	+4	7.3	+16	39.0	+28

Odds of Hitting / 4G

EAL	Single Shot	Burst Elev.
28	99	99
27	98	98
26	96	98
25	94	97
24	90	95
23	86	92
22	80	90
21	74	86
20	67	82
19	60	77
18	53	73
17	46	68
16	39	62
15	33	57
14	27	52
13	22	47
12	18	43
11	15	38
10	12	34
9	09	31
8	07	27
7	06	24
6	05	21
5	04	19
4	03	17
3	02	15
2	02	13
1	01	11
0	01	10
-1	01	09
-2	00	08
-3		07
-4		06
-5		05
-6		04
-8		03
-10		02
-15		01
-17		00
-22		

Grenade ALM / 4H

Hex TS ALM = +12

Throw Aim AC	Aim Time Mod
1	-26
2	-18
3	-14
4	-12
6	-11
8	-10

Automatic Fire and Shrapnel Hit Chance / 5A

Arc of Fire	Index	Rate Of Fire (ROF) 3	4	5	6	7	8	9	10	12	18	36	54	72	144	Pellet Hit Chance Shrapnel Hit Chance
	31	*3	*4	*5	*6	*7	*8	*9	*10	*12	*18	*36	*54	*72	*144	*58
	30	*3	*4	*5	*5	*6	*7	*8	*9	*11	*16	*33	*49	*65	*131	*44
	29	*2	*3	*4	*5	*6	*6	*7	*8	*9	*14	*28	*43	*57	*114	*33
.2	28	*2	*3	*3	*4	*5	*5	*6	*7	*8	*12	*25	*37	*50	*99	*25
	27	*2	*2	*3	*4	*4	*5	*5	*6	*7	*11	*22	*32	*43	*86	*19
	26	*2	*2	*3	*3	*4	*4	*5	*5	*6	*9	*19	*28	*37	*75	*14
.3	25	*1	*2	*2	*3	*3	*4	*4	*5	*5	*8	*16	*24	*33	*65	*11
	24	*1	*2	*2	*2	*3	*3	*4	*4	*5	*7	*14	*21	*28	*57	*8
.4	23	*1	*1	*2	*2	*2	*3	*3	*3	*4	*6	*12	*18	*25	*49	*6
	22	89	*1	*1	*2	*2	*2	*3	*3	*4	*5	*11	*16	*21	*43	*5
.5	21	77	*1	*1	*2	*2	*2	*2	*3	*3	*5	*9	*14	*19	*37	*4
.6	20	67	89	*1	*1	*2	*2	*2	*2	*3	*4	*8	*12	*16	*32	*3
.7	19	58	78	97	*1	*1	*2	*2	*2	*2	*4	*7	*11	*14	*28	*2
.8	18	51	67	84	*1	*1	*1	*2	*2	*2	*3	*6	*9	*12	*24	*2
.9	17	44	58	73	88	*1	*1	*1	*1	*2	*3	*5	*8	*11	*21	*1
1	16	38	51	64	77	89	*1	*1	*1	*2	*2	*5	*7	*9	*19	87
	15	33	44	55	66	78	89	*1	*1	*1	*2	*4	*6	*8	*16	65
	14	28	38	48	58	67	77	87	97	*1	*2	*3	*5	*7	*14	49
	13	25	33	41	50	58	67	75	84	*1	*2	*3	*5	*6	*12	37
	12	21	29	36	43	51	58	65	73	88	*1	*3	*4	*5	*11	28
2	11	18	25	31	38	44	50	57	63	76	*1	*2	*3	*5	*9	21
	10	16	21	27	33	38	44	49	55	66	*1	*2	*3	*4	*8	15
	9	14	18	23	28	33	38	43	48	57	86	*2	*3	*3	*7	11
3	8	12	16	20	24	29	33	37	41	50	75	*2	*2	*3	*6	8
	7	10	14	17	21	25	28	32	36	43	65	*1	*2	*3	*5	6
4	6	9	12	15	18	21	25	28	31	37	56	*1	*2	*2	*5	4
	5	7	10	13	16	18	21	24	27	32	49	98	*1	*2	*4	3
5	4	6	9	11	13	16	18	21	23	28	42	85	*1	*2	*3	2
6	3	5	7	10	12	14	16	18	20	24	37	74	*1	*2	*3	1
7	2	5	6	8	10	12	14	15	17	21	32	64	97	*1	*3	1
8	1	4	5	7	9	10	12	13	15	18	28	56	84	*1	*2	0
10	0	3	5	6	7	9	10	11	13	16	24	48	73	98	*2	0
11	-1	3	4	5	6	7	9	10	11	13	21	42	64	85	*2	
13	-2	2	3	4	5	6	7	8	9	12	18	36	55	74	*1	
15	-3	2	3	4	4	5	6	7	8	10	15	32	48	64	*1	
17	-4	1	2	3	4	5	5	6	7	8	13	27	41	56	*1	
20	-5	1	2	2	3	4	5	5	6	7	11	24	36	48	97	
23	-6	1	1	2	3	3	4	4	5	6	10	20	31	42	85	
26	-7	1	1	2	2	3	3	4	4	5	8	18	27	36	73	
30	-8	0	1	1	2	2	3	3	3	4	7	15	23	31	64	
35	-9	0	1	1	1	2	2	3	3	4	6	13	20	27	55	
40	-10	0	0	1	1	1	2	2	2	3	5	11	17	23	48	
46	-11	0	0	0	1	1	1	2	2	3	4	10	15	20	42	
53	-12	0	0	0	1	1	1	1	2	2	4	8	13	17	37	
61	-13	0	0	0	0	1	1	1	1	2	3	7	11	15	31	
70	-14	0	0	0	0	0	1	1	1	1	2	6	9	13	27	
81	-15		0	0	0	0	0	1	1	1	2	5	8	11	23	
93	-16		0	0	0	0	0	0	0	1	2	4	7	10	20	
107	-17		0	0	0	0	0	0	0	1	1	4	6	8	17	
123	-18			0	0	0	0	0	0	0	1	3	5	7	15	
142	-19				0	0	0	0	0	0	1	2	4	6	13	
163	-20				0	0	0	0	0	0	1	2	4	5	11	
188	-21					0	0	0	0	0	0	2	3	4	10	

Blast Modifiers / 5B

BM	Target
10	Underwater
5	In Small Room (10')
3	In Open Trench
1	In the Open
.75	Prone
.5	Under Partial Cover
.25	In Combat Suit
.01	In Power Armor
0	Behind Solid Cover

Shot Scatter / 5C

Difference in SA	Scatter (hexes)
1-7	1
8-11	2
12-13	3
14-15	4
16-17	5
18-19	6
20-21	8
22	10
23	12
24	14
25	16
26	19
27	21
28	25

Body Hit Locations / 5D

Roll	
00-03	Shoulder Glance
04-05	Shoulder Socket
*06-07	Shoulder
*08-13	Torso Glance
*14-17	Base of Neck
*18-19	Lung - Rib
*20-23	Lung
*24-25	Heart
*26-27	Liver - Rib
*28-29	Liver
*30-31	Stomach - Rib
*32-33	Stomch
*34-35	Stomach - Kidney
*36-37	Stomach - Spleen
*38-41	Liver - Kidney
*42-46	Liver - Spine
*47-54	Intestines
*55-60	Spine
61-82	Pelvis
83-99	Hip Socket

* Covered by Body Armor

Hit Location and Damage Table / 6A

Weapon Damage Class (DC), Effective Penetration (EPEN), and Physical Damage (PD)

H = 100 K = 1,000 T = 10,000 X = 100,000 M = 1,000,000

		DC = 1 EPEN							DC = 2 EPEN							DC = 3 EPEN							DC = 4 EPEN					
Fire Open	Hit Location	.5	1	1.5	2	3	5	10	1	1.5	2	2.5	3	5	10	1	1.5	2	2.5	3	5	10	1	2	2.5	3	5	10
00-02 00-00	Head Glance	1	5	7	7	7	7	7	16	24	24	24	24	24	24	57	83	83	83	83	83	83	1H	2H	2H	2H	2H	2H
03-16 01-02	Forehead	11	1K	2K	2K	2K	2K	2K	4K	5K	6K	8K	8K	8K	8K	1T	2T	2T	3T	3T	3T	3T	3T	5T	6T	6T	6T	6T
17-21 03-03	Eye - Nose	4	1K	2K	3K	3K	3K	3K	4K	5K	1T	1T	1T	1T	1T	1T	2T	4T	4T	4T	4T	4T	3T	8T	8T	8T	8T	8T
22-32 04-05	Mouth	1	3	3	45	2H	2H	2H	11	12	2H	8H	8H	8H	8H	37	40	5H	3K	3K	3K	3K	77	1K	5T	6K	6K	6K
33-34 06-06	Neck Flesh	1	1	1	1	1	1	1	5	5	5	5	5	5	5	11	11	11	11	11	11	11	19	19	19	19	19	19
35-36 07-07	Neck Spine	3	4	5	2H	2H	2H	2H	15	17	7H	8H	8H	8H	8H	54	60	3K	3K	3K	3K	3K	1H	5K	6K	6K	6K	6K
37-48 08-08	Shoulder Glance	1	1	1	1	1	1	1	2	2	2	2	2	2	2	3	3	3	3	3	3	3	5	5	5	5	5	5
49-60 09-09	Shoulder	1	2	2	4	4	4	4	7	8	14	14	14	14	14	23	27	49	49	49	49	49	48	1H	1H	1H	1H	1H
61-65 10-10	Arm Glance	1	1	1	1	1	1	1	2	2	2	2	2	2	2	3	3	3	3	3	3	3	5	5	5	5	5	5
66-71 11-11	Arm Flesh	1	1	1	1	1	1	1	3	3	3	3	3	3	3	9	9	9	9	9	9	9	18	18	18	18	18	18
72-74 12-12	Arm Bone	1	1	1	1	1	7	7	1	2	3	4	5	23	23	5	7	9	13	16	81	81	10	20	28	34	1H	1H
75-78 13-13	Elbow	1	1	2	3	3	3	3	4	7	9	10	10	10	10	14	25	30	34	34	34	34	29	62	71	71	71	71
79-81 14-14	Forearm Flesh	1	1	1	1	1	1	1	2	2	2	2	2	2	2	6	6	6	6	6	6	6	12	12	12	12	12	12
82-87 15-15	Forearm Bone	1	1	1	1	6	6	6	1	1	2	4	20	20	20	4	6	8	15	60	60	60	8	17	38	60	60	60
88-93 16-16	Hand	1	1	1	1	1	1	1	1	1	1	1	1	1	1	4	4	4	4	4	4	4	8	8	8	8	8	8
94-99 17-17	Weapon Critical																											
18-19	Torso Glance	1	1	1	1	1	1	1	3	3	3	3	3	3	3	5	5	5	5	5	5	5	7	7	7	7	7	7
20-21	Base of Neck	1	3	6	7	2H	3H	3H	12	21	24	5H	8H	8H	9H	40	74	83	2K	3K	3K	3K	83	2H	3K	6K	6K	6K
22-22	Lung - Rib	1	1	64	71	79	79	79	1	79	87	98	98	98	98	2	1H	1H	1H	1H	1H	1H	2	2H	2H	2H	2H	2H
23-24	Lung	37	40	51	51	51	51	51	50	62	62	62	62	62	62	71	89	89	89	89	89	89	96	1H	1H	1H	1H	1H
25-25	Heart	1	2K	3K	3K	4K	4K	4K	8K	1T	1T	1T	1T	1T	1T	3T	3T	3T	4T	5T	5T	5T	6T	7T	9T	1X	1X	1X
26-26	Liver - Rib	1	6	31	42	49	49	49	21	1H	1H	2H	2H	2H	2H	75	4H	5H	6H	6H	6H	6H	2H	1K	1K	1K	1K	1K
27-27	Liver	4	27	28	35	35	35	35	94	98	1H	1H	1H	1H	1H	3H	3H	4H	4H	4H	4H	4H	7H	9H	9H	9H	9H	9H
28-28	Stomach - Rib	1	4	19	27	38	38	38	6	27	37	45	53	53	53	11	46	63	89	89	89	89	16	95	1H	1H	1H	1H
29-29	Stomach	3	17	19	28	28	28	28	24	27	40	40	40	40	40	41	45	67	67	67	67	67	62	1H	1H	1H	1H	1H
30-30	Stomach-Spleen	1	2	25	41	50	50	50	6	64	1H	1H	1H	1H	1H	19	2H	3H	4H	4H	4H	4H	37	6H	8H	8H	8H	8H
31-31	Stomach-Kidney	2	47	49	58	58	58	58	1H	1H	2H	2H	2H	2H	2H	4H	4H	5H	5H	5H	5H	5H	7H	9H	9H	9H	9H	9H
32-33	Liver - Kidney	4	44	45	53	53	53	53	2H	2H	2H	2H	2H	2H	2H	5H	6H	6H	6H	6H	6H	6H	1K	1K	1K	1K	1K	1K
34-35	Liver - Spine	4	12	12	2H	3H	3H	3H	41	43	7H	9H	9H	1K	1K	1H	2H	2K	3K	3K	3K	3K	3H	5K	7K	7K	7K	7K
36-39	Intestines	3	17	21	21	21	21	21	23	28	28	28	28	28	28	37	45	45	45	45	45	45	53	66	66	66	66	66
40-42	Spine	1	3	3	2H	2H	3H	3H	11	12	6H	8H	8H	8H	8H	35	39	2K	3K	3K	3K	3K	71	4K	5K	5K	5K	5K
43-56	Pelvis	3	10	11	19	21	21	21	18	19	32	35	35	35	35	37	40	67	73	73	73	73	63	1H	1H	1H	1H	1H
57-61	Leg Glance	1	1	1	1	1	1	1	3	3	3	3	3	3	3	5	5	5	5	5	5	5	7	7	7	7	7	7
62-75	Thigh Flesh	1	2	3	3	3	3	3	6	12	12	12	12	12	12	22	42	42	42	42	42	42	46	88	88	88	88	88
76-79	Thigh Bone	1	1	1	1	1	5	16	3	3	4	4	5	16	57	10	10	14	15	18	55	2H	21	29	31	38	1H	4H
80-83	Knee	1	1	2	2	3	4	4	3	7	9	10	12	13	13	12	25	30	35	41	47	47	24	62	73	86	97	97
84-88	Shin Flesh	1	1	1	1	1	1	1	3	3	3	3	3	3	3	9	9	9	9	9	9	9	18	18	18	18	18	18
89-93	Shin Bone	1	1	1	1	1	2	14	1	1	1	1	2	8	47	2	2	4	4	7	29	2H	4	9	9	14	60	2H
94-99	Ankle - Foot	1	1	1	1	1	1	1	1	1	2	3	3	3	3	3	4	7	9	12	12	12	6	14	20	25	25	25

Key / 6B

Fire	Hit Location roll used for a target firing over or around Blocking Cover.
Open	Hit Location roll used for a target in the Open.
Looking	For a target Looking over or around Blocking Cover, use the Fire column and a 00 - 22 roll.
DC	Damage Class measures weapon wound potential. The greater the DC, the greater the lethality.
EPEN	Effective Penetration = Weapon PEN - target's armor PF. If EPEN is less than the armor PF, the effective DC = 1.

Disabling Injuries / 6C

The shaded portions of the table indicate Disabling Injuries.

The Physical Damage (PD) determines overall chance of survival. It does not, however, account for shock due to broken bones. This shock may incapacitate, but does not decrease survival odds. To account for broken bones, the following Shock Points (SP) are added to the PD of wounds in the shaded portions of the table when making the Knockout Roll. These Shock Points are **not** added to the PD Total.

	SP		SP
Neck	+400	Spine	+400
Shoulder	+10	Thigh	+80
Arm	+20	Knee - Shin	+50
Hand	+10	Ankle - Foot	+20

Hit Location and Damage Table / 6A

Weapon Damage Class (DC), Effective Penetration (EPEN), and Physical Damage (PD)

H = 100 K = 1,000 T = 10,000 X = 100,000 M = 1,000,000

Fire Open	Hit Location	DC = 5 EPEN 1	2	3	5	10	DC = 6 EPEN 1	2	3	5	10	DC = 7 EPEN 1	2	3	5	10	DC = 8 EPEN 1	3	5	10	DC = 9 EPEN 1	3	5	10	DC = 10 EPEN 1	3	5	10
00-02	00-00 Head Glance	2H	3H	3H	3H	3H	3H	4H	4H	4H	4H	7H	1K	1K	1K	1K	1K	2K	2K	2K	3K	4K	4K	4K	6K	8K	8K	8K
03-16	01-02 Forehead	5T	8T	9T	9T	9T	7T	1X	1X	1X	1X	2X	3X	3X	3X	3X	3X	5X	6X	6X	5X	8X	1M	1M	7X	1M	1M	1M
17-21	03-03 Eye - Nose	5T	1X	1X	1X	1X	8T	2X	2X	2X	2X	2X	4X	4X	4X	4X	3X	8X	8X	8X	6X	1M	1M	1M	1M	2M	2M	2M
22-32	04-05 Mouth	1H	2K	9K	1T	1T	2H	3K	1T	1T	1T	4H	7K	3T	3T	3T	8H	1T	6T	6T	1K	2T	1X	1X	2K	4T	2X	2X
33-34	06-06 Neck Flesh	29	29	29	29	29	39	39	39	39	39	79	79	79	79	79	1H	1H	1H	1H	3H	3H	3H	3H	6H	6H	6H	6H
35-36	07-07 Neck Spine	2H	9K	1T	1T	1T	3H	1T	1T	1T	1T	7H	3T	3T	3T	3T	1K	5T	6T	6T	2K	1X	1X	1X	3K	2X	2X	2X
37-48	08-08 Shoulder Glance	6	6	6	6	6	7	7	7	7	7	11	11	11	11	11	15	15	15	15	22	22	22	22	32	32	32	32
49-60	09-09 Shoulder	80	2H	2H	2H	2H	1H	3H	3H	3H	3H	3H	6H	6H	6H	6H	4H	9H	9H	9H	8H	2K	2K	2K	2K	3K	3K	3K
61-65	10-10 Arm Glance	6	6	6	6	6	7	7	7	7	7	11	11	11	11	11	15	15	15	15	22	22	22	22	32	32	32	32
66-71	11-11 Arm Flesh	31	31	31	31	31	46	46	46	46	46	1H	1H	1H	1H	1H	1H	1H	1H	1H	1H	1H	1H	1H	1H	1H	1H	1H
72-74	12-12 Arm Bone	17	33	57	1H	1H	26	49	85	1H	1H	60	1H	1H	1H	1H	1H	1H	1H	1H	1H	1H	1H	1H	1H	1H	1H	1H
75-78	13-13 Elbow	48	1H	1H	1H	1H	72	1H	1H	1H	1H	1H	1H	1H	1H	1H	1H	1H	1H	1H	1H	1H	1H	1H	1H	1H	1H	1H
79-81	14-14 Forearm Flesh	20	20	20	20	20	31	31	31	31	31	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
82-87	15-15 Forearm Bone	13	29	60	60	60	20	43	60	60	60	47	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
88-93	16-16 Hand	14	14	14	14	14	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
94-99	17-17 Weapon Critical																											
	18-19 Torso Glance	9	9	9	9	9	11	11	11	11	11	16	16	16	16	16	22	22	22	22	32	32	32	32	47	47	47	47
	20-21 Base of Neck	1H	3H	1T	1T	1T	2H	4H	2T	2T	2T	5H	1K	4T	4T	4T	9H	2K	6T	7T	2K	4K	1X	1X	4K	8K	3X	3X
	22-22 Lung - Rib	3	2H	2H	2H	2H	3	3H	3H	3H	3H	6	5H	5H	5H	5H	9	7H	8H	8H	17	1K	1K	1K	32	3K	3K	3K
	23-24 Lung	1H	2H	2H	2H	2H	2H	2H	2H	2H	2H	3H	3H	3H	3H	3H	4H	5H	5H	5H	7H	9H	9H	9H	1K	2K	2K	2K
	25-25 Heart	1X	1X	2X	2X	2X	2X	2X	3X	3X	3X	4X	4X	6X	6X	6X	6X	7X	1M	1M	1M	2M	2M	2M	3M	3M	5M	5M
	26-26 Liver - Rib	3H	2K	2K	2K	2K	4H	3K	3K	3K	3K	9H	6K	7K	7K	7K	2K	1T	1T	1T	3K	2T	3T	3T	6K	4T	5T	5T
	27-27 Liver	1K	1K	1K	1K	1K	2K	2K	2K	2K	2K	4K	5K	5K	5K	5K	7K	9K	9K	9K	1T	2T	2T	2T	3T	3T	3T	3T
	28-28 Stomach - Rib	22	1H	2H	2H	2H	29	2H	2H	2H	2H	56	3H	5H	5H	5H	90	5H	8H	8H	2H	1K	1K	1K	3H	2K	2K	2K
	29-29 Stomach	87	1H	1H	1H	1H	1H	2H	2H	2H	2H	2H	4H	4H	4H	4H	4H	6H	6H	6H	7H	1K	1K	1K	1K	2K	2K	2K
	30-30 Stomach-Spleen	60	1K	1K	1K	1K	88	2K	2K	2K	2K	2H	4K	4K	4K	4K	4H	6K	8K	8K	8H	1T	2T	2T	2K	3T	3T	3T
	31-31 Stomach-Kidney	1K	1K	1K	1K	1K	2K	2K	2K	2K	2K	4K	5K	5K	5K	5K	7K	9K	9K	9K	2T	2T	2T	2T	3T	4T	4T	4T
	32-33 Liver - Kidney	2K	2K	2K	2K	2K	3K	3K	3K	3K	3K	6K	8K	8K	8K	8K	1T	1T	1T	1T	3T	3T	3T	3T	5T	7T	7T	7T
	34-35 Liver - Spine	5H	9K	1T	1T	1T	7H	1T	2T	2T	2T	2K	3T	4T	4T	4T	3K	5T	7T	7T	7K	1X	2X	2X	1T	2X	3X	3X
	36-39 Intestines	73	89	89	89	89	95	1H	1H	1H	1H	2H	2H	2H	2H	2H	3H	3H	3H	3H	5H	7H	7H	7H	1K	1K	1K	1K
	40-42 Spine	1H	7K	9K	9K	9K	2H	1T	1T	1T	1T	4H	2T	3T	3T	3T	7H	4T	5T	5T	2K	9T	1X	1X	3K	2X	2X	2X
	43-56 Pelvis	94	2H	2H	2H	2H	1H	2H	3H	3H	3H	3H	5H	5H	5H	5H	5H	8H	9H	9H	1K	2K	2K	2K	2K	4K	4K	4K
	57-61 Leg Glance	9	9	9	9	9	11	11	11	11	11	16	16	16	16	16	22	22	22	22	32	32	32	32	47	47	47	47
	62-75 Thigh Flesh	78	1H	1H	1H	1H	1H	2H	2H	2H	2H	3H	5H	5H	5H	5H	5H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H
	76-79 Thigh Bone	35	48	63	2H	7H	53	72	95	3H	7H	1H	2H	2H	7H	7H	2H	3H	4H	7H	5H	7H	7H	7H	7H	7H	7H	7H
	80-83 Knee	40	1H	1H	2H	2H	60	2H	2H	2H	2H	1H	2H	2H	2H	2H	2H	2H	2H	2H	2H	2H	2H	2H	2H	2H	2H	2H
	84-88 Shin Flesh	31	31	31	31	31	46	46	46	46	46	1H	1H	1H	1H	1H	1H	1H	1H	1H	1H	1H	1H	1H	1H	1H	1H	1H
	89-93 Shin Bone	7	14	24	1H	2H	11	22	35	2H	2H	26	50	82	2H	2H	45	89	1H	2H	1H	2H	2H	2H	2H	2H	2H	2H
	94-99 Ankle - Foot	9	24	42	42	42	14	36	63	63	63	33	84	95	95	95	58	95	95	95	95	95	95	95	95	95	95	95

Effective Armor Protection Factor (EPF) / 6D

Armor PF	Glancing Roll (0 - 9) 0	1	2	3	4	5	6	7	8	9
2	2	2	3	3	3	3	4	4	4	5
4	4	5	5	6	6	7	7	8	9	10
6	7	7	8	9	9	10	11	12	13	15
10	11	12	13	14	16	17	19	20	22	24
16	17	19	21	23	25	27	30	32	35	39
20	22	24	26	28	31	34	37	41	44	48
30	33	36	39	43	47	51	56	61	66	73
40	44	48	52	57	62	68	74	81	89	97
50	55	60	65	71	78	85	93	101	111	121

Armor PF	Glancing Roll (0 - 9) 0	1	2	3	4	5	6	7	8	9
60	66	72	78	85	93	102	111	122	133	145
70	76	84	91	100	109	119	130	142	155	169
80	87	95	104	114	124	136	148	162	177	194
90	98	107	117	128	140	153	167	182	199	218
100	109	119	130	142	156	170	186	203	221	242
120	131	143	156	171	187	204	223	243	266	290
140	153	167	182	199	218	238	260	284	310	339
180	197	215	235	256	280	306	334	365	399	435
200	218	239	261	285	311	340	371	405	443	484

Movement Table / 7A

Base Movement Costs

1	Forward
3	Backward
4	Oblique
5	Sideways

Movement Modifiers

Stance

+0	Standing / Running
+1	Low Crouch
+2	Hands and Knees
+3	Belly Crawl

Stairs - Hills

+1	Across Slope, Downhill, On Stairs
+2	Uphill

Brush or Rubble

+1	Light
+2	Medium
+3	Dense

Injuries

+2	Disabling Injury above Waist
+12	Disabling Injury below Waist

Water

+1	Depth 1 foot
+2	Depth 2 feet
+4	Depth 3 feet
+10	Depth 4 feet

Miscellaneous

+5	Concertina Wire
+1	Dry Sand on Surface
+2	Icy Surface
+3	In Scuba Flippers
+2	In Snow Shoes

Action Time Table / 7B

Actions

2	Assume a Firing Stance - Over or Around Cover
1	Assume a Hip Firing Stance - Over or Around Cover
1	Look Over or Around Cover
1	Duck from a Firing Stance or from Looking
1	Brace a Weapon
1	60 - 120 Degree Facing Change
2	60 Degree Facing Change in Firing Stance
1	Go from Standing to Kneeling
2	Go from Standing to Prone
1	Go from Kneeling to Prone
2	Go from Prone to Kneeling
3	Go from Prone to Standing
2	Kick Open a Door
3	Open a Door
6	Open a Window with Two Hands
6	Break and Clear Glass from a Window
6	Climb through a Window
6	Get Out of a Trench or Foxhole

Reloading

1	Cock a Revolver or Pistol
4	Take a Bullet or Magazine from a Pouch
6	Replace a Bullet or Magazine into a Pouch
8	Link a Belt of Ammunition
4	Load a Round into a Magazine
7	Load a Charging Strip into a Magazine
4	Open a Hinged Type Ammunition Can
4	Open a Paper Box of Ammunition
RT	Unload a Weapon RT = weapon's Reload Time

Weapon Functions

1	Safety or Fire Select Switch
4	Pick Up or Set Down a Weapon
3	Grab an Unheld Slung Weapon (slung across front of chest)
	Draw a Pistol from: (+2 Action Counts for Concealed Holsters)
3	Shoulder Holster
3	Belt Holster
2	Police Holster
2	Old West Fast Draw Holster
1	Modern Fast Draw Holster
2	Throw a Small Object
2	Pick up a Grenade or Small Object

Equipment

In	Out	
16	7	Backpack with Quick Release
6	4	Bandolier or Belt
3	2	Bayonet or Knife from Scabbard
3	3	Bayonet to Weapon
5	8	Bipod
24	13	Body Armor (external vest type)
18	10	Climbing Harness
6	4	Folding Stock
12	5	Gas Mask
12	4	Optical Scope with Quick Release
20	8	Parachute with Quick Release
8	6	Pistol Shoulder Stock
9	9	Silencer
3	2	Slung Weapon over Shoulder
12	8	Tripod and Weapon

Cover Protection Factors (PF) / 7C

Doors

2	Automobile
4	Elevator
2	Exterior Wood
5	Heavy Wood Gate
.3	Interior Wood
6	Metal Fire

Walls

	Brick
370	6 inch
980	12 inch
4	Cinder Block
25	Earth Filled
460	Concrete Filled
	Wood Frame
.3	Interior Plaster
1	Exterior Stucco
22	Log Timber

Roofs and Floors

2	Asphalt - Shingle Roof
4	Tile - Slate Roof
1	House Floor
260	High Rise Floor

Miscellaneous

1	Common Furniture
	55 gallon Drum
8	Water Filled
85	Earth Filled
3200	Concrete Filled
18	Horse
20	Railroad Tie
30	Telephone Pole
	Woods (per 10 hexes)
1	Light
4	Medium
17	Heavy

	Thickness in Inches						
	.12	.25	.5	.75	1	2	4
Aluminum	1	4	9	16	24	64	170
Bullet Proof Glass	.5	1	3	6	8	22	58
Fiberglass	.4	1	3	5	7	18	181
Steel	6	16	42	75	110	300	780
Steel Armor Plate	11	30	79	140	210	550	1500
Titanium Armor Plate	5	13	35	62	93	250	650
Wood	.3	.5	1	1	2	4	7

	Thickness in Inches						
	6	8	10	12	16	24	36
Concrete	450	680	930	1200	1800	3200	5600
Earth (hand packed)	20	27	34	40	54	80	120
Earth (hard ground)	24	32	41	48	65	96	140
Rock	900	1300	1800	2400	3600	6400	11000
Sand (loose)	11	15	19	23	30	45	68
Water	1	2	2	2	3	5	7
Wood	11	15	18	22	29	44	66

Medical Aid and Recovery Table / 8A

Damage Total	Healing Time	No Aid		First Aid		Aid Station		Field Hospital		Trauma Center Recovery Roll Trauma Center Tech Level						
DT	HT	CTP	RR	CTP	RR	CTP	RR	CTP	RR	CTP	13	14	15	16	17	18
5	17	79h	94	25d	96											
10	25	75h	89	25d	92	RR = 99										
15	30	72h	85	25d	89											
20	35	68h	81	25d	86	25d	96	RR = 99								
25	38	65h	77	25d	82	25d	95									
30	41	62h	73	25d	79	25d	94									
35	43	59h	69	25d	76	25d	93	25d	97							
40	44	56h	66	25d	73	25d	92	25d	96							
45	46	53h	63	25d	70	25d	91	25d	96			RR = 99				
50	47	51h	60	25d	68	25d	90	25d	95							
60	48	46h	54	25d	63	25d	89	25d	94							
70	50	41h	49	25d	58	25d	87	25d	94							
80	51	37h	44	25d	54	25d	85	25d	92	25d	97					
90	52	34h	40	25d	50	25d	83	25d	91	25d	96					
100	53	31h	36	25d	46	25d	82	25d	90	25d	96	97				
200	61	11h	12	23d	21	25d	67	25d	82	25d	92	94	96			
300	65	4h	04	19d	10	25d	55	25d	74	25d	89	91	94	96		
400	68	93m	01	16d	04	25d	45	25d	67	25d	85	88	92	95	97	
500	70	35m	00	13d	02	25d	37	25d	61	25d	82	85	90	94	96	
600	72	13m	00	10d	01	25d	30	25d	55	25d	79	82	88	93	95	
700	73	6m	00	8d	00	25d	25	25d	50	25d	76	80	86	92	94	
800	75	5m	00	7d	00	25d	20	25d	45	25d	73	77	84	91	94	97
900	76	4m		6d	00	25d	16	25d	41	25d	70	75	82	90	93	96
1000	77	90p		5d		25d	13	25d	37	25d	67	73	80	89	92	96
2000	84	85p		15h		6d	02	25d	13	25d	45	53	64	79	85	92
3000	88	81p		2h		21h	00	5d	05	18d	30	38	52	70	79	89
4000	91	76p		22m		4h	00	18h	02	72h	20	28	41	62	73	85
5000	93	71p		6m		63m	00	5h	01	21h	13	20	33	55	67	82
6000	95	67p		4m		36m	00	3h	00	12h	09	15	27	49	62	79
7000	96	62p		87p		29m		2h	00	10h	06	11	21	43	57	76
8000	98	57p		75p		25m		2h	00	8h	04	08	17	39	53	73
9000	99	52p		67p		22m		2h		7h	03	06	14	34	49	70
12000	102	38p		57p		19m		95m		6h	01	03	07	21	39	62
16000	105	25p		44p		15m		75m		5h	00	01	03	13	28	53
20000	107	1p		30p		10m		50m		3h		00	01	09	20	45
40000	114	1p		15p		5m		25m		2h			00	01	04	20
60000	118	1p		10p		3m		17m		68m				00	01	09
80000	121	1p		8p		75p		13m		52m					00	04
100000	123	1p		6p		60p		10m		40m						02

Incapacitation Time Table / 8B

PD Total	Random Roll 0	1-2	3-5	6-7	8	9
0	1p	1p	2p	4p	6p	11p
50	4p	15p	29p	47p	73p	4m
100	25p	3m	5m	9m	14m	25m
200	3m	11m	21m	23m	53m	96m
300	10m	33m	63m	2h	3h	5h
450	25m	85m	3h	4h	7h	12h
600	50m	3h	5h	9h	14h	25h
750	2h	6h	11h	19h	29h	53h
1000	5h	17h	32h	53h	82h	6d

Key

CTP = Critical Time Period; the maximum length of time between the time of the injury and the Recovery Roll (RR).

DT = Damage Total. Total Physical Damage (PD) taken times 10, divided by the character's Health Characteristic (HLT).

HT = Healing Time in days.

RR = Recovery Roll; percent chance of surviving.

d = Days

h = Hours

m = Minutes

p = Phases (2 seconds)

Date	Tech Level
1831-1889	1st Aid
1890-1918	Aid Stn
1919-1945	Fld Hsp
1946-2000	13
2001-2030	14
2031-2060	15
2061-2120	16
2121-2250	17
2251-2345	18

STATUS SHEET (BASIC GAME)

Name:

Characteristics

Strength	STR
Intelligence	INT
Will	WIL
Health	HLT
Agility	AGI
Base Speed	
Maximum Speed	MS
Gun Combat Skill Level	
Skill Accuracy Level	SAL
INT Skill Factor	ISF
Combat Actions	CA

Combat Actions per Impulse

	Impulse			
	1	2	3	4
Actions				

Knockout Value KV

Body Armor	Protection Factor	Weight
Helm:		
Visor:		
Body:		
Limbs:		

Equipment

Encumbrance =

Physical Status

PD Total:

Disabling Injuries:

Ammunition

Weapon Data:		Aim Time	Aim Time Mod	Shot Accuracy
Reload Time	RT	1		
Rate of Fire	ROF	2		
		3		
Ammunition Capacity	Cap	4		
Ammunition Weight	AW	5		
		6		
Penetration	PEN	8		
Damage Class	DC	10		
		12		

Knockout Table

PD Total	Odds
Under KV /10	00
Over KV / 10	10
Over KV	25
Over 2 X KV	75
Over 3 X KV	98

ACTION TIME TABLE

CA	Action
1	Running Stance: Move Forward 1 Hex
3	Move Backward 1 Hex
2	Low Crouch: Move Forward 1 Hex
4	Move Backward 1 Hex
3	Hand and Knees: Move Forward 1 Hex
5	Move Backward 1 Hex
+1	Moving on Stairs or Down / Across Hill
+2	Moving Uphill or Through Rubble
+4	Moving Through 3 Feet of Water

CA	Action
0	Change Facing 1 Hexside While Moving, per Hex
1	Change Facing by 1 or 2 Hexsides While Immobile
2	Assume a Firing Stance
1	Look Over / Around Cover
2	Throw a Grenade
3	Open a Door
6	Open a Window (2 Hands)

CA	Action
8	Reload a Weapon
4	Load a Magazine, per Round
4	Pick Up or Set Down a Weapon
8	Deploy Bipod for Weapon
6	Climb Through a Window
3	Draw Pistol - Shoulder Holster
2	Draw Pistol - Hip Holster
2	Draw a Hand-to-Hand Weapon
7	Get out of Military Backpack

STATUS SHEET (ADVANCED GAME)

Name:

Characteristics

Strength	STR
Intelligence	INT
Will	WIL
Health	HLT
Agility	AGI
Base Speed	
Maximum Speed	MS
Gun Combat Skill	
Skill Accuracy Level	SAL
INT Skill Factor	ISF
Combat Actions	CA

Combat Actions per Impulse

	Impulse			
	1	2	3	4
Actions				

Knockout Value KV

Body Armor	Protection Factor	Weight
Helm:		
Visor:		
Body:		
Limbs:		

Equipment

Encumbrance =

Physical Status

PD Total:

Disabling Injuries:

Ammunition:

Knockout Table

PD Total	Odds
Under KV / 10	00
Over KV / 10	10
Over KV	25
Over 2 X KV	75
Over 3 X KV	98

Weapon	Physical Data	Aim Time AC	Aim Time Mod	Shot Accuracy	Ballistic Data	Target Range in 2 yard hexes 10	20	40	70	100	200	300	400
	L	1			FMJ PEN								
	W	2			DC								
		3											
	RT	4			JHP PEN								
	ROF	5			DC								
		6											
	Cap	7			AP PEN								
	AW	8			DC								
		10											
	KD	12			MA								
	SAB												

ACTION TIME TABLE

CA	Action	
1	Running Stance:	Move Forward 1 Hex
3		Move Backward 1 Hex
2	Low Crouch:	Move Forward 1 Hex
4		Move Backward 1 Hex
+1	Moving on Stairs, or Down / Across Hill	
+2	Moving Uphill or Through Rubble	

CA	Action
0	Change Facing 1 Hexside While Moving, per Hex
1	Change Facing by 1 or 2 Hexsides While Immobile
2	Assume a Firing Stance
1	Look Over / Around Cover

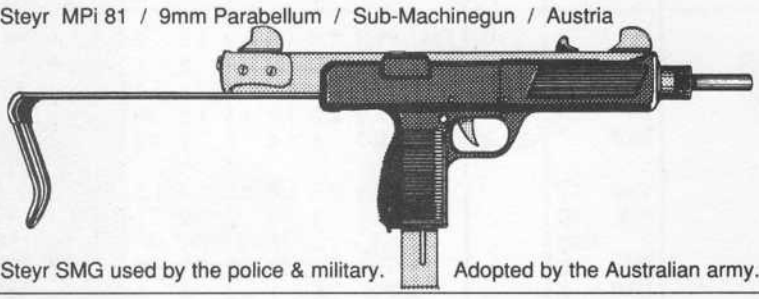
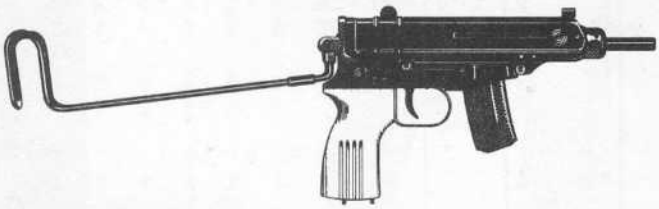
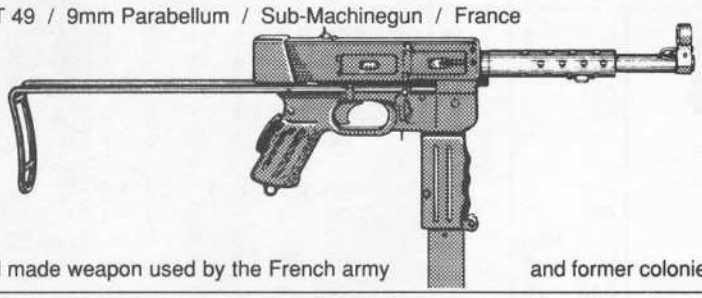
CA	Actions
2	Throw a Grenade
3	Open a Door
4	Pick Up Weapon
4	Set Down Weapon
2	Draw Hand Weapon
7	Get out of Backpack

Automatic Pistols	Physical Data	Aim Time AC Md	Ballistic Data		Range in 2 yard hexes 10	20	40	70	100	200	300	400
FN Mk 1	L 8	1 -17	FMJ	PEN	2.1	1.9	1.6	1.3	1.0	.4	.2	.1
	W 2.3	2 -11		DC	3	3	2	2	1	1	1	1
Automatic Pistol		3 -10										
9mm Parabellum	RT 4	4 -9	JHP	PEN	2.0	1.8	1.6	1.2	1.0	.4	.2	.1
	ROF *	5 -8		DC	4	4	3	2	2	1	1	1
Belgium		6 -7										
	Cap 13		AP	PEN	2.9	2.7	2.3	1.8	1.4	.6	.3	.1
	AW .50			DC	3	3	2	2	1	1	1	1
Browning High-Power pistol. Manufactured & sold worldwide.	Mag											
	KD 3			BA	46	38	29	22	17	8	2	-1
	SAB 4			TOF	1	1	2	4	6	15	24	35
Type 51	L 8	1 -16	FMJ	PEN	2.7	2.5	2.2	1.7	1.3	.6	.3	.1
	W 1.9	2 -11		DC	3	3	2	2	2	1	1	1
Automatic Pistol		3 -10										
7.62 x 25mm	RT 4	4 -9	JHP	PEN	2.6	2.4	2.1	1.6	1.3	.6	.3	.1
	ROF *	5 -8		DC	5	4	4	3	2	1	1	1
China		6 -7										
	Cap 8		AP	PEN	3.8	3.6	3.0	2.4	1.9	.9	.4	.2
	AW .33			DC	3	3	2	2	2	1	1	1
Chinese copy of the Soviet TT33. Standard pistol of the Chinese army.	Mag											
	KD 3			BA	48	40	31	24	19	10	5	1
	SAB 4			TOF	0	1	2	3	5	12	20	29
MAB PA15	L 8	1 -18	FMJ	PEN	2.1	1.9	1.6	1.3	1.0	.4	.2	.1
	W 2.8	2 -11		DC	3	3	2	2	1	1	1	1
Automatic Pistol		3 -10										
9mm Parabellum	RT 4	4 -9	JHP	PEN	2.0	1.8	1.6	1.2	1.0	.4	.2	.1
	ROF *	5 -8		DC	4	4	3	2	2	1	1	1
France		6 -7										
	Cap 15		AP	PEN	2.9	2.7	2.3	1.8	1.4	.6	.3	.1
	AW .60			DC	3	3	2	2	1	1	1	1
Modern, high capacity pistol. Standard pistol of the French army.	Mag											
	KD 3			BA	46	38	29	22	17	8	2	-1
	SAB 4			TOF	1	1	2	4	6	15	24	35
Walther PPK	L 6	1 -16	FMJ	PEN	1.0	.9	.7	.5	.3	.1		
	W 1.4	2 -11		DC	1	1	1	1	1	1		
Automatic Pistol		3 -10										
32 ACP	RT 4	4 -9	JHP	PEN	.9	.8	.7	.5	.3	.1		
	ROF *	5 -8		DC	2	1	1	1	1	1		
W Germany												
	Cap 7		AP	PEN	1.4	1.2	1.0	.7	.5	.2		
	AW .31			DC	1	1	1	1	1	1		
Small, easily concealed pistol designed for police undercover use.	Mag											
	KD 2			BA	44	36	27	19	14	5		
	SAB 2			TOF	1	1	3	5	8	20		
Walther P1	L 9	1 -17	FMJ	PEN	1.9	1.8	1.5	1.1	.9	.4	.1	.1
	W 2.1	2 -11		DC	3	3	2	2	1	1	1	1
Automatic Pistol		3 -10										
9mm Parabellum	RT 5	4 -9	JHP	PEN	1.9	1.7	1.4	1.1	.8	.3	.1	.1
	ROF *	5 -8		DC	4	4	3	2	1	1	1	1
W Germany		6 -7										
	Cap 8		AP	PEN	2.7	2.5	2.1	1.6	1.2	.5	.2	.1
	AW .41			DC	3	2	2	2	1	1	1	1
Current version of the WW II P38. Standard pistol of the West German army.	Mag											
	KD 3			BA	45	37	28	21	16	6	1	-2
	SAB 4			TOF	1	1	2	4	6	15	25	36
HK P7M13	L 7	1 -17	FMJ	PEN	1.9	1.8	1.5	1.1	.9	.4	.1	.1
	W 2.5	2 -11		DC	3	3	2	2	1	1	1	1
Automatic Pistol		3 -10										
9mm Parabellum	RT 3	4 -9	JHP	PEN	1.9	1.7	1.4	1.1	.8	.3	.1	.1
	ROF *	5 -8		DC	4	4	3	2	1	1	1	1
W Germany		6 -7										
	Cap 13		AP	PEN	2.7	2.5	2.1	1.6	1.2	.5	.2	.1
	AW .63			DC	3	2	2	2	1	1	1	1
Modern pistol of innovative design used by the West German army and police.	Mag											
	KD 3			BA	45	37	28	21	16	6	1	-2
	SAB 4			TOF	1	1	2	4	6	15	25	36

Automatic Pistols	Physical Data	Aim Time AC Md	Ballistic Data	Range in 2 yard hexes 10	20	40	70	100	200	300	400
HK VP70M	L 8/21	1 -17	FMJ PEN	2.0	1.9	1.6	1.2	.9	.4	.2	.1
	W 2.5	2 -11	DC	3	3	2	2	1	1	1	1
Automatic Pistol		3 -10	JHP PEN	2.0	1.8	1.5	1.2	.9	.4	.2	.1
9mm Parabellum	RT 5	4 -9	DC	4	4	3	2	2	1	1	1
	ROF **	5 -8	AP PEN	2.9	2.6	2.2	1.7	1.3	.5	.2	.1
W Germany		6 -7	DC	3	3	2	2	1	1	1	1
	Cap 18										
	AW .69										
	Mag		3RB	-10	-5	0	4	7	12	15	17
Late model pistol with three round burst capability when its shoulder stock is attached.	KD 3		BA	45	37	28	21	16	6	1	-2
	SAB 4		TOF	1	1	2	4	6	14	24	35
M1951	L 8	1 -16	FMJ PEN	1.9	1.8	1.5	1.1	.9	.4	.1	.1
	W 1.9	2 -11	DC	3	3	2	2	1	1	1	1
Automatic Pistol		3 -10									
9mm Parabellum	RT 5	4 -9	JHP PEN	1.9	1.7	1.4	1.1	.8	.3	.1	.1
	ROF *	5 -8	DC	4	4	3	2	1	1	1	1
Italy		6 -7									
	Cap 8		AP PEN	2.7	2.5	2.1	1.6	1.2	.5	.2	.1
	AW .40		DC	3	2	2	2	1	1	1	1
	Mag										
This Beretta pistol is used by the Italian & Israeli armies. It is also popular in the civilian market.	KD 3		BA	45	37	28	21	16	6	1	-2
	SAB 4		TOF	1	1	2	4	6	15	25	36
M93R	L 9	1 -18	FMJ PEN	2.2	2.0	1.7	1.3	1.0	.4	.2	.1
	W 3.1	2 -11	DC	3	3	2	2	1	1	1	1
Automatic Pistol		3 -10	JHP PEN	2.1	2.0	1.6	1.3	1.0	.4	.2	.1
9mm Parabellum	RT 4	4 -9	DC	5	4	4	3	2	1	1	1
	ROF **	5 -8	AP PEN	3.1	2.9	2.4	1.9	1.4	.6	.3	.1
Italy		6 -7	DC	3	3	2	2	1	1	1	1
	Cap 20										
	AW .69										
	Mag		3RB	-2	3	8	12	15	20	22	24
Beretta with three round burst capability. Issued to the Italian Special Forces.	KD 3		BA	46	37	28	21	16	6	1	-2
	SAB 4		TOF	0	1	2	4	6	14	23	33
M951R	L 7	1 -18	FMJ PEN	2.4	2.2	1.9	1.5	1.1	.5	.2	.1
	W 3.2	2 -12	DC	3	3	3	2	2	1	1	1
Machine Pistol		3 -10	JHP PEN	2.3	2.1	1.8	1.4	1.1	.5	.2	.1
9mm Parabellum	RT 4	4 -9	DC	5	5	4	3	2	1	1	1
	ROF *6	5 -8	AP PEN	3.4	3.1	2.6	2.0	1.6	.7	.3	.1
Italy		6 -7	DC	3	3	3	2	2	1	1	1
	Cap 10										
	AW .44										
	Mag		MA	.4	1	2	3	4	8	12	16
Modified large capacity M1951 with fully automatic fire capability.	KD 3		BA	46	37	28	21	16	7	1	-2
	SAB 4		TOF	0	1	2	4	6	13	22	32
SIG P226	L 8	1 -17	FMJ PEN	1.9	1.8	1.5	1.1	.9	.4	.1	.1
	W 2.2	2 -11	DC	3	3	2	2	1	1	1	1
Automatic Pistol		3 -10									
9mm Parabellum	RT 4	4 -9	JHP PEN	1.9	1.7	1.4	1.1	.8	.3	.1	.1
	ROF *	5 -8	DC	4	4	3	2	1	1	1	1
Switzerland		6 -7									
	Cap 15		AP PEN	2.7	2.5	2.1	1.6	1.2	.5	.2	.1
	AW .55		DC	3	2	2	2	1	1	1	1
	Mag										
Well balanced, large capacity version of the SIG P220 with ambidextrous magazine catch.	KD 3		BA	45	37	28	21	16	6	1	-2
	SAB 4		TOF	1	1	2	4	6	15	25	36
Makarov PM	L 6	1 -16	FMJ PEN	1.2	1.1	.9	.6	.4	.1		
	W 1.7	2 -11	DC	2	2	1	1	1	1		
Automatic Pistol		3 -10									
9 x 18mm	RT 5	4 -9	JHP PEN	1.2	1.0	.8	.6	.4	.1		
	ROF *	5 -8	DC	3	3	2	1	1	1		
USSR											
	Cap 8		AP PEN	1.7	1.5	1.2	.8	.6	.2		
	AW .4		DC	2	2	1	1	1	1		
	Mag										
Dating back to the 1950s, this is still the standard pistol of the Soviet military.	KD 2		BA	41	32	23	15	10	1		
	SAB 3		TOF	1	1	3	5	7	18		

Automatic Pistols	Physical Data	Aim Time AC Md	Ballistic Data	Range in 2 yard hexes 10	20	40	70	100	200	300	400
5.45 PSM Automatic Pistol 5.45 x 18mm USSR Soviet pistol issued to internal security forces. It has an under-powered cartridge.	L 6 W 1.1 RT 5 ROF * Cap 8 AW .25 Mag KD 1 SAB 2	1 -15 2 -11 3 -10 4 -9 5 -8	FMJ PEN DC JHP PEN DC AP PEN DC BA TOF	1.2 1 1.2 2 1.7 1 48 1	1.1 1 1.0 1 1.5 1 41 1	.9 1 .9 1 1.3 1 33 3	.7 1 .6 1 .9 1 26 5	.5 1 .5 1 .7 1 21 7			
M92F Automatic Pistol 9mm Parabellum USA Beretta 9mm which has become extremely popular since its successes in U.S. military trials.	L 9 W 2.4 RT 4 ROF * Cap 15 AW .60 Mag KD 3 SAB 4	1 -17 2 -11 3 -10 4 -9 5 -8 6 -7	FMJ PEN DC JHP PEN DC AP PEN DC BA TOF	2.4 3 2.3 5 3.4 3 46 0	2.2 3 2.1 5 3.1 3 37 1	1.9 3 1.8 4 2.6 3 28 2	1.5 2 1.4 3 2.0 2 21 4	1.1 2 1.1 2 1.6 2 16 6	.5 1 .5 1 .7 1 7 13	.2 1 .2 1 .3 1 1 22	.1 1 .1 1 .1 1 -2 32
S&W M469 Automatic Pistol 9mm Parabellum USA Shortened version of the Smith and Wesson M459 designed for the US Air Force.	L 7 W 1.9 RT 4 ROF * Cap 12 AW .50 Mag KD 3 SAB 4	1 -16 2 -11 3 -10 4 -9 5 -8	FMJ PEN DC JHP PEN DC AP PEN DC BA TOF	2.0 3 2.0 4 2.9 3 45 1	1.9 3 1.8 4 2.6 3 37 1	1.6 2 1.5 3 2.2 2 28 2	1.2 2 1.2 2 1.7 2 21 4	.9 1 .9 2 1.3 1 16 6	.4 1 .4 1 .5 1 6 14	.2 1 .2 1 .2 1 1 24	.1 1 .1 1 .1 1 -2 35
M1911A1 Automatic Pistol 45 ACP USA The Colt 45 Automatic Pistol has been the USA's standard military sidearm since WW I.	L 9 W 3.0 RT 4 ROF * Cap 7 AW .70 Mag KD 5 SAB 5	1 -18 2 -11 3 -10 4 -9 5 -8 6 -7	FMJ PEN DC JHP PEN DC AP PEN DC BA TOF	1.6 3 1.5 4 2.2 3 45 1	1.5 3 1.4 4 2.1 3 36 2	1.2 2 1.2 3 1.8 2 27 3	1.0 1 .9 2 1.4 1 20 5	.8 1 .7 1 1.1 1 15 8	.3 1 .3 1 .5 1 5 19	.2 1 .1 1 .2 1 0 31	.1 1 .1 1 .1 1 -4 45
M15 Automatic Pistol 45 ACP USA The M15 General Officers Pistol is a shortened version of the M1911A1.	L 8 W 2.8 RT 4 ROF * Cap 7 AW .70 Mag KD 5 SAB 5	1 -18 2 -11 3 -10 4 -9 5 -8 6 -7	FMJ PEN DC JHP PEN DC AP PEN DC BA TOF	1.5 3 1.4 4 2.1 3 45 1	1.4 3 1.3 3 2.0 3 37 2	1.1 2 1.1 3 1.7 2 27 3	.9 1 .8 2 1.3 1 20 5	.8 1 .7 1 1.0 1 15 8	.3 1 .3 1 .5 1 5 20	.2 1 .1 1 .2 1 0 32	.1 1 .1 1 .1 1 -4 47
ASP 9mm Automatic Pistol 9mm Parabellum USA Modified Smith & Wesson M39 with Guttersnipe sights intended for high level security.	L 7 W 1.4 RT 4 ROF * Cap 7 AW .40 Mag KD 3 SAB 4	1 -16 2 -12 3 -10	FMJ PEN DC JHP PEN DC AP PEN DC BA TOF	1.9 3 1.9 4 2.7 3 45 1	1.8 3 1.7 4 2.5 2 37 1	1.5 2 1.4 3 2.1 2 28 2	1.1 2 1.1 2 1.6 2 21 4	.9 1 .8 1 1.2 1 16 6	.4 1 .3 1 .5 1 6 15	.1 1 .1 1 .2 1 1 25	.1 1 .1 1 .1 1 -2 36

Sub-Machineguns / Tech Level 13

Sub-Machineguns	Physical Data	Aim Time AC Md	Ballistic Data		Range in 2 yard hexes 10	20	40	70	100	200	300	400
PA3 - DM / 9mm Parabellum / Sub-Machinegun / Argentina	L 21/27	1 -23	FMJ	PEN	2.5	2.3	2.0	1.5	1.2	.5	.2	.1
	W 8.7	2 -12		DC	3	3	3	2	2	1	1	1
		3 -9	JHP	PEN	2.4	2.2	1.9	1.5	1.1	.5	.2	.1
	RT 8	4 -8		DC	5	5	4	3	2	1	1	1
	ROF *5	5 -6	AP	PEN	3.6	3.3	2.8	2.2	1.7	.7	.3	.1
		6 -5		DC	3	3	3	2	2	1	1	1
	Cap 25	7 -4										
	AW 1.1	8 -3										
	Mag	9 -2		MA	.2	.4	.9	2	2	4	7	9
	KD 4			BA	46	37	28	21	16	7	1	-2
Standard Sub-Machinegun of the Argentine military.	SAB 3			TOF	0	1	2	4	6	13	21	31
F1 / 9mm Para. / Sub-Machinegun / Australia	L 28	1 -23	FMJ	PEN	2.1	1.9	1.6	1.3	1.0	.4	.2	.1
	W 8.6	2 -12		DC	3	3	2	2	1	1	1	1
		3 -9	JHP	PEN	2.0	1.9	1.6	1.2	.9	.4	.2	.1
	RT 9	4 -8		DC	4	4	3	2	2	1	1	1
	ROF *5	5 -6	AP	PEN	3.0	2.7	2.3	1.8	1.4	.6	.2	.1
		6 -5		DC	3	3	2	2	1	1	1	1
	Cap 34	7 -4										
	AW 1.4	8 -3										
	Mag	9 -3		MA	.2	.4	.8	1	2	4	6	8
	KD 3	10 -2		BA	46	37	28	21	16	6	1	-2
Australian Sub-Machinegun unusual for its top loading magazine.	SAB 3			TOF	1	1	2	4	6	14	24	34
Steyr MPi 81 / 9mm Parabellum / Sub-Machinegun / Austria	L 17/24	1 -22	FMJ	PEN	2.3	2.1	1.8	1.4	1.1	.5	.2	.1
	W 7.8	2 -12		DC	3	3	3	2	1	1	1	1
		3 -9	JHP	PEN	2.2	2.0	1.7	1.3	1.0	.4	.2	.1
	RT 8	4 -7		DC	5	4	4	3	2	1	1	1
	ROF *6	5 -6	AP	PEN	3.2	3.0	2.5	1.9	1.5	.6	.3	.1
		6 -5		DC	3	3	2	2	1	1	1	1
	Cap 32	7 -4										
	AW 1.4	8 -3										
	Mag	9 -2		MA	.3	.5	1	2	3	5	8	11
	KD 3			BA	46	37	28	21	16	7	1	-2
Steyr SMG used by the police & military. Adopted by the Australian army.	SAB 3			TOF	0	1	2	4	6	13	23	32
M61 Skorpion / 32 ACP / Sub-Machine Pistol / Czechoslovakia	L 11/20	1 -19	FMJ	PEN	1.2	1.1	.8	.6	.4	.1		
	W 4.4	2 -11		DC	2	1	1	1	1	1		
		3 -8	JHP	PEN	1.1	1.0	.8	.6	.4	.1		
	RT 7	4 -7		DC	3	2	2	1	1	1		
	ROF *7	5 -6	AP	PEN	1.7	1.5	1.2	.8	.6	.2		
		6 -5		DC	2	1	1	1	1	1		
	Cap 20	7 -4										
	AW .90											
	Mag			MA	.2	.4	.9	1	2	4		
	KD 2			BA	43	35	25	18	13	4		
The Skorpion SMP is intended for vehicular crews and heavily loaded infantry.	SAB 2			TOF	1	1	3	5	7	18		
MAT 49 / 9mm Parabellum / Sub-Machinegun / France	L 18/28	1 -23	FMJ	PEN	2.4	2.2	1.9	1.5	1.1	.5	.2	.1
	W 9.2	2 -12		DC	3	3	3	2	2	1	1	1
		3 -9	JHP	PEN	2.3	2.1	1.8	1.4	1.1	.5	.2	.1
	RT 8	4 -8		DC	5	5	4	3	2	1	1	1
	ROF *5	5 -6	AP	PEN	3.4	3.1	2.6	2.0	1.6	.7	.3	.1
		6 -5		DC	3	3	3	2	2	1	1	1
	Cap 32	7 -4										
	AW 1.5	8 -3										
	Mag	9 -2		MA	.2	.4	.8	1	2	4	6	8
	KD 3			BA	46	37	28	21	16	7	1	-2
Well made weapon used by the French army and former colonies.	SAB 3			TOF	0	1	2	4	6	13	22	32
Heckler & Koch MP5 / 9mm Parabellum / Sub-Machinegun / W Germany	L 19/27	1 -20	FMJ	PEN	2.5	2.3	2.0	1.5	1.2	.5	.2	.1
	W 6.8	2 -10		DC	3	3	3	2	2	1	1	1
		3 -8	JHP	PEN	2.4	2.2	1.9	1.5	1.1	.5	.2	.1
	RT 8	4 -6		DC	5	5	4	3	2	1	1	1
	ROF *7	5 -5	AP	PEN	3.6	3.3	2.8	2.2	1.7	.7	.3	.1
		6 -4		DC	3	3	3	2	2	1	1	1
	Cap 30	7 -3										
	AW 1.2	8 -2										
	Mag	9 -1		MA	.4	.7	1	2	4	7	11	14
	KD 4			BA	46	37	28	21	16	7	1	-2
Widely exported SMG used by W German police & border guards.	SAB 3			TOF	0	1	2	4	6	13	21	31

Sub-Machineguns

Heckler & Koch MP5K / 9mm Parabellum / Sub-Machine Pistol / W Germany

Short MP5 designed for anti-terrorist units.

Physical Data		Aim Time AC	Aim Time Md	Ballistic Data		Range in 2 yard hexes 10	20	40	70	100	200	300	400
L	13	1	-19	FMJ	PEN	2.2	2.0	1.7	1.3	1.0	.4	.2	.1
W	5.6	2	-11		DC	3	3	2	2	1	1	1	1
		3	-10	JHP	PEN	2.1	2.0	1.6	1.3	1.0	.4	.2	.1
RT	7	4	-9		DC	5	4	4	3	2	1	1	1
ROF	**8	5	-8	AP	PEN	3.1	2.9	2.4	1.9	1.4	.6	.3	.1
		6	-7		DC	3	3	2	2	1	1	1	1
Cap	30	7	-6										
AW	1.2				3RB	-6	-1	4	8	11	16	19	21
	Mag				MA	.4	.8	2	3	4	8	12	17
KD	3				BA	46	37	28	21	16	6	1	-2
SAB	3				TOF	0	1	2	4	6	14	23	33

Heckler & Koch 53 / 5.56mm NATO / Sub-Machinegun / W Germany

Short version of the HK 33 which can be used as an SMG or rifle.

Physical Data		Aim Time AC	Aim Time Md	Ballistic Data		Range in 2 yard hexes 10	20	40	70	100	200	300	400
L	22/30	1	-21	FMJ	PEN	10	9.9	9.0	7.9	6.9	4.4	2.8	1.8
W	8.1	2	-11		DC	5	5	5	4	4	3	2	1
		3	-8	JHP	PEN	10	9.5	8.7	7.5	6.6	4.2	2.7	1.7
RT	8	4	-7		DC	7	7	6	6	6	5	3	2
ROF	*6	5	-5	AP	PEN	15	14	13	11	9.7	6.1	3.9	2.5
		6	-4		DC	5	5	4	4	4	3	2	1
Cap	40	7	-3										
AW	1.4	8	-2										
	Mag	9	-1		MA	.3	.5	1	2	3	5	8	11
KD	4				BA	61	52	44	36	31	22	16	12
SAB	3				TOF	0	0	1	2	3	6	10	14

Uzi / 9mm Parabellum / Sub-Machinegun / Israel

Sturdy, reliable weapon popular with police and secret service.

Physical Data		Aim Time AC	Aim Time Md	Ballistic Data		Range in 2 yard hexes 10	20	40	70	100	200	300	400
L	19/26	1	-23	FMJ	PEN	2.5	2.3	2.0	1.5	1.2	.5	.2	.1
W	9.0	2	-12		DC	3	3	3	2	2	1	1	1
		3	-9	JHP	PEN	2.4	2.2	1.9	1.5	1.1	.5	.2	.1
RT	8	4	-8		DC	5	5	4	3	2	1	1	1
ROF	*5	5	-6	AP	PEN	3.6	3.3	2.8	2.2	1.7	.7	.3	.1
		6	-5		DC	3	3	3	2	2	1	1	1
Cap	32	7	-4										
AW	1.3	8	-3										
	Mag				MA	.2	.4	.9	1	2	4	6	9
KD	4				BA	46	37	28	21	16	7	1	-2
SAB	3				TOF	0	1	2	4	6	13	21	31

Mini Uzi / 9mm Parabellum / Sub-Machine Pistol / Israel

Small version of the Uzi intended for police and security forces.

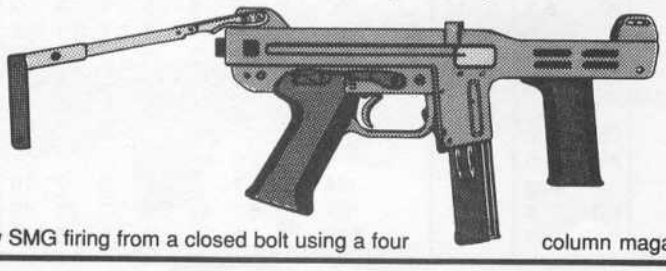
Physical Data		Aim Time AC	Aim Time Md	Ballistic Data		Range in 2 yard hexes 10	20	40	70	100	200	300	400
L	14/24	1	-22	FMJ	PEN	1.9	1.8	1.5	1.1	.9	.4	.1	.1
W	7.3	2	-12		DC	3	3	2	2	1	1	1	1
		3	-9	JHP	PEN	1.9	1.7	1.4	1.1	.8	.3	.1	.1
RT	7	4	-7		DC	4	4	3	2	1	1	1	1
ROF	*8	5	-6	AP	PEN	2.7	2.5	2.1	1.6	1.2	.5	.2	.1
		6	-5		DC	3	2	2	2	1	1	1	1
Cap	32	7	-4										
AW	1.3	8	-3										
	Mag				MA	.3	.7	1	2	3	7	10	13
KD	3				BA	45	37	28	21	16	6	1	-2
SAB	3				TOF	1	1	2	4	6	15	25	36

Beretta M12S / 9mm Parabellum / Sub-Machinegun / Italy

Widely exported SMG used in Italy, Africa, and South America.

Physical Data		Aim Time AC	Aim Time Md	Ballistic Data		Range in 2 yard hexes 10	20	40	70	100	200	300	400
L	17/26	1	-22	FMJ	PEN	2.3	2.1	1.8	1.4	1.1	.5	.2	.1
W	8.4	2	-12		DC	3	3	3	2	1	1	1	1
		3	-9	JHP	PEN	2.2	2.0	1.7	1.3	1.0	.4	.2	.1
RT	8	4	-7		DC	5	4	4	3	2	1	1	1
ROF	*5	5	-6	AP	PEN	3.2	3.0	2.5	1.9	1.5	.6	.3	.1
		6	-5		DC	3	3	2	2	1	1	1	1
Cap	32	7	-4										
AW	1.3	8	-3										
	Mag				MA	.2	.4	.8	1	2	4	6	8
KD	3				BA	46	37	28	21	16	7	1	-2
SAB	3				TOF	0	1	2	4	6	13	23	32

Spectre / 9mm Parabellum / Sub-Machinegun / Italy



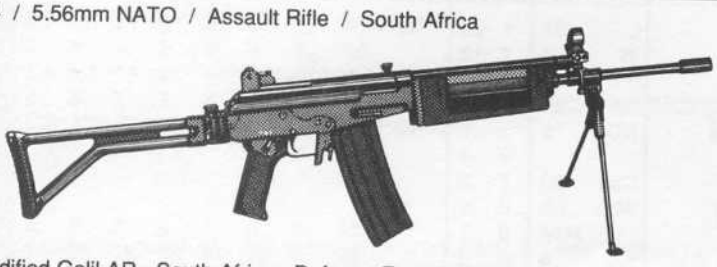
New SMG firing from a closed bolt using a four column magazine.

Physical Data		Aim Time AC	Aim Time Md	Ballistic Data		Range in 2 yard hexes 10	20	40	70	100	200	300	400
L	14/23	1	-20	FMJ	PEN	2.5	2.3	2.0	1.5	1.2	.5	.2	.1
W	7.6	2	-10		DC	3	3	3	2	2	1	1	1
		3	-7	JHP	PEN	2.4	2.2	1.9	1.5	1.1	.5	.2	.1
RT	8	4	-5		DC	5	5	4	3	2	1	1	1
ROF	*8	5	-4	AP	PEN	3.6	3.3	2.8	2.2	1.7	.7	.3	.1
		6	-3		DC	3	3	3	2	2	1	1	1
Cap	50	7	-2										
AW	1.6	8	-1										
	Mag				MA	.4	.8	2	3	4	8	11	15
KD	4				BA	46	37	28	21	16	7	1	-2
SAB	3				TOF	0	1	2	4	6	13	21	31

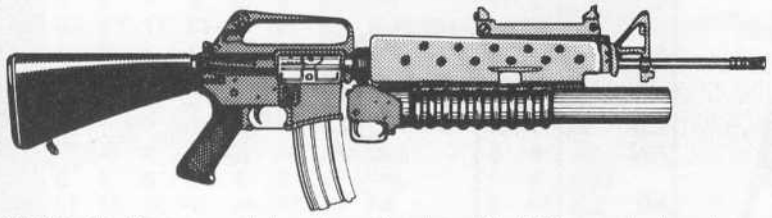
Sub-Machineguns	Physical Data	Aim Time AC Md	Ballistic Data		Range in 2 yard hexes 10	20	40	70	100	200	300	400
Armscor BXP / 9mm Parabellum / Sub-Machinegun / South Africa	L 14/22	1 -21	FMJ	PEN	1.7	1.5	1.3	1.0	.7	.3	.1	
	W 6.3	2 -11		DC	2	2	2	1	1	1	1	
		3 -9	JHP	PEN	1.6	1.5	1.2	.9	.7	.3	.1	
	RT 7	4 -7		DC	4	3	2	2	1	1	1	
	ROF *6	5 -6	AP	PEN	2.3	2.1	1.8	1.3	1.0	.4	.2	
		6 -5		DC	2	2	2	1	1	1	1	
	Cap 32	7 -4										
	AW 1.2	8 -3										
	Mag			MA	.3	.5	1	2	3	5	8	
	KD 3			BA	45	37	28	20	15	6	1	
Compact, light Sub-Machinegun which can be fired one handed.	SAB 3			TOF	1	1	2	5	7	16	27	
AKR / 5.45 x 39.5mm / Sub-Machinegun / USSR	L 17/27	1 -22	FMJ	PEN	11	10	9.4	8.1	7.1	4.4	2.7	1.7
	W 7.3	2 -12		DC	5	5	5	4	4	3	2	1
		3 -9	JHP	PEN	10	9.9	9.0	7.8	6.8	4.2	2.6	1.6
	RT 8	4 -7		DC	7	7	6	6	6	4	3	2
	ROF *7	5 -6	AP	PEN	15	15	13	11	10	6.2	3.8	2.4
		6 -5		DC	5	5	4	4	4	3	2	1
	Cap 30	7 -4										
	AW 1.3	8 -3										
	Mag			MA	.2	.3	.6	1	2	3	5	7
	KD 3			BA	60	52	43	35	31	21	15	12
SMG version of the AKS 74 rifle. In service with Soviet forces.	SAB 3			TOF	0	0	1	2	3	6	9	13
Sterling Mk 7 / 9mm Parabellum / Sub-Machine Pistol / UK	L 14	1 -20	FMJ	PEN	2.3	2.1	1.8	1.4	1.1	.5	.2	.1
	W 5.7	2 -12		DC	3	3	3	2	1	1	1	1
		3 -11	JHP	PEN	2.2	2.0	1.7	1.3	1.0	.4	.2	.1
	RT 8	4 -10		DC	5	4	4	3	2	1	1	1
	ROF *8	5 -9	AP	PEN	3.2	3.0	2.5	1.9	1.5	.6	.3	.1
		6 -8		DC	3	3	2	2	1	1	1	1
	Cap 34	7 -8										
	AW 1.2	8 -7										
	Mag			MA	.4	.8	2	3	4	8	13	17
	KD 3			BA	46	37	28	21	16	7	1	-2
Special purpose paratroopers machine pistol.	SAB 3			TOF	0	1	2	4	6	13	23	32
Ingram MAC 10 / 9mm Parabellum / Sub-Machine Pistol / USA	L 11/22	1 -22	FMJ	PEN	2.1	1.9	1.6	1.3	1.0	.4	.2	.1
	W 7.6	2 -12		DC	3	3	2	2	1	1	1	1
		3 -9	JHP	PEN	2.0	1.9	1.6	1.2	.9	.4	.2	.1
	RT 7	4 -7		DC	4	4	3	2	2	1	1	1
	ROF *9	5 -6	AP	PEN	3.0	2.7	2.3	1.8	1.4	.6	.2	.1
		6 -5		DC	3	3	2	2	1	1	1	1
	Cap 32	7 -4										
	AW 1.4	8 -3										
	Mag			MA	.4	.8	2	3	4	8	12	15
	KD 3			BA	46	37	28	21	16	6	1	-2
Compact Sub-Machinegun chambered for 9mm Parabellum.	SAB 3			TOF	1	1	2	4	6	14	24	34
Ingram MAC 10 / 45 ACP / Sub-Machine Pistol / USA	L 11/22	1 -22	FMJ	PEN	1.7	1.6	1.3	1.0	.8	.4	.2	.1
	W 8.4	2 -12		DC	3	2	2	1	1	1	1	1
		3 -9	JHP	PEN	1.6	1.5	1.3	1.0	.8	.4	.2	.1
	RT 7	4 -7		DC	4	3	3	2	1	1	1	1
	ROF *10	5 -6	AP	PEN	2.4	2.2	1.9	1.5	1.2	.5	.2	.1
		6 -5		DC	3	2	2	1	1	1	1	1
	Cap 30	7 -4										
	AW 2.2	8 -3										
	Mag			MA	.6	1	2	4	6	12	19	25
	KD 5			BA	45	37	28	21	16	6	1	-3
MAC 10 chambered for 45 ACP. Its high recoil hinders one hand fire.	SAB 4			TOF	1	1	3	5	8	18	30	43
Bushmaster / 5.56mm NATO / Sub-Machinegun / USA	L 21	1 -21	FMJ	PEN	13	12	11	9.9	8.6	5.3	3.3	2.1
	W 6.2	2 -12		DC	6	6	5	5	4	3	3	2
		3 -11	JHP	PEN	13	12	11	9.5	8.2	5.1	3.2	2.0
	RT 8	4 -10		DC	7	7	7	7	6	5	4	3
	ROF *6	5 -9	AP	PEN	18	18	16	14	12	7.5	4.7	2.9
		6 -8		DC	6	5	5	5	4	3	3	2
	Cap 30											
	AW 1.0											
	Mag			MA	.3	.7	1	2	3	7	10	13
	KD 4			BA	60	51	42	35	30	20	15	11
Powerful SMG designed for 1 hand fire braced against the forearm.	SAB 3			TOF	0	0	1	2	2	5	8	12

Assault Rifles	Physical Data		Aim Time AC	Aim Time Md	Ballistic Data		Range in 2 yard hexes 10	20	40	70	100	200	300	400
L1A1 - F1 / 7.62mm NATO / Assault Rifle / Australia	L	42	1	-24	FMJ	PEN	18	18	17	15	14	9.8	7.0	5.0
	W	12.0	2	-14		DC	8	8	8	7	7	6	6	5
			3	-10	JHP	PEN	18	17	16	15	13	9.4	6.7	4.8
	RT	8	4	-8		DC	9	9	9	9	9	8	7	7
	ROF	*	5	-6	AP	PEN	26	25	24	21	19	14	9.9	7.1
			6	-5		DC	8	7	7	7	7	6	6	5
	Cap	20	7	-4										
	AW	1.6	8	-3										
		Mag	9	-2										
Standard Australian army rifle patterned after the FN FAL. It is being replaced by the Austrian Steyr AUG.	KD	10	10	-1		BA	61	53	45	37	32	23	17	13
	SAB	5	11	0		TOF	0	0	1	2	2	5	8	12
Steyr AUG / 5.56mm NATO / Assault Rifle / Austria	L	31	1	-23	FMJ	PEN	15	14	13	11	9.9	6.3	4.0	2.5
	W	9.0	2	-12		DC	6	6	6	5	5	4	3	2
			3	-8	JHP	PEN	14	14	12	11	9.5	6.0	3.8	2.4
	RT	10	4	-6		DC	8	8	7	7	7	6	4	3
	ROF	*5	5	-5	AP	PEN	21	20	18	16	14	8.8	5.6	3.5
			6	-4		DC	6	6	6	5	5	3	3	2
	Cap	30	7	-3										
	AW	1.1	8	-2										
		Mag	9	-1		MA	.2	.5	1	2	2	5	7	10
	KD	4	10	0		BA	60	51	42	35	30	20	15	11
New Austrian rifle with an optical scope in its carrying handle.	SAB	3	11	1		TOF	0	0	1	1	2	5	8	11
FN FAL / 7.62mm NATO / Assault Rifle / Belgium	L	43	1	-24	FMJ	PEN	19	19	17	16	14	10	7.4	5.3
	W	10.8	2	-13		DC	8	8	8	7	7	7	6	5
			3	-9	JHP	PEN	18	18	17	15	14	9.8	7.1	5.1
	RT	8	4	-8		DC	9	9	9	9	9	8	7	7
	ROF	*6	5	-6	AP	PEN	27	26	25	22	20	14	10	7.5
			6	-5		DC	8	8	7	7	7	6	6	5
	Cap	20	7	-4										
	AW	1.4	8	-3										
		Mag	9	-2		MA	.6	1	3	4	6	13	19	25
Highly successful weapon exported to over 90 countries including the United Kingdom and Israel.	KD	10	10	-1		BA	61	53	45	37	32	23	17	13
	SAB	5	11	0		TOF	0	0	1	2	2	5	8	11
FN FNC / 5.56mm NATO / Assault Rifle / Belgium	L	30/39	1	-23	FMJ	PEN	15	15	14	12	11	7.0	4.6	3.0
	W	9.6	2	-12		DC	6	6	6	6	5	4	3	2
			3	-9	JHP	PEN	15	14	13	12	10	6.7	4.4	2.9
	RT	8	4	-7		DC	8	8	7	7	7	6	5	3
	ROF	**6	5	-6	AP	PEN	22	21	19	17	15	9.9	6.5	4.3
			6	-5		DC	6	6	6	5	5	4	3	2
	Cap	30	7	-4										
	AW	1.2	8	-3		3RB	-4	1	6	10	13	17	20	22
		Mag	9	-2		MA	.3	.6	1	2	3	6	9	12
Modern successor to the FN CAL. This weapon has three round burst capability and like the FN FAL has been marketed for export.	KD	4	10	-1		BA	61	53	44	37	32	22	17	13
	SAB	3	11	0		TOF	0	0	1	2	2	5	8	11
M1949 - 56 / 7.5 x 54mm / Assault Rifle / France	L	40	1	-23	FMJ	PEN	18	18	17	15	14	9.7	7.0	5.0
	W	9.6	2	-12		DC	7	7	7	7	7	6	6	5
			3	-9	JHP	PEN	17	17	16	14	13	9.4	6.7	4.8
	RT	8	4	-7		DC	9	9	9	9	8	8	7	7
	ROF	*	5	-6	AP	PEN	26	25	23	21	19	14	9.9	7.1
			6	-5		DC	7	7	7	7	7	6	5	4
	Cap	10	7	-4										
	AW	.95	8	-3										
		Mag	9	-2										
This French army rifle is still in service and is being replaced by the FA MAS. The FA MAS is currently only available to elite troops.	KD	9	10	-1		BA	62	54	45	38	33	24	18	14
	SAB	5	11	0		TOF	0	0	1	2	2	5	8	12
FA MAS / 5.56mm NATO / Assault Rifle / France	L	30	1	-23	FMJ	PEN	15	15	13	12	10	6.4	4.1	2.6
	W	9.0	2	-12		DC	6	6	6	6	5	4	3	2
			3	-9	JHP	PEN	15	14	13	11	9.7	6.2	3.9	2.5
	RT	10	4	-7		DC	8	8	7	7	7	6	4	3
	ROF	**8	5	-6	AP	PEN	22	21	19	16	14	9.1	5.8	3.7
			6	-4		DC	6	6	6	5	5	4	3	2
	Cap	25	7	-3										
	AW	1.0	8	-2		3RB	-6	-1	4	8	10	15	18	20
		Mag	9	-1		MA	.4	.8	2	3	4	8	12	16
	KD	4				BA	60	51	42	35	30	20	15	11
New French army rifle of lightweight, bullpup design.	SAB	3				TOF	0	0	1	1	2	5	8	11

Assault Rifles	Physical Data		Aim Time AC	Aim Time Md	Ballistic Data		Range in 2 yard hexes 10	20	40	70	100	200	300	400
FR F2 / 7.62mm NATO / Sniper Rifle / France	L	45	1	-24	FMJ	PEN	20	19	18	16	15	11	7.6	5.5
	W	12.5	2	-14		DC	8	8	8	7	7	7	6	5
			3	-7	JHP	PEN	19	18	17	16	14	10	7.3	5.3
	RT	8	4	-5		DC	9	9	9	9	9	8	8	7
	ROF	3	5	-4	AP	PEN	28	27	25	23	21	15	11	7.7
			6	-2		DC	8	8	7	7	7	6	6	5
	Cap	10	7	0										
	AW	1.1	8	1										
		Mag	9	2										
	KD	10	10	3		BA	68	59	50	43	38	28	22	18
French sniper rifle with optical scope and bipod chambered in 7.62mm NATO.	SAB	5	12	5		TOF	0	0	1	2	2	5	8	11
Heckler & Koch G3 / 7.62mm NATO / Assault Rifle / W Germany	L	40	1	-24	FMJ	PEN	17	16	15	14	13	8.9	6.3	4.5
	W	11.1	2	-14		DC	8	7	7	7	7	6	6	4
			3	-9	JHP	PEN	16	16	15	13	12	8.5	6.1	4.3
	RT	8	4	-8		DC	9	9	9	9	8	8	7	6
	ROF	*5	5	-6	AP	PEN	24	23	22	20	18	13	8.9	6.4
			6	-5		DC	7	7	7	7	7	6	5	4
	Cap	20	7	-4										
	AW	1.4	8	-3										
		Mag	9	-2		MA	.5	1	2	3	5	10	14	19
Standard rifle of the West German army. It is also widely used in Africa and South America.	KD	10	10	-1		BA	61	53	44	37	32	23	17	13
	SAB	5	11	0		TOF	0	0	1	2	3	5	9	12
Heckler & Koch G41 / 5.56mm NATO / Assault Rifle / W Germany	L	39	1	-23	FMJ	PEN	16	15	14	13	11	7.4	4.9	3.2
	W	8.6	2	-12		DC	6	6	6	6	5	4	3	2
			3	-9	JHP	PEN	15	15	14	12	11	7.1	4.7	3.1
	RT	8	4	-7		DC	8	8	8	7	7	6	5	4
	ROF	**7	5	-6	AP	PEN	23	22	20	18	16	10	6.9	4.5
			6	-5		DC	6	6	6	5	5	4	3	2
	Cap	30	7	-4										
	AW	1.1	8	-3		3RB	-4	1	5	9	12	17	20	22
		Mag	9	-2		MA	.4	.8	2	3	4	8	11	15
5.56mm NATO version of the G3. This weapon is considerably lighter than the G3 and has three round burst capability.	KD	4	10	-1		BA	61	53	44	37	32	22	17	13
	SAB	3	11	0		TOF	0	0	1	1	2	5	8	11
Heckler & Koch G11 / 4.7mm Caseless / Assault Rifle / W Germany	L	30	1	-23	FMJ	PEN	18	18	17	15	14	9.9	7.1	5.1
	W	8.7	2	-12		DC	5	5	5	5	4	4	3	3
			3	-8	JHP	PEN	18	17	16	15	13	9.5	6.8	4.9
	RT	10	4	-6		DC	7	7	7	7	6	6	5	4
	ROF	**5	5	-5	AP	PEN	26	25	24	21	19	14	10	7.2
			6	-4		DC	5	5	5	5	4	3	3	3
	Cap	50	7	-3										
	AW	.77	8	-2		3RB	-20	-16	-11	-7	-4	1	4	6
		Mag	9	-1		MA	.2	.5	.9	2	2	5	7	9
	KD	4	10	0		BA	64	57	49	43	38	29	23	19
Advanced caseless rifle under development.	SAB	3	11	1		TOF	0	0	1	1	2	5	7	10
Walther 2000 / 300 Winchester Magnum / Sniper Rifle / W Germany	L	36	1	-26	FMJ	PEN	28	27	25	24	22	17	13	9.8
	W	18.3	2	-16		DC	8	8	8	8	8	7	7	7
			3	-8	JHP	PEN	26	26	24	23	21	16	12	9.4
	RT	10	4	-6		DC	10	10	10	10	9	9	9	8
	ROF	*	5	-4	AP	PEN	39	38	36	33	31	24	18	14
			6	-3		DC	8	8	8	8	8	7	7	6
	Cap	6	7	-1										
	AW	.90	8	0										
		Mag	9	1										
	KD	13	10	2		BA	70	62	53	46	41	32	26	22
Specially designed sniper rifle with optical scope and bipod.	SAB	5	12	5		TOF	0	0	1	1	2	5	7	10
AMD 65 / 7.62 x 39mm / Assault Rifle / Hungary	L	26/34	1	-23	FMJ	PEN	11	10	9.4	8.3	7.2	4.6	3.0	1.9
	W	9.0	2	-13		DC	7	7	6	6	6	5	3	2
			3	-9	JHP	PEN	10	9.9	9.1	7.9	6.9	4.4	2.8	1.8
	RT	8	4	-7		DC	8	8	8	8	7	7	5	3
	ROF	*5	5	-6	AP	PEN	15	15	13	12	10	6.5	4.2	2.7
			6	-4		DC	6	6	6	6	6	4	3	2
	Cap	30	7	-3										
	AW	1.8	8	-2										
		Mag				MA	.4	.8	2	3	4	8	12	16
	KD	7				BA	58	50	40	33	28	18	13	9
Hungarian modified AKM 63 with folding stock and foregrip.	SAB	4				TOF	0	1	1	2	3	6	10	15

Assault Rifles	Physical Data	Aim Time AC Md	Ballistic Data	Range in 2 yard hexes 10	20	40	70	100	200	300	400
Galil AR / 5.56mm NATO / Assault Rifle / Israel	L 29/39	1 -23	FMJ PEN	16	15	14	12	11	6.8	4.3	2.7
	W 10.2	2 -13	DC	6	6	6	6	5	4	3	2
		3 -9	JHP PEN	15	15	13	12	10	6.5	4.1	2.6
	RT 8	4 -7	DC	8	8	8	7	7	6	5	3
	ROF *5	5 -6	AP PEN	22	21	20	17	15	9.5	6.1	3.9
		6 -5	DC	6	6	6	5	5	4	3	2
	Cap 35	7 -4									
	AW 1.6	8 -3									
	Mag	9 -2	MA	.2	.5	.9	2	2	5	7	9
Galil Assault Rifle in 5.56mm NATO.	KD 4	10 -1	BA	60	51	42	35	30	20	15	11
	SAB 3	11 0	TOF	0	0	1	1	2	5	7	11
Galil AR / 7.62mm NATO / Assault Rifle / Israel	L 32/41	1 -24	FMJ PEN	20	19	18	16	15	11	7.6	5.5
	W 10.7	2 -13	DC	8	8	8	7	7	7	6	5
		3 -9	JHP PEN	19	18	17	16	14	10	7.3	5.2
	RT 8	4 -7	DC	9	9	9	9	9	8	8	7
	ROF *5	5 -6	AP PEN	28	27	25	23	21	15	11	7.7
		6 -5	DC	8	8	7	7	7	6	6	5
	Cap 25	7 -4									
	AW 2.0	8 -3									
	Mag	9 -2	MA	.5	1	2	4	5	11	16	21
Galil Assault Rifle in 7.62mm NATO. This weapon & the 5.56mm version are also available in a Short Assault Rifle (SAR) variant which is about 5 inches shorter.	KD 10	10 -1	BA	61	53	45	37	32	23	17	13
	SAB 5	11 0	TOF	0	0	1	2	2	5	8	11
Beretta BM 59 / 7.62mm NATO / Assault Rifle / Italy	L 43	1 -24	FMJ PEN	18	18	17	15	14	9.8	7.0	5.0
	W 11.3	2 -14	DC	8	8	8	7	7	6	6	5
		3 -9	JHP PEN	18	17	16	15	13	9.4	6.7	4.8
	RT 8	4 -8	DC	9	9	9	9	9	8	7	7
	ROF *6	5 -6	AP PEN	26	25	24	21	19	14	9.9	7.1
		6 -5	DC	8	7	7	7	7	6	6	5
	Cap 20	7 -4									
	AW 1.5	8 -3									
	Mag	9 -2	MA	.6	1	2	4	6	12	18	24
Standard rifle of the Italian army. Similar to the M1 Garand.	KD 10	10 -1	BA	61	53	45	37	32	23	17	13
	SAB 5	11 0	TOF	0	0	1	2	2	5	8	12
Beretta SC 70 / 5.56mm NATO / Assault Rifle / Italy	L 29/38	1 -23	FMJ PEN	15	14	13	11	10	6.3	4.0	2.5
	W 9.3	2 -12	DC	6	6	6	5	5	4	3	2
		3 -9	JHP PEN	14	14	13	11	9.5	6.0	3.8	2.4
	RT 8	4 -7	DC	8	8	7	7	7	6	4	3
	ROF *5	5 -6	AP PEN	21	20	18	16	14	8.8	5.6	3.5
		6 -5	DC	6	6	6	5	5	4	3	2
	Cap 30	7 -4									
	AW 1.1	8 -3									
	Mag	9 -2	MA	.2	.5	1	2	2	5	7	10
Folding stock version of the Beretta AR 70 rifle. This weapon is replacing the BM 59 and is in service with the Italian Special Forces.	KD 4	10 -1	BA	60	51	42	35	30	20	15	11
	SAB 3	11 0	TOF	0	0	1	1	2	5	8	11
Type 64 / 7.62mm NATO (reduced load) / Assault Rifle / Japan	L 39	1 -24	FMJ PEN	13	13	12	11	9.7	6.7	4.7	3.3
	W 11.3	2 -14	DC	7	7	7	7	6	6	4	3
		3 -9	JHP PEN	13	12	11	10	9.3	6.5	4.5	3.2
	RT 8	4 -8	DC	9	9	8	8	8	7	6	5
	ROF *4	5 -6	AP PEN	19	18	17	15	14	9.5	6.6	4.6
		6 -5	DC	7	7	7	6	6	6	4	3
	Cap 20	7 -4									
	AW 1.6	8 -3									
	Mag	9 -2	MA	.3	.7	1	2	3	7	10	14
Standard rifle of the Japanese army using a reduced load 7.62mm round.	KD 8	10 -1	BA	61	53	44	37	32	22	17	13
	SAB 5	11 0	TOF	0	1	1	2	3	6	10	14
R4 / 5.56mm NATO / Assault Rifle / South Africa	L 29/40	1 -24	FMJ PEN	16	15	14	12	10	6.5	4.1	2.6
	W 11.2	2 -14	DC	6	6	6	6	5	4	3	2
		3 -9	JHP PEN	15	14	13	11	10	6.3	4.0	2.5
	RT 8	4 -7	DC	8	8	8	7	7	6	4	3
	ROF *5	5 -6	AP PEN	22	21	19	17	15	9.2	5.8	3.7
		6 -5	DC	6	6	6	5	5	4	3	2
	Cap 35	7 -4									
	AW 1.8	8 -3									
	Mag	9 -2	MA	.2	.4	.9	1	2	4	6	9
Modified Galil AR. South African Defense Force's standard rifle.	KD 4	10 -1	BA	59	51	42	35	30	20	14	11
	SAB 3		TOF	0	0	1	1	2	5	7	11

Assault Rifles	Physical Data		Aim Time AC	Aim Time Md	Ballistic Data		Range in 2 yard hexes 10	20	40	70	100	200	300	400
SIG 550 / 5.56mm NATO / Assault Rifle / Switzerland	L	30/39	1	-23	FMJ	PEN	15	15	13	12	10	6.4	4.1	2.6
	W	10.1	2	-13		DC	6	6	6	6	5	4	3	2
			3	-9	JHP	PEN	15	14	13	11	9.7	6.2	3.9	2.5
	RT	7	4	-7		DC	8	8	7	7	7	6	4	3
	ROF	**7	5	-6	AP	PEN	21	21	19	16	14	9.1	5.7	3.6
			6	-5		DC	6	6	6	5	5	4	3	2
	Cap	30	7	-4										
	AW	1.1	8	-3		3RB	-6	-1	4	8	11	16	19	21
		Mag	9	-2		MA	.3	.6	1	2	3	6	10	13
	KD	4	10	-1		BA	60	51	42	35	30	20	15	11
	SAB	3	11	0		TOF	0	0	1	1	2	5	8	11
Standard Swiss army rifle adopted in 1984.														
AKM 47 / 7.62 x 39mm / Assault Rifle / USSR	L	35	1	-23	FMJ	PEN	11	11	9.8	8.6	7.5	4.8	3.1	2.0
	W	8.7	2	-12		DC	7	7	6	6	6	5	3	2
			3	-9	JHP	PEN	11	10	9.4	8.3	7.2	4.7	3.0	1.9
	RT	8	4	-7		DC	8	8	8	8	7	7	5	3
	ROF	*5	5	-6	AP	PEN	16	15	14	12	11	6.8	4.4	2.8
			6	-4		DC	7	6	6	6	6	4	3	2
	Cap	30	7	-3										
	AW	1.8	8	-2										
		Mag	9	-1		MA	.4	.8	2	3	4	8	12	17
	KD	7				BA	58	50	40	33	28	18	13	9
	SAB	5				TOF	0	1	1	2	3	6	10	14
New model AK 47. The most widely exported communist weapon.														
AK 74 / 5.45 x 39.5mm / Assault Rifle / USSR	L	37	1	-23	FMJ	PEN	14	13	12	10	9.1	5.8	3.7	2.4
	W	8.7	2	-12		DC	6	6	5	5	4	3	3	2
			3	-9	JHP	PEN	13	13	11	10	8.8	5.6	3.6	2.3
	RT	8	4	-7		DC	7	7	7	7	6	5	4	3
	ROF	*5	5	-6	AP	PEN	19	18	17	15	13	8.2	5.2	3.3
			6	-4		DC	6	5	5	5	4	3	3	2
	Cap	30	7	-3										
	AW	1.1	8	-2										
		Mag	9	-1		MA	.2	.3	.5	.9	1	3	4	5
	KD	4				BA	60	52	43	36	31	21	16	12
	SAB	2				TOF	0	0	1	2	2	5	8	12
New Soviet rifle with an effective muzzle brake. It is replacing the AKM 47.														
Dragunov SVD / 7.62 x 54mm / Sniper Rifle / USSR	L	48	1	-22	FMJ	PEN	23	22	21	19	18	14	10	7.8
	W	10.2	2	-12		DC	8	8	8	8	8	7	7	6
			3	-7	JHP	PEN	22	21	20	19	17	13	9.9	7.5
	RT	8	4	-5		DC	10	9	9	9	9	9	8	8
	ROF	*	5	-4	AP	PEN	32	31	30	27	25	19	15	11
			6	-2		DC	8	8	8	8	7	7	6	6
	Cap	10	7	0										
	AW	.68	8	1										
		Mag	9	2										
	KD	12	10	3		BA	69	62	53	46	41	32	26	22
	SAB	6	11	4		TOF	0	0	1	2	2	5	8	11
The Dragunov is equipped with a PSO-1 4x optical sight whose reticle is illuminated by a small battery. The scope is capable of detecting an infra-red source.														
L1A1 / 7.62mm NATO / Assault Rifle / UK	L	45	1	-24	FMJ	PEN	19	19	17	16	14	10	7.3	5.3
	W	11.0	2	-14		DC	8	8	8	7	7	7	6	5
			3	-9	JHP	PEN	18	18	17	15	14	9.8	7.0	5.1
	RT	8	4	-8		DC	9	9	9	9	9	8	7	7
	ROF	*	5	-6	AP	PEN	27	26	24	22	20	14	10	7.4
			6	-5		DC	8	8	7	7	7	6	6	5
	Cap	20	7	-4										
	AW	1.5	8	-3										
		Mag	9	-2										
	KD	10	10	-1		BA	61	53	45	37	32	23	17	13
	SAB	5	11	0		TOF	0	0	1	2	2	5	8	12
Patterned on the FN FAL, the L1A1 is the standard British service rifle. Normally a semi-automatic weapon, it can easily be modified for fully automatic fire.														
Enfield IW / 5.56mm NATO / Assault Rifle / UK	L	31	1	-23	FMJ	PEN	16	16	14	13	11	7.5	4.9	3.3
	W	9.2	2	-12		DC	6	6	6	6	5	4	3	2
			3	-8	JHP	PEN	16	15	14	12	11	7.2	4.7	3.1
	RT	10	4	-6		DC	8	8	8	7	7	6	5	4
	ROF	*6	5	-5	AP	PEN	23	22	20	18	16	11	7.0	4.6
			6	-4		DC	6	6	6	5	5	4	3	2
	Cap	30	7	-3										
	AW	1.0	8	-2										
		Mag	9	-1		MA	.3	.6	1	2	3	6	9	13
	KD	4	10	0		BA	61	53	44	37	32	22	17	13
	SAB	3	11	1		TOF	0	0	1	1	2	5	8	11
New British rifle replacing the L1A1.														

Assault Rifles	Physical Data		Aim Time AC	Aim Time Md	Ballistic Data		Range in 2 yard hexes 10	20	40	70	100	200	300	400
M 14 / 7.62mm NATO / Assault Rifle / USA	L	44	1	-24	FMJ	PEN	20	19	18	16	15	11	7.7	5.5
	W	11.2	2	-14		DC	8	8	8	7	7	7	6	5
			3	-10	JHP	PEN	19	18	17	16	14	10	7.4	5.3
	RT	8	4	-8		DC	9	9	9	9	9	8	8	7
	ROF	*6	5	-6	AP	PEN	28	27	25	23	21	15	11	7.8
			6	-5		DC	8	8	7	7	7	6	6	5
	Cap	20	7	-4										
	AW	1.5	8	-3										
		Mag	9	-2		MA	.6	1	2	4	6	12	19	25
Standard US army rifle adopted in 1957. The M14 was often replaced by the M16	KD	10	10	-1		BA	61	53	45	37	32	23	17	13
starting in 1962 but remains in service. Most noteably with the US Marine Corp.	SAB	5	12	0		TOF	0	0	1	2	2	5	8	11
M16A1 / 5.56mm NATO / Assault Rifle / USA	L	39	1	-22	FMJ	PEN	17	16	15	13	11	7.1	4.5	2.9
	W	8.0	2	-12		DC	6	6	6	6	5	4	3	2
			3	-9	JHP	PEN	16	15	14	12	11	6.8	4.4	2.8
	RT	8	4	-7		DC	8	8	8	7	7	6	5	3
	ROF	*7	5	-6	AP	PEN	23	22	20	18	16	10	6.4	4.1
			6	-5		DC	6	6	6	6	5	4	3	2
	Cap	30	7	-4										
	AW	1.0	8	-3										
		Mag	9	-2		MA	.4	.8	2	3	4	8	11	15
	KD	4	10	-1		BA	60	51	42	35	30	20	15	11
Standard US army rifle adopted in 1962, it was used extensively in Vietnam.	SAB	3	11	0		TOF	0	0	1	1	2	4	7	10
CAR 16 / 5.56mm NATO / Assault Rifle / USA	L	28/31	1	-22	FMJ	PEN	14	13	12	11	9.3	5.9	3.7	2.3
	W	7.1	2	-11		DC	6	6	6	5	5	4	3	2
			3	-9	JHP	PEN	14	13	12	10	8.9	5.6	3.5	2.2
	RT	8	4	-7		DC	8	7	7	7	7	6	4	3
	ROF	*7	5	-5	AP	PEN	20	19	17	15	13	8.3	5.2	3.3
			6	-4		DC	6	6	5	5	4	3	3	2
	Cap	30	7	-3										
	AW	1.0	8	-2										
		Mag	9	-1		MA	.4	.8	2	3	4	8	11	15
	KD	4				BA	60	51	42	35	30	20	15	11
Shortened M16 with folding stock often used by officers and NCOs.	SAB	3				TOF	0	0	1	1	2	5	8	11
M16A2 / 5.56mm NATO / Assault Rifle / USA	L	39	1	-22	FMJ	PEN	17	16	15	13	12	7.7	5.1	3.4
	W	8.5	2	-12		DC	6	6	6	6	5	4	3	3
			3	-9	JHP	PEN	16	15	14	13	11	7.4	4.9	3.2
	RT	8	4	-7		DC	8	8	8	7	7	6	5	4
	ROF	**7	5	-6	AP	PEN	24	23	21	18	16	11	7.2	4.8
			6	-5		DC	6	6	6	5	5	4	3	2
	Cap	30	7	-4										
	AW	1.0	8	-3		3RB	-5	0	5	9	11	16	19	21
		Mag	9	-2		MA	.4	.8	2	3	4	8	11	15
	KD	4	10	-1		BA	61	53	44	37	32	22	17	13
Late version of the M16A1 with three round burst capability.	SAB	3	11	0		TOF	0	0	1	1	2	5	7	11
M203 / 5.56mm NATO / Assault Rifle - Grenade Launcher / USA	L	39	1	-25	FMJ	PEN	17	16	15	13	11	7.1	4.5	2.9
	W	11.6	2	-15		DC	6	6	6	6	5	4	3	2
			3	-9	JHP	PEN	16	15	14	12	11	6.8	4.4	2.8
	RT	8	4	-8		DC	8	8	8	7	7	6	5	3
	ROF	*7	5	-6	AP	PEN	23	22	20	18	16	10	6.4	4.1
			6	-5		DC	6	6	6	6	5	4	3	2
	Cap	30	7	-4										
	AW	1.0	8	-3										
		Mag	9	-2		MA	.4	.8	2	3	4	8	11	15
	KD	4	10	-1		BA	60	51	42	35	30	20	15	11
M16A1 with 40mm grenade launcher. It replaced the M79 grenade launcher.	SAB	3	11	0		TOF	0	0	1	1	2	4	7	10
M40A1 / 7.62mm NATO / Sniper Rifle / USA	L	44	1	-25	FMJ	PEN	20	19	18	16	15	11	7.7	5.5
	W	14.8	2	-15		DC	8	8	8	7	7	7	6	5
			3	-8	JHP	PEN	19	18	17	16	14	10	7.4	5.3
	RT	16	4	-6		DC	9	9	9	9	9	8	8	7
	ROF	3	5	-4	AP	PEN	28	27	25	23	21	15	11	7.8
			6	-3		DC	8	8	7	7	7	6	6	5
	Cap	5	7	-1										
	AW	.06	8	1										
		Rnd	9	2										
Remington bolt action rifle with heavy barrel and USMC 10x sniper scope. This is	KD	10	10	3		BA	68	59	50	43	38	28	22	18
the standard sniper's weapon of the US Marine Corps.	SAB	5	12	4		TOF	0	0	1	2	2	5	8	11

Machine Guns	Physical Data		Aim Time AC	Aim Time Md	Ballistic Data		Range in 2 yard hexes 10	20	40	70	100	200	300	400
Steyr LSW / 5.56mm NATO / Squad Automatic Weapon / Austria	L	35	1	-24	FMJ	PEN	17	16	15	13	11	7.1	4.5	2.9
	W	12.3	2	-14		DC	6	6	6	6	5	4	3	2
			3	-8	JHP	PEN	16	15	14	12	11	6.8	4.4	2.8
	RT	8	4	-6		DC	8	8	8	7	7	6	5	3
	ROF	*6	5	-5	AP	PEN	23	22	20	18	16	10	6.4	4.1
			6	-4		DC	6	6	6	6	5	4	3	2
	Cap	42	7	-3										
	AW	1.5	8	-2										
		Mag	9	-1		MA	.2	.4	.9	2	2	4	7	9
	KD	4	10	0		BA	60	51	42	35	30	20	15	11
Light Support Weapon version of the Army Universal Gun.	SAB	2	12	1		TOF	0	0	1	1	2	4	7	10
FN MAG / 7.62mm NATO / General Purpose Machine Gun / Belgium	L	50	1	-29	FMJ	PEN	19	19	17	16	14	10	7.4	5.3
	W	27.2	2	-19		DC	8	8	8	7	7	7	6	5
			3	-13	JHP	PEN	18	18	17	15	14	9.8	7.1	5.1
	RT	12	4	-9		DC	9	9	9	9	9	8	7	7
	ROF	*6	5	-8	AP	PEN	27	26	25	22	20	14	10	7.5
			6	-6		DC	8	8	7	7	7	6	6	5
	Cap	50	7	-5										
	AW	3.2	8	-4										
		Blt	10	-2		MA	.3	.6	1	2	3	6	9	12
	KD	10	12	-1		BA	61	53	45	37	32	23	17	13
Reliable weapon considered one of the best GPMGs made.	SAB	3	14	1		TOF	0	0	1	2	2	5	8	11
Type 67 / 7.62 x 54mm / Light Machine Gun / China	L	45	1	-29	FMJ	PEN	23	22	21	20	18	14	10	8.0
	W	27.7	2	-20		DC	8	8	8	8	8	7	7	6
			3	-13	JHP	PEN	22	22	20	19	17	13	10	7.6
	RT	12	4	-9		DC	10	9	9	9	9	9	8	8
	ROF	*5	5	-8	AP	PEN	33	32	30	28	25	19	15	11
			6	-6		DC	8	8	8	8	7	7	6	6
	Cap	100	7	-5										
	AW	5.8	8	-4										
		Blt	9	-3		MA	.3	.6	1	2	3	6	10	13
	KD	12	10	-2		BA	63	56	48	41	36	27	21	17
Chinese designed machine gun adopted in the early 1970s.	SAB	4	12	0		TOF	0	0	1	2	2	5	8	11
AA 7.62 / 7.62mm NATO / General Purpose Machine Gun / France	L	39/45	1	-30	FMJ	PEN	19	19	17	16	14	10	7.4	5.3
	W	28.5	2	-20		DC	8	8	8	7	7	7	6	5
			3	-14	JHP	PEN	19	18	17	15	14	9.9	7.1	5.1
	RT	12	4	-9		DC	9	9	9	9	9	8	7	7
	ROF	*6	5	-8	AP	PEN	27	26	25	22	20	15	10	7.5
			6	-6		DC	8	8	7	7	7	6	6	5
	Cap	100	7	-5										
	AW	6.5	8	-4										
		Blt	9	-3		MA	.3	.6	1	2	3	6	10	13
	KD	10	10	-2		BA	61	53	45	37	32	23	17	13
Standard MG of the French army. AA 52 converted to 7.62mm NATO.	SAB	3	12	0		TOF	0	0	1	2	2	5	8	11
Heckler & Koch 13E / 5.56mm NATO / Squad Automatic Weapon / W Germany	L	41	1	-27	FMJ	PEN	17	16	15	13	12	7.7	5.1	3.4
	W	18.7	2	-17		DC	6	6	6	6	5	4	3	3
			3	-11	JHP	PEN	16	15	14	13	11	7.3	4.9	3.2
	RT	8	4	-8		DC	8	8	8	7	7	6	5	4
	ROF	**6	5	-7	AP	PEN	23	23	21	18	16	11	7.2	4.8
			6	-6		DC	6	6	6	5	5	4	3	2
	Cap	30	7	-4										
	AW	1.1	8	-3		3RB	-8	-3	2	6	9	14	17	19
		Mag	9	-3		MA	.2	.3	.7	1	2	3	5	7
	KD	4	10	-2		BA	61	53	44	37	32	22	17	13
Squad Automatic Weapon version of the HK 13 LMG.	SAB	2	12	0		TOF	0	0	1	1	2	5	7	11
Heckler & Koch 11E / 7.62mm NATO / Squad Automatic Weapon / W Germany	L	41	1	-27	FMJ	PEN	17	17	16	14	13	9.2	6.5	4.7
	W	19.5	2	-17		DC	8	8	7	7	7	6	6	4
			3	-11	JHP	PEN	17	16	15	14	12	8.8	6.3	4.5
	RT	8	4	-9		DC	9	9	9	9	9	8	7	6
	ROF	**7	5	-7	AP	PEN	25	24	22	20	18	13	9.2	6.6
			6	-6		DC	7	7	7	7	7	6	5	4
	Cap	20	7	-5										
	AW	1.5	8	-4		3RB	-4	1	6	10	13	17	20	22
		Mag	9	-3		MA	.4	.8	2	3	4	8	12	16
	KD	10	10	-2		BA	61	53	45	37	32	23	17	13
Squad Automatic W eapon variant of the HK 11A1 LMG.	SAB	4	12	0		TOF	0	0	1	2	2	5	9	12

Machine Guns	Physical Data		Aim Time AC	Aim Time Md	Ballistic Data		Range in 2 yard hexes 10	20	40	70	100	200	300	400
Heckler & Koch 23E / 5.56mm NATO / General Purpose MG / W Germany	L	41	1	-29	FMJ	PEN	16	16	15	13	11	7.6	5.0	3.3
	W	25.5	2	-19		DC	6	6	6	6	5	4	3	3
			3	-12	JHP	PEN	16	15	14	12	11	7.3	4.8	3.2
	RT	12	4	-9		DC	8	8	8	7	7	6	5	4
	ROF	**6	5	-7	AP	PEN	23	22	21	18	16	11	7.1	4.7
			6	-6		DC	6	6	6	5	5	4	3	2
	Cap	200	7	-5										
	AW	6.2	8	-4		3RB	-8	-3	2	6	8	13	16	18
		Blt	9	-3		MA	.2	.3	.7	1	2	3	5	7
	KD	4	10	-2		BA	61	53	44	37	32	22	17	13
New version of the HK 21A1 in 5.56mm NATO.	SAB	2	12	0		TOF	0	0	1	1	2	5	8	11
Heckler & Koch 21E / 7.62mm NATO / General Purpose MG / W Germany	L	45	1	-29	FMJ	PEN	19	19	17	16	14	10	7.4	5.3
	W	27.0	2	-19		DC	8	8	8	7	7	7	6	5
			3	-13	JHP	PEN	19	18	17	15	14	9.9	7.1	5.1
	RT	12	4	-9		DC	9	9	9	9	9	8	7	7
	ROF	**7	5	-8	AP	PEN	27	26	25	22	20	15	10	7.5
			6	-6		DC	8	8	7	7	7	6	6	5
	Cap	100	7	-5										
	AW	6.5	8	-4		3RB	-4	1	6	10	12	17	20	22
		Blt	9	-3		MA	.4	.8	2	3	4	8	12	16
	KD	10	10	-2		BA	61	53	45	37	32	23	17	13
Newest version of the HK 21A1.	SAB	3	12	0		TOF	0	0	1	2	2	5	8	11
MG3 / 7.62mm NATO / General Purpose Machine Gun / W Germany	L	48	1	-30	FMJ	PEN	18	18	17	15	14	9.7	7.0	5.0
	W	30.9	2	-20		DC	8	8	7	7	7	6	6	5
			3	-14	JHP	PEN	18	17	16	14	13	9.3	6.7	4.8
	RT	12	4	-10		DC	9	9	9	9	9	8	7	7
	ROF	*10	5	-8	AP	PEN	26	25	23	21	19	14	9.8	7.0
			6	-6		DC	8	7	7	7	7	6	6	5
	Cap	100	7	-5										
	AW	6.5	8	-4										
		Blt	9	-3		MA	.5	1	2	3	5	10	14	19
	KD	10	10	-2		BA	61	53	45	37	32	23	17	13
The MG3 is based on the World War ii MG42	SAB	3	11	-1		TOF	0	0	1	2	2	5	8	12
Galil ARM / 5.56mm NATO / Squad Automatic Weapon / Israel	L	29/39	1	-24	FMJ	PEN	16	15	14	12	11	6.8	4.3	2.7
	W	11.5	2	-14		DC	6	6	6	6	5	4	3	2
			3	-9	JHP	PEN	15	15	13	12	10	6.5	4.1	2.6
	RT	8	4	-8		DC	8	8	8	7	7	6	5	3
	ROF	*5	5	-6	AP	PEN	22	21	20	17	15	9.5	6.1	3.9
			6	-5		DC	6	6	6	5	5	4	3	2
	Cap	50	7	-4										
	AW	2.2	8	-3										
		Mag	9	-2		MA	.2	.4	.8	1	2	4	6	8
	KD	4	10	-1		BA	60	51	42	35	30	20	15	11
SAW version of the Galil Assault Rifle & light Machine gun (ARM).	SAB	2	11	0		TOF	0	0	1	1	2	5	7	11
Beretta M70-78 / 5.56mm NATO / Squad Automatic Weapon / Italy	L	38	1	-25	FMJ	PEN	16	15	14	12	10	6.6	4.2	2.7
	W	13.4	2	-15		DC	6	6	6	6	5	4	3	2
			3	-10	JHP	PEN	15	14	13	11	10	6.3	4.0	2.6
	RT	8	4	-8		DC	8	8	8	7	7	6	4	3
	ROF	*6	5	-6	AP	PEN	22	21	19	17	15	9.3	5.9	3.8
			6	-5		DC	6	6	6	5	5	4	3	2
	Cap	40	7	-4										
	AW	1.7	8	-3										
		Mag	9	-2		MA	.2	.4	.8	1	2	4	6	8
	KD	4	10	-1		BA	60	51	42	35	30	20	15	11
Squad Automatic Weapon based on the AR70 rifle.	SAB	2	11	0		TOF	0	0	1	1	2	5	8	11
RPK 74 / 5.45 x 39.5mm / Squad Automatic Weapon / USSR	L	45	1	-24	FMJ	PEN	17	16	15	13	12	7.5	4.9	3.2
	W	11.4	2	-14		DC	6	6	6	6	5	4	3	2
			3	-10	JHP	PEN	16	16	14	13	11	7.2	4.7	3.1
	RT	8	4	-8		DC	8	8	8	7	7	6	5	4
	ROF	*5	5	-6	AP	PEN	24	23	21	19	16	11	6.9	4.5
			6	-5		DC	6	6	6	5	5	4	3	2
	Cap	40	7	-4										
	AW	1.5	8	-3										
		Mag	9	-2		MA	.2	.4	.8	1	2	4	6	8
	KD	4	10	-1		BA	61	52	44	36	31	22	16	12
Squad Automatic Weapon version of the AK 74 rifle.	SAB	2	11	0		TOF	0	0	1	1	2	4	7	10

Machine Guns	Physical Data		Aim Time AC	Aim Time Md	Ballistic Data		Range in 2 yard hexes 10	20	40	70	100	200	300	400
RPK / 7.62 x 39mm / Squad Automatic Weapon / USSR	L	41	1	-26	FMJ	PEN	12	11	10	9.1	7.9	5.1	3.3	2.1
	W	15.7	2	-16		DC	7	7	7	6	6	5	3	2
			3	-10	JHP	PEN	11	11	10	8.7	7.6	4.9	3.2	2.1
	RT	10	4	-8		DC	8	8	8	8	8	7	5	3
	ROF	*6	5	-7	AP	PEN	17	16	15	13	11	7.2	4.7	3.0
			6	-5		DC	7	7	6	6	6	5	3	2
	Cap	75	7	-4										
	AW	4.6	8	-3										
		Drm	9	-2		MA	.3	.5	1	2	3	5	8	10
	KD	7	10	-1		BA	58	50	41	33	28	18	13	9
	SAB	3	12	0		TOF	0	1	1	2	3	6	10	14
RP 46 / 7.62 x 54mm / Light Machine Gun / USSR	L	51	1	-32	FMJ	PEN	23	23	22	20	18	14	11	8.1
	W	43.0	2	-22		DC	8	8	8	8	8	7	7	6
			3	-17	JHP	PEN	22	22	21	19	18	13	10	7.7
	RT	12	4	-11		DC	10	10	9	9	9	9	8	8
	ROF	*5	5	-9	AP	PEN	33	32	30	28	26	20	15	11
			6	-7		DC	8	8	8	8	7	7	6	6
	Cap	250	7	-6										
	AW	14.3	8	-5										
		Blt	9	-4		MA	.3	.5	1	2	3	5	8	10
	KD	12	11	-2		BA	63	56	48	41	36	27	21	17
	SAB	3	13	0		TOF	0	0	1	2	2	5	8	11
RPD / 7.62 x 39mm / Light Machine Gun / USSR	L	41	1	-28	FMJ	PEN	11	10	9.4	8.2	7.2	4.6	3.0	1.9
	W	22.0	2	-18		DC	7	7	6	6	6	5	3	2
			3	-11	JHP	PEN	10	9.9	9.0	7.9	6.9	4.4	2.8	1.8
	RT	14	4	-9		DC	8	8	8	8	7	6	5	3
	ROF	*6	5	-7	AP	PEN	15	14	13	12	10	6.5	4.2	2.7
			6	-6		DC	6	6	6	6	6	4	3	2
	Cap	100	7	-5										
	AW	5.3	8	-4										
		Drm	9	-3		MA	.2	.5	.9	2	2	5	7	9
	KD	7	10	-2		BA	58	50	40	33	28	18	13	9
	SAB	2	12	0		TOF	0	1	1	2	3	6	10	15
PKM / 7.62 x 54mm / Light Machine Gun / USSR	L	46	1	-29	FMJ	PEN	23	22	21	19	18	13	10	7.7
	W	25.5	2	-19		DC	8	8	8	8	8	7	7	6
			3	-12	JHP	PEN	22	21	20	18	17	13	9.7	7.4
	RT	12	4	-9		DC	10	9	9	9	9	9	8	8
	ROF	*6	5	-7	AP	PEN	32	31	29	27	25	19	14	11
			6	-6		DC	8	8	8	8	7	7	6	6
	Cap	100	7	-5										
	AW	5.7	8	-4										
		Blt	9	-3		MA	.4	.8	2	3	4	8	12	16
	KD	12	10	-2		BA	63	56	48	41	36	27	21	17
	SAB	4	12	0		TOF	0	0	1	2	2	5	8	11
NSV / 12.7 x 107mm / Heavy Machine Gun / USSR	L	61	1	-33	FMJ	PEN	45	44	43	40	38	32	27	23
	W	116.0	2	-23		DC	10	10	10	10	10	10	10	10
			3	-16	JHP	PEN	43	42	41	39	37	31	26	22
	RT	14	4	-12		DC	10	10	10	10	10	10	10	10
	ROF	*6	5	-8	AP	PEN	63	62	60	57	54	45	38	32
			6	-6		DC	10	10	10	10	10	10	10	10
	Cap	50	7	-4										
	AW	17.0	8	-2										
		Blt	10	0		MA	.3	.5	1	2	3	5	8	10
	KD	49	12	1		BA	64	57	49	43	38	29	23	19
	SAB	3	16	4		TOF	0	0	1	2	2	5	7	10
Enfield LSW / 5.56mm NATO / Squad Automatic Weapon / UK	L	35	1	-26	FMJ	PEN	16	15	14	12	10	6.6	4.2	2.7
	W	15.2	2	-16		DC	6	6	6	6	5	4	3	2
			3	-9	JHP	PEN	15	14	13	11	10	6.3	4.0	2.6
	RT	10	4	-7		DC	8	8	8	7	7	6	4	3
	ROF	*6	5	-6	AP	PEN	22	21	19	17	15	9.3	5.9	3.8
			6	-4		DC	6	6	6	5	5	4	3	2
	Cap	30	7	-3										
	AW	1.0	8	-2										
		Mag	9	-1		MA	.2	.4	.7	1	2	4	6	7
	KD	4	10	0		BA	60	51	42	35	30	20	15	11
	SAB	2	12	2		TOF	0	0	1	1	2	5	8	11

RPK / 7.62 x 39mm / Squad Automatic Weapon / USSR

This SAW has replaced the RPD in the Soviet arsenal.

RP 46 / 7.62 x 54mm / Light Machine Gun / USSR

Developed in 1946, it is still in service in the third world.

RPD / 7.62 x 39mm / Light Machine Gun / USSR

Obsolete in the Soviet army, it is still found in Africa and Asia.

PKM / 7.62 x 54mm / Light Machine Gun / USSR

Standard LMG in the Soviet army. It has replaced the RP 46.

NSV / 12.7 x 107mm / Heavy Machine Gun / USSR

The NSV was developed in 1969 and is found in all Soviet and Warsaw Pact armies. It is used as a heavy ground support, air defense, and tank air defense weapon. In the ground role it is mounted on a tripod and fitted with a shoulder stock, pistol grip, and optical sight (not shown).

Enfield LSW / 5.56mm NATO / Squad Automatic Weapon / UK

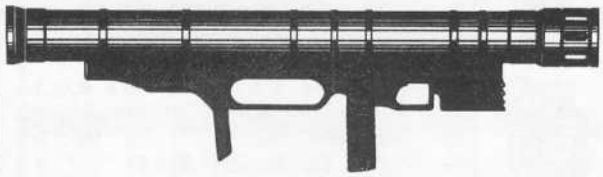
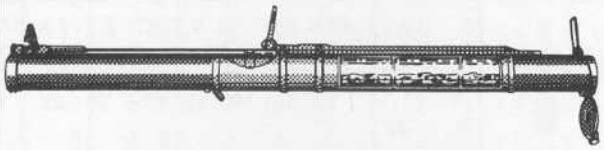
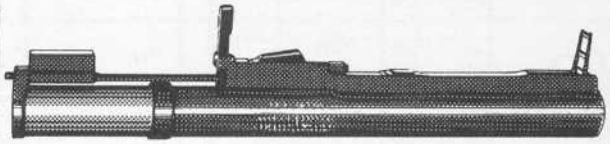
Squad Automatic Weapon variant of the Enfield IW rifle.

Machine Guns	Physical Data		Aim Time AC	Aim Time Md	Ballistic Data		Range in 2 yard hexes 10	20	40	70	100	200	300	400
Bren L4 / 7.62mm NATO / Light Machine Gun / UK	L	45	1	-28	FMJ	PEN	18	18	17	15	14	9.8	7.0	5.0
	W	23.6	2	-19		DC	8	8	8	7	7	6	6	5
			3	-12	JHP	PEN	18	17	16	15	13	9.4	6.7	4.8
	RT	8	4	-9		DC	9	9	9	9	9	8	7	7
	ROF	*4	5	-7	AP	PEN	26	25	24	21	19	14	9.9	7.1
			6	-6		DC	8	7	7	7	7	6	6	5
	Cap	30	7	-5										
	AW	2.6	8	-4										
		Mag	9	-3		MA	.2	.4	.8	1	2	4	6	8
	KD	10	11	-1		BA	61	53	45	37	32	23	17	13
L4 series Bren gun in 7.62mm NATO. Used by all British forces.	SAB	3	13	1		TOF	0	0	1	2	2	5	8	12
L7A2 / 7.62mm NATO / General Purpose Machine Gun / UK	L	49	1	-31	FMJ	PEN	19	19	17	16	14	10	7.3	5.3
	W	32.8	2	-21		DC	8	8	8	7	7	7	6	5
			3	-15	JHP	PEN	18	18	17	15	14	9.8	7.0	5.1
	RT	12	4	-10		DC	9	9	9	9	9	8	7	7
	ROF	*7	5	-8	AP	PEN	27	26	24	22	20	14	10	7.4
			6	-7		DC	8	8	7	7	7	6	6	5
	Cap	100	7	-5										
	AW	6.5	8	-4										
		Blt	10	-3		MA	.3	.6	1	2	3	6	10	13
	KD	10	12	-1		BA	61	53	45	37	32	23	17	13
Based on the FN MAG, the L7A2 is the standard GPMG of the British army.	SAB	3	15	1		TOF	0	0	1	2	2	5	8	12
M249 Minimi / 5.56mm NATO / Squad Automatic Weapon / USA	L	41	1	-28	FMJ	PEN	15	15	14	12	11	7.0	4.6	3.0
	W	22.0	2	-18		DC	6	6	6	6	5	4	3	2
			3	-11	JHP	PEN	15	14	13	12	10	6.7	4.4	2.9
	RT	14	4	-9		DC	8	8	7	7	7	6	5	3
	ROF	*7	5	-7	AP	PEN	22	21	19	17	15	9.9	6.5	4.3
			6	-6		DC	6	6	6	5	5	4	3	2
	Cap	200	7	-4										
	AW	6.9	8	-3										
		Blt	9	-2		MA	.2	.3	.7	1	2	3	5	7
	KD	4	10	-1		BA	61	53	44	37	32	22	17	13
Belgium designed Squad Automatic Weapon adopted by the US army.	SAB	2	12	0		TOF	0	0	1	2	2	5	8	11
M60 / 7.62mm NATO / General Purpose Machine Gun / USA	L	44	1	-30	FMJ	PEN	20	19	18	16	15	11	7.7	5.5
	W	29.7	2	-20		DC	8	8	8	7	7	7	6	5
			3	-14	JHP	PEN	19	19	17	16	14	10	7.4	5.3
	RT	12	4	-10		DC	9	9	9	9	9	8	8	7
	ROF	*5	5	-8	AP	PEN	28	27	25	23	21	15	11	7.8
			6	-6		DC	8	8	7	7	7	6	6	5
	Cap	100	7	-5										
	AW	6.5	8	-4										
		Blt	9	-3		MA	.3	.5	1	2	3	5	8	10
	KD	10	10	-2		BA	61	53	45	37	32	23	17	13
Adopted in the 1950s, this is the standard GPMG of US forces.	SAB	3	12	0		TOF	0	0	1	2	2	5	8	11
M60E3 / 7.62mm NATO / General Purpose Machine Gun / USA	L	42	1	-29	FMJ	PEN	20	20	18	17	15	11	7.8	5.6
	W	25.5	2	-19		DC	8	8	8	7	7	7	6	5
			3	-12	JHP	PEN	19	19	18	16	14	10	7.5	5.4
	RT	12	4	-9		DC	9	9	9	9	9	8	8	7
	ROF	*5	5	-7	AP	PEN	28	28	26	23	21	15	11	7.9
			6	-6		DC	8	8	8	7	7	6	6	5
	Cap	100	7	-5										
	AW	6.5	8	-4										
		Blt	9	-3		MA	.3	.6	1	2	3	6	9	12
	KD	10	10	-2		BA	61	53	45	37	33	23	17	13
Light version of the M60 adopted by the US Navy and Marine Corps.	SAB	4	12	0		TOF	0	0	1	2	2	5	8	11
M2HB / .50 Browning / Heavy Machine Gun / USA	L	65	1	-37	FMJ	PEN	40	39	37	35	34	28	23	19
	W	157.5	2	-27		DC	10	10	10	10	10	10	10	10
			3	-21	JHP	PEN	38	37	36	34	32	27	22	19
	RT	14	4	-17		DC	10	10	10	10	10	10	10	10
	ROF	*5	5	-14	AP	PEN	56	55	53	50	47	39	33	27
			6	-10		DC	10	10	10	10	10	10	10	10
	Cap	105	7	-8										
	AW	28.8	8	-6										
		Blt	10	-4		MA	.2	.3	.6	1	2	3	5	6
	KD	45	12	-2		BA	64	57	49	42	37	28	22	19
Standard US Heavy Machine Gun in service since 1933.	SAB	2	14	0		TOF	0	0	1	2	2	5	8	11

Shotguns	Physical Data	Aim Time AC Md	Ballistic Data		Target Range in 2 Yard Hexes 1	2	4	6	8	10	15	20	30	40	80
Franchi SPAS 12 / 12 Gauge Shotgun / Italy	L 28/37	1 -23	APS	PEN	21	21	21	21	21	21	21	20	20	19	18
	W 10.1	2 -13		DC	9	9	9	9	9	9	9	9	9	9	8
		3 -9													
	RT 30	4 -7	Shot	PEN	5.3	1.6	1.5	1.5	1.4	1.4	1.3	1.2	1.1	.9	.5
	ROF *	5 -6	(00)	DC	8	3	3	3	3	3	2	2	2	2	1
		6 -4		SALM	-13	-8	-3	0	2	4	7	9	12	14	19
	Cap 7	7 -3	12	BPHC		*11	*10	*9	*5	*4	*2	94	42	24	5
	AW .13	8 -2		PR	.0	.0	.0	.1	.1	.1	.2	.2	.3	.4	.9
	Rnd	9 -1													
Special Purpose Automatic Shotgun for police and military. The APS entry is for a special Armor Piercing Slug.	KD 23			BA	71	61	52	46	42	39	33	29	23	19	9
	SAB 10			TOF	0	0	0	0	0	0	1	1	1	2	4
Olin - Heckler & Koch CAWS / 12 Gauge Shotgun / USA	L 30	1 -24	Slug	PEN	7.0	7.0	6.9	6.9	6.8	6.7	6.6	6.5	6.3	6.0	5.2
	W 11.6	2 -14		DC	10	10	10	10	10	10	9	9	9	9	8
		3 -9													
	RT 8	4 -7	Shot	PEN	5.6	2.4	2.4	2.3	2.3	2.2	2.1	2.0	1.7	1.5	.9
	ROF *	5 -5	(000)	DC	8	4	4	4	4	4	3	3	3	3	2
		6 -4		SALM	-13	-8	-3	0	2	4	7	9	11	14	19
	Cap 10	7 -3	8	BPHC		*7	*7	*6	*4	*2	*1	66	30	16	3
	AW 2.1	8 -2		PR	.0	.0	.0	.1	.1	.1	.2	.2	.3	.4	.9
	Mag	9 -1													
	KD 23	10 0		BA	67	58	48	42	38	35	29	25	19	15	5
Close Assault Weapon System uses a belted brass cartridge.	SAB 10	12 2		TOF	0	0	0	0	0	0	1	1	1	2	4
Mossberg Bullpup 12 / 12 Gauge Shotgun / USA	L 31	1 -23	Slug	PEN	7.5	7.4	7.4	7.3	7.3	7.2	7.1	7.0	6.7	6.5	5.6
	W 9.4	2 -12		DC	10	10	10	10	10	10	10	10	9	9	9
		3 -9													
	RT 34	4 -7	Shot	PEN	5.4	1.7	1.6	1.6	1.6	1.5	1.4	1.3	1.1	1.0	.6
	ROF 2	5 -6	(00)	DC	8	3	3	3	3	3	2	2	2	2	1
		6 -5		SALM	-14	-9	-4	-1	1	2	5	7	10	12	17
	Cap 8	7 -4	12	BPHC		*11	*10	*9	*7	*5	*2	*1	62	35	8
	AW .13	8 -3		PR	.0	.0	.0	.1	.1	.1	.1	.2	.3	.4	.7
	Rnd	9 -2													
Mossberg 500 action in a military style stock. This weapon is designed for military and law enforcement use.	KD 24	10 -1		BA	67	58	48	42	38	35	29	25	19	15	5
	SAB 11			TOF	0	0	0	0	0	0	1	1	1	2	4
Remington M870 / 12 Gauge Shotgun / USA	L 42	1 -23	Slug	PEN	7.7	7.7	7.6	7.5	7.5	7.4	7.3	7.2	6.9	6.7	5.7
	W 8.8	2 -12		DC	10	10	10	10	10	10	10	10	10	9	9
		3 -9													
	RT 30	4 -7	Shot	PEN	5.4	1.7	1.7	1.6	1.6	1.6	1.4	1.4	1.2	1.0	.6
	ROF 2	5 -6	(00)	DC	8	3	3	3	3	3	2	2	2	2	1
		6 -4		SALM	-14	-9	-4	-1	1	2	5	7	10	12	17
	Cap 7	7 -3	12	BPHC		*11	*10	*9	*7	*5	*2	*1	62	35	8
	AW .13	8 -2		PR	.0	.0	.0	.1	.1	.1	.1	.2	.3	.4	.7
	Rnd														
US Marine Corps version of the Remington Model 870. It was adopted in 1966 and has a standard M7 bayonet mounting lug.	KD 25			BA	67	58	48	42	38	35	29	25	19	15	5
	SAB 12			TOF	0	0	0	0	0	0	1	1	1	2	4
High Standard M10B / 12 Gauge Shotgun / USA	L 27	1 -23	Slug	PEN	7.0	7.0	6.9	6.9	6.8	6.7	6.6	6.5	6.3	6.0	5.2
	W 9.5	2 -12		DC	10	10	10	10	10	10	9	9	9	9	8
		3 -9													
	RT 22	4 -7	Shot	PEN	5.3	1.6	1.5	1.5	1.4	1.4	1.3	1.2	1.1	.9	.5
	ROF *	5 -6	(00)	DC	8	3	3	2	2	2	2	2	2	2	1
		6 -4		SALM	-13	-8	-3	0	2	4	7	9	12	14	19
	Cap 5	7 -3	12	BPHC		*11	*10	*9	*5	*3	*2	93	42	23	5
	AW .13	8 -2		PR	.0	.0	.0	.1	.1	.1	.2	.2	.3	.4	.9
	Rnd														
	KD 23			BA	67	58	48	42	38	35	29	25	19	15	5
Compact shotgun for police tactical teams.	SAB 10			TOF	0	0	0	0	0	0	1	1	1	2	4
Atchisson Assault 12 / 12 Gauge Shotgun / USA	L 39	1 -26	Slug	PEN	7.0	7.0	6.9	6.9	6.8	6.7	6.6	6.5	6.3	6.0	5.2
	W 16.1	2 -16		DC	10	10	10	10	10	10	9	9	9	9	8
		3 -10													
	RT 14	4 -8	Shot	PEN	5.4	1.6	1.5	1.5	1.4	1.4	1.3	1.2	1.1	.9	.5
	ROF *4	5 -7	(00)	DC	8	3	3	2	2	2	2	2	2	2	1
		6 -5		SALM	-13	-8	-3	0	2	4	7	9	12	14	19
	Cap 20	7 -4	12	BPHC		*11	*10	*9	*5	*3	*2	93	42	23	5
	AW 4.6	8 -3		PR	.0	.0	.0	.1	.1	.1	.2	.2	.3	.4	.9
	Drm	9 -2													
Fully automatic, high capacity, drum fed shotgun. Very few were produced and it has not been adopted by any military.	KD 23	10 -1		MA	.1	.2	.3	.5	.7	.8	1	2	2	3	7
	SAB 8	12 0		TOF	0	0	0	0	0	0	1	1	1	2	4

Explosive Weapons	Physical Data	Aim Time AC Md	Ballistic Data	Target Range 40	100	200	400	Explosive Data	Burst Range in Hexes 0	1	2	3	5	10
H & K 69A1 / 40mm Grenade Launcher / W Germany	L 18/27	1 -19	HEAT PEN	288	288	288		PEN	1.6	1.4	1.0	.7	.4	
	W 4.1	2 -10	DC	10	10	10		DC	1	1	1	1	1	
		3 -8						BSHC	*2	47	11	4	1	
	RT 10	4 -6						BC	241	71	23	12	5	1
	ROF -	5 -5												
		6 -4	HE PEN	2.0	2.0	2.0		PEN	1.4	1.2	.8	.6	.3	
	Cap 1	7 -3	DC	10	10	10		DC	1	1	1	1	1	
	AW .51							BSHC	*3	73	17	7	2	
	Rnd							BC	250	74	23	12	5	1
	MR 200		AOI		1	4								
			BA	23	10	1								
Compact grenade launcher with folding stock. The weapon is of single shot, break-action design very similar to the US M79.	SAB 11		TOF	11	33	80								
H & K 79 / 40mm Grenade Launcher / W Germany	L 40	1 -26	HEAT PEN	288	288	288		PEN	1.6	1.4	1.0	.7	.4	
	W 14.9	2 -16	DC	10	10	10		DC	1	1	1	1	1	
		3 -10						BSHC	*2	47	11	4	1	
	RT 12	4 -7						BC	241	71	23	12	5	1
	ROF -	5 -6												
		6 -4	HE PEN	2.0	2.0	2.0		PEN	1.4	1.2	.8	.6	.3	
	Cap 1		DC	10	10	10		DC	1	1	1	1	1	
	AW .51							BSHC	*3	73	17	7	2	
	Rnd							BC	250	74	23	12	5	1
	MR 200		AOI		1	4								
			BA	23	10	1								
This grenade launcher fits on all G3 or G41 rifles except the short K models. The barrel drops down for loading.	SAB 7		TOF	11	33	80								
Armscor 6 / 40mm Grenade Launcher / South Africa	L 22/31	1 -26	HEAT PEN	288	288	288		PEN	1.6	1.4	1.0	.7	.4	
	W 15.0	2 -16	DC	10	10	10		DC	1	1	1	1	1	
		3 -10						BSHC	*2	47	11	4	1	
	RT 24	4 -8						BC	241	71	23	12	5	1
	ROF *	5 -6												
		6 -5	HE PEN	2.0	2.0	2.0		PEN	1.6	1.4	1.0	.7	.4	
	Cap 6	7 -3	DC	10	10	10		DC	1	1	1	1	1	
	AW .51							BSHC	*3	62	15	6	2	
	Rnd							BC	273	80	25	13	6	1
	MR 200		AOI		1	4								
			BA	23	10	1								
Six shot semi-automatic grenade launcher using a revolver type feed. Provided with collimating sight and artificial boresight.	SAB 7		TOF	11	33	80								
AK 74 with 30mm Grenade Launcher / USSR	L 37	1 -23	HE PEN	2.5	2.5	2.5		PEN	2.4	2.2	1.8	1.5	1.0	.4
	W 10.1	2 -13	DC	10	10	10		DC	2	2	2	2	1	1
		3 -9						BSHC	*2	58	14	6	1	-2
	RT 12	4 -7						BC	250	74	23	12	5	1
	ROF -	5 -5												
	Cap 1													
	AW .56													
	Rnd													
	MR 200		AOI		1	4								
			BA	23	5	-4								
AK 74 rifle with 30mm grenade launcher. This launcher's function is similar to the US M203.	SAB 8		TOF	11	35	81								
AGS-17 Plamya / 30mm Grenade Launcher / USSR	L 33	1 -38	HE PEN	2.5	2.5	2.5	2.5	PEN	2.4	2.2	1.8	1.5	1.0	.4
	W 140.5	2 -28	DC	10	10	10	10	DC	2	2	2	2	1	1
		3 -22						BSHC	*2	58	14	6	1	-2
	RT 12	4 -18						BC	250	74	23	12	5	1
	ROF *1	5 -15												
		6 -10												
	Cap 29	7 -8												
	AW 24.0	8 -6												
	Drm	9 -5												
		10 -4	AOI				1							
	MR 950	11 -3	MA	.2	.4	.8	2							
		12 -2	BA	32	19	9	0							
Introduced in 1975 as a company level support weapon.	SAB 1	13 -1	TOF	4	11	24	57							

Explosive Weapons	Physical Data	Aim Time AC Md	Ballistic Data Target Range 40 100 200 400	Explosive Data Burst Range in Hexes 0 1 2 3 5 10
M79 / 40mm Grenade Launcher / USA	L 29	1 -21	HEAT PEN 288 288 288	PEN 1.6 1.4 1.0 .7 .4
	W 6.5	2 -11	DC 10 10 10	DC 1 1 1 1 1
		3 -8		BSHC *2 47 11 4 1
	RT 10	4 -7		BC 241 71 23 12 5 1
	ROF -	5 -5		
		6 -4	HE PEN 2.1 2.1 2.1	PEN 1.6 1.4 1.0 .7 .4
	Cap 1	7 -3	DC 10 10 10	DC 1 1 1 1 1
	AW .51			BSHC *3 62 15 6 2
	Rnd			BC 273 80 25 13 6 1
	MR 200		AOI 1 4	
Accurate breech loading grenade launcher which has been replaced by the M203.			BA 23 10 1	
	SAB 11		TOF 11 33 80	
M203 / M16 with 40mm Grenade Launcher / USA	L 39	1 -24	HEAT PEN 288 288 288	PEN 1.6 1.4 1.0 .7 .4
	W 11.6	2 -14	DC 10 10 10	DC 1 1 1 1 1
		3 -9		BSHC *2 47 11 4 1
	RT 12	4 -7		BC 241 71 23 12 5 1
	ROF -	5 -6		
		6 -4	HE PEN 2.1 2.1 2.1	PEN 1.6 1.4 1.0 .7 .4
	Cap 1		DC 10 10 10	DC 1 1 1 1 1
	AW .51			BSHC *3 62 15 6 2
	Rnd			BC 273 80 25 13 6 1
	MR 200		AOI 1 4	
Slide action breech loading grenade launcher fitted to an M16 rifle. This weapon replaced the M79 in 1970.			BA 23 10 1	
	SAB 8		TOF 11 33 80	
M174 / 40mm Grenade Launcher / USA	L 28	1 -32	HEAT PEN 288 288 288	PEN 1.6 1.4 1.0 .7 .4
	W 40.8	2 -22	DC 10 10 10	DC 1 1 1 1 1
		3 -16		BSHC *2 47 11 4 1
	RT 14	4 -11		BC 241 71 23 12 5 1
	ROF *3	5 -8		
		6 -7	HE PEN 2.1 2.1 2.1	PEN 1.6 1.4 1.0 .7 .4
	Cap 12	7 -5	DC 10 10 10	DC 1 1 1 1 1
	AW 9.9	8 -4		BSHC *3 62 15 6 2
	Drm	9 -3		BC 273 80 25 13 6 1
		10 -2	AOI 1 4	
	MR 200	11 -1	MA .7 2 4	
			BA 23 10 1	
Automatic grenade launcher firing standard 40mm grenades.	SAB 4		TOF 11 33 80	
M19 / 40mm Grenade Launcher / USA	L 41	1 -40	HEAT PEN 288 288 288 288	PEN 1.6 1.4 1.0 .7 .4
	W 137.2	2 -30	DC 10 10 10 10	DC 1 1 1 1 1
		3 -25		BSHC *2 47 11 4 1
	RT 14	4 -21		BC 241 71 23 12 5 1
	ROF *3	5 -17		
		6 -15	HE PEN 2.6 2.6 2.6 2.6	PEN 2.5 2.4 2.2 2.0 1.6 1.0
	Cap 50	7 -10	DC 10 10 10 10	DC 3 3 3 3 2 1
	AW 45.2	8 -8		BSHC 6 1 -3 -6 -9 -15
	Blt	9 -6		BC 353 100 31 16 7 2
		10 -5	AOI 1	
	MR 900	11 -3	MA .8 2 4 8	
			BA 27 14 5 -4	
This grenade launcher uses its own longer 40mm grenades.	SAB 4		TOF 3 9 21 52	
PZF 44 2A1 Lanze / 66mm RPG / W Germany	L 35/46	1 -28	HEAT PEN 89h 89h 89h 89h	PEN 5.2 5.1 4.8 4.6 4.2 3.4
	W 22.7	2 -18	DC 10 10 10 10	DC 7 7 7 7 6 6
		3 -11		BSHC 15 3 0 -3 -7 -12
	RT 28	4 -9		BC 11h 252 72 36 16 5
	ROF -	5 -7		
		6 -6	HE PEN 6.1 6.1 6.1 6.1	PEN 6.0 5.9 5.6 5.4 4.9 3.9
	Cap 1	7 -4	DC 10 10 10 10	DC 7 7 7 7 7 6
	AW 5.5	8 -3		BSHC 15 3 0 -3 -7 -12
	Rnd	9 -2		BC 13h 287 81 40 17 6
		10 -1		
	MR 850		AOI 1	
Reloadable Rocket Propelled Grenade (RPG) launcher similar to the Soviet RPG 7V.			BA 14 2 -7 -17	
			TOF 4 9 20 45	

Explosive Weapons	Physical Data	Aim Time AC Md	Ballistic Data	Target Range 40	100	200	400	Explosive Data	Burst Range in Hexes 0	1	2	3	5	10
Armbrust / 67mm Anti-Tank Rocket / W Germany	L 34	1 -26	HEAT PEN	66h	66h	66h	66h	PEN	5.2	5.1	4.8	4.6	4.2	3.4
	W 16.0	2 -16	DC	10	10	10	10	DC	7	7	7	7	6	6
		3 -10						BSHC	15	3	0	-3	-7	-12
	RT 14	4 -8						BC	11h	252	72	36	16	5
	ROF -	5 -6												
		6 -5	HE PEN	4.2	4.2	4.2	4.2	PEN	1.4	1.2	.8	.6	.3	
	Cap 1	7 -4	DC	10	10	10	10	DC	1	1	1	1	1	
		8 -3						BSHC	*6	*2	38	16	5	
		9 -2						BC	11h	252	72	36	16	5
This one-shot disposable rocket launcher uses a counter mass to eliminate back flash & blast. The launch explosive is contained in the tube. Plastic flakes are driven out the back of the tube for the recoilless effect.		10 -1												
	MR 850		AOI				1							
			BA	12	-1	-10	-20							
			TOF	4	10	21	50							
RPG 18 / 64mm Anti-Tank Rocket Launcher / USSR	L 28/39	1 -25	HEAT PEN	59h	59h	59h	59h	PEN	4.8	4.7	4.5	4.3	3.9	3.1
	W 14.3	2 -15	DC	10	10	10	10	DC	7	7	6	6	6	5
		3 -10						BSHC	15	3	0	-3	-6	-12
	RT 20	4 -8						BC	10h	232	67	34	15	5
	ROF -	5 -6												
		6 -5												
	Cap 1	7 -4												
		8 -2												
This disposable rocket launcher is similar to the US M72 LAW. It has pop up sights and must be extended before firing. The rocket motor completes its burn while still in the launch tube and it fires a 64mm shaped charge warhead.	MR 600		AOI			1	2							
			BA	16	5	-5	-14							
			TOF	7	17	36	78							
RPG 7V / 85mm Rocket Propelled Grenade / USSR	L 39/54	1 -28	HEAT PEN	72h	72h	72h	72h	PEN	7.2	7.1	6.9	6.7	6.2	5.2
	W 20.4	2 -18	DC	10	10	10	10	DC	8	8	8	8	8	7
		3 -11						BSHC	11	2	-1	-4	-8	-13
	RT 15	4 -9						BC	20h	393	105	52	22	7
	ROF -	5 -7												
		6 -6	HE PEN	8.2	8.2	8.2	8.2	PEN	8.1	8.0	7.7	7.5	7.0	5.9
	Cap 1	7 -5	DC	10	10	10	10	DC	9	9	9	8	8	8
	AW 5.0	8 -4						BSHC	11	2	-1	-4	-8	-13
	Rnd	9 -3						BC	24h	441	115	57	24	8
The RPG 7 is the standard man portable short range anti-tank weapon of the Soviet army and Warsaw Pact. The Reload Time assumes the rocket already has its propellant charge screwed into the warhead.		10 -2												
	MR 500	11 -1	AOI											
		12 0	BA	15	4	-6	-15							
			TOF	2	6	14	30							
LAW 80 / 94mm Anti-Tank Rocket / UK	L 39/59	1 -28	HEAT PEN	17k	17k	17k	17k	PEN	8.3	8.2	8.0	7.7	7.3	6.2
	W 21.2	2 -18	DC	10	10	10	10	DC	9	9	9	9	9	8
		3 -11						BSHC	10	2	-1	-4	-8	-13
	RT 20	4 -9						BC	26h	480	123	60	26	9
	ROF -	5 -7												
		6 -5												
	Cap 1	7 -4												
		8 -3												
		9 -2												
One shot disposable short range anti-tank weapon which uses a built-in low velocity 9mm spotting rifle. The spotting rifle has a 5 round capacity. The bullets have a tracer and flash warhead for recording a hit on target, thus determining its range.		10 -1												
	MR 600		AOI			1	2							
			BA	8	-4	-14	-23							
			TOF	5	15	35	85							
M72 A2 LAW / 66mm Light Anti-Tank Weapon / USA	L 26/35	1 -20	HEAT PEN	68h	68h	68h	68h	PEN	5.0	4.9	4.7	4.5	4.1	3.3
	W 5.2	2 -11	DC	10	10	10	10	DC	7	7	7	7	6	5
		3 -8						BSHC	15	3	0	-3	-7	-12
	RT 14	4 -6						BC	11h	245	70	36	15	5
	ROF -	5 -5												
		6 -4												
	Cap 1	7 -3												
		8 -2												
This man portable, one shot, disposable rocket launcher is a standard short range anti-tank weapon in the US and NATO armies. The Reload Time includes the time to extend the launch tube and deploy the sights.	MR 650		AOI			1	1							
			BA	11	-1	-11	-20							
			TOF	5	14	32	75							

Grenades and Explosives / Tech Level 13

Grenade/Explosive	Physical Data		Explosion Data Range From Burst in Hexes	C	0	1	2	3	5	10
HG 78 Frag Grenade Austria	L	4.5	PEN	2.6	1.4	1.2	.8	.6	.3	
	W	1.2	DC	10	1	1	1	1	1	
	AT	3	BSHC	*2k	*23	*6	*1	64	22	
	FL	2	BC	60h	414	114	35	18	8	3
	R	14								
OF HG 78 Blast Grenade Austria	L	4.5	PEN	2.6						
	W	.5	DC	10						
	AT	3								
	FL	2	BC	60h	414	114	35	18	8	3
	R	21								
HG 80 Mini Grenade Austria	L	3.0	PEN	1.6	1.4	1.2	.8	.6	.3	
	W	.4	DC	10	1	1	1	1	1	
	AT	3	BSHC	*3h	*4	*1	25	11	3	
	FL	2	BC	14h	158	49	16	8	4	1
	R	25								
NR 423 Frag Grenade Belgium	L	3.2	PEN	2.5	1.8	1.6	1.2	1.0	.6	
	W	.5	DC	10	2	2	1	1	1	
	AT	3	BSHC	*3h	*4	94	23	10	3	
	FL	2	BC	52h	376	105	33	17	7	2
	R	21								
NR 446 Blast Grenade Belgium	L	3.2	PEN	2.8						
	W	.6	DC	10						
	AT	3								
	FL	2	BC	73h	468	126	39	20	9	3
	R	20								
Type 59 Frag Grenade China	L	4.5	PEN	3.1	2.9	2.7	2.3	2.0	1.4	.7
	W	.7	DC	10	3	3	2	2	2	1
	AT	3	BSHC	*2h	*3	69	16	7	2	-1
	FL	2	BC	94h	554	145	44	22	10	3
	R	18								
Type 82 Frag Grenade China	L	3.3	PEN	3.3	3.2	2.9	2.5	2.2	1.6	.8
	W	.6	DC	10	3	3	3	2	2	1
	AT	5	BSHC	*90	*1	31	7	3	0	-4
	FL	2	BC	53h	383	107	33	17	7	2
	R	20								
DF 37 Frag Grenade France	L	3.9	PEN	2.4	1.9	1.9	1.7	1.6	1.4	1.0
	W	1.2	DC	10	3	3	3	3	3	2
	AT	3	BSHC	*30	41	10	2	0	-3	-8
	FL	2	BC	49h	360	101	32	16	7	2
	R	14								
OF 37 Blast Grenade France	L	3.7	PEN	2.8						
	W	.3	DC	10						
	AT	3								
	FL	2	BC	77h	485	130	40	20	9	3
	R	27								
MDN 21 Frag Grenade W Germany	L	3.3	PEN	2.2	1.4	1.2	.8	.6	.3	
	W	.5	DC	10	1	1	1	1	1	
	AT	3	BSHC	*7h	*9	*2	57	25	8	
	FL	2	BC	40h	316	91	28	15	6	2
	R	21								
DM 51 Frag Grenade W Germany	L	3.9	PEN	2.7	1.4	1.1	.8	.5		
	W	1.0	DC	10	1	1	1	1		
	AT	3	BSHC	*2k	*27	*7	*2	75		
	FL	2	BC	69h	453	123	38	19	8	3
	R	15								
M26 A2 Frag Grenade Israel	L	4.2	PEN	3.3	2.4	2.2	1.8	1.5	1.0	.4
	W	.9	DC	10	2	2	2	2	1	1
	AT	3	BSHC	*3h	*4	*1	25	11	3	0
	FL	2	BC	13k	684	171	51	26	11	4
	R	15								

Grenade/Explosive	Physical Data		Explosion Data Range From Burst in Hexes	C	0	1	2	3	5	10
# 14 Blast Grenade Israel	L	5.3	PEN	3.7						
	W	.7	DC	10						
	AT	3								
	FL	2	BC	17k	840	202	59	30	13	4
	R	18								
MU 50 Frag Grenade Italy	L	2.8	PEN	2.2	1.4	1.2	.8	.6	.3	
	W	.4	DC	10	1	1	1	1	1	
	AT	3	BSHC	*4h	*6	*1	36	15	5	
	FL	2	BC	36h	295	85	27	14	6	2
	R	23								
RGD 5 Frag Grenade USSR	L	4.5	PEN	3.1	2.9	2.7	2.3	2.0	1.4	.7
	W	.7	DC	10	3	3	2	2	2	1
	AT	3	BSHC	*2h	*3	69	16	7	2	-1
	FL	2	BC	94h	554	145	44	22	10	3
	R	18								
RKG 3M Anti-Tank Grenade USSR	L	14.3	PEN	28h	10	9.7	9.2	8.7	7.8	6.0
	W	2.4	DC	10	8	8	8	7	7	6
	AT	3	BSHC	*9	12	2	-1	-4	-7	-12
	FL	1	BC	54k	19h	379	102	50	22	7
	R	10								
L2 A2 Frag Grenade UK	L	3.3	PEN	3.5	2.4	2.2	1.8	1.5	1.0	.4
	W	.9	DC	10	2	2	2	2	1	1
	AT	3	BSHC	*2h	*3	77	19	8	2	-1
	FL	2	BC	15k	747	184	55	28	12	4
	R	16								
M 67 Frag Grenade USA	L	3.5	PEN	5.0	4.9	4.8	4.5	4.2	3.7	2.6
	W	.9	DC	10	6	6	5	5	5	4
	AT	3	BSHC	*23	31	7	1	0	-4	-9
	FL	2	BC	16k	779	190	56	29	12	4
	R	16								
M 68 Frag Grenade USA	L	3.5	PEN	5.1	5.0	4.8	4.5	4.2	3.7	2.7
	W	.9	DC	10	6	6	5	5	5	4
	AT	3	BSHC	*21	28	6	1	-1	-4	-9
	FL	1	BC	16k	791	192	57	29	12	4
	R	16								
M 61 Frag Grenade USA	L	3.8	PEN	3.4	2.4	2.2	1.8	1.5	1.0	.4
	W	1.0	DC	10	2	2	2	2	1	1
	AT	3	BSHC	*2h	*3	84	20	8	2	-1
	FL	2	BC	13k	704	176	52	27	12	4
	R	15								
M 26 A2 Frag Grenade USA	L	3.9	PEN	3.4	2.4	2.2	1.8	1.5	1.0	.4
	W	1.0	DC	10	2	2	2	2	1	1
	AT	3	BSHC	*3h	*4	*1	25	11	3	0
	FL	1	BC	13k	704	176	52	27	12	4
	R	15								
Mk A3 Blast Grenade USA	L	5.3	PEN	3.8						
	W	1.0	DC	10						
	AT	3								
	FL	2	BC	20k	928	218	63	32	14	4
	R	15								
2 lb TNT	L	3.8	PEN	6.1						
	W	2.0	DC	10						
	AT	V								
	FL	V	BC	92k	29h	520	131	64	27	9
	R	11								
10 lb TNT	L	6.5	PEN	10						
	W	10.0	DC	10						
	AT	V								
	FL	V	BC	59t	15k	19h	347	153	61	19
	R	5								

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