



AFTERMATH

Book 2

SURVIVORS OF THE AFTERMATH

A Player's Handbook
for a Post-Holocaust World

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INTRODUCTION

This is the first book of the rules as they specifically relate to an **Aftermath!** campaign. This book deals with the creation of characters, the Skills available to them, and rules for dealing with life after the Ruin.

Detailed character creation and the equipment available are based on certain premises. These are that civilization continued to develop until sometime in the late twentieth or early twenty-first century. Things then began to fall apart or were ripped asunder. The time is now about twenty years after the collapse of organized society as we would come to know it. The nature of the collapse is left unspecified. This is the Gamesmaster's province and should be specific to his campaign.

If the Gamesmaster does not wish to accept the basic premise as detailed above, modifications should be made to the character generation system and the level of equipment available. The game as designed can be used to simulate a wide variety of ruined worlds and can be set in the recent past, the present, or the near, or even far, future.

CHARACTER GENERATION

In this section of the rules we deal with the generation of characters intended for play in an **Aftermath!** campaign. The various steps in this process are presented in the order in which they should be performed. Each section is accompanied by a reproduction of the part of the Character Record Sheet on which the pertinent information is recorded.

The specifics noted for characters in this generation process apply to a campaign set approximately twenty years after the final collapse of civilization. If the Gamesmaster wishes to set the campaign at another point, various things should be altered. These include initial Skills available, origins for the different age groups, initial equipment availability, the chance of a character being a mutant and possibly even the age groupings.

If the Gamesmaster so desires, he is operating within his authority to specify that a beginning character is in a specific Age Group, has specific origins, and has access to a limited array of Skills and/or equipment. This is usually done when the Gamesmaster has a specific place of origin for the characters in his campaign or a player is replacing a lost character in the middle of an adventure.

AGE GROUP

Each player should roll 1 D20 to determine his character's Age Group. If a player strongly desires to play a character in a given Age Group, the Gamesmaster may allow this without recourse to a random die roll.

The results of the die roll are checked on the table below.

AGE GROUP TABLE

D20	Age Group	Base Age
1-5	0	13
6-10	1	22
11-14	2	31
15-17	3	40
18-19	4	49
20	5	58

The player may determine the character's actual age by adding the results of 2D5 to the base age. This information is entered on the Character Record Sheet.

The character's Age Group will affect much of the rest of the generation process. Each Age Group will receive certain initial skills and other benefits and/or detriments. Each Age Group is dealt with separately below.

Group 0 — Character receives an initial score in Post-Ruin Culture and 1 non-Firearm Combat Skill of the player's choice. The character also receives 2D5 Attribute Increase Points. (These are dealt with later.) The character has a 2 in 6 chance of being "Changed". The player must check on the Origins Table on page 2.

Group 1 — The character receives an initial score in Post-Ruin Culture, 1 non-Firearm Combat Skill, and the player's choice of Literacy or Technology Use. The character receives 2D5 Attribute Increase Points. The character has a 1 in 6 chance of being "Changed". The player must check on the Origins Table on page 2.

Group 2 — The character receives initial scores in Literacy, Technology Use, and 1 non-Firearm Combat Skill of the player's choice. The character also receives a score in Culture but the player may specify whether the prime area is Pre- or Post-Ruin. The player must check the Development Point Table on page 2.

Group 3 — The character receives an initial score in Pre-Ruin Culture and the player's choice of any 2 non-Firearm Combat Skills or 1 Firearm Skill. The character also receives doubled initial scores in Literacy and Technology Use. The player must check the Development Point Table on page 2. The character may suffer aging effects. (These will be dealt with later.)

Group 4 — The character receives doubled initial scores in Literacy, Technology Use, Pro-Ruin Culture, and the player's choice of 1 Firearm Combat Skill. The player must check the Development Point Table on page 2. The character will suffer aging effects.

Group 5 — The character receives initial scores as Age Group 4 plus an initial score in a Survival Skill. The player must check the Development Point Table on page 2. The character will suffer aging effects.

All characters will receive an initial score in Brawling Combat Skill and in 1 Survival Skill.

Specific Skills received should be noted in the Skills section of the Character Record Sheet. Any Attribute Increase Points should be noted to one side of the Attribute section on the CRS.

Age Group	Base Age	Actual Age
Size	Birth	Looks

ORIGINS FOR CHARACTERS IN GROUPS 0 AND 1

The specific source of training and knowledge available to a character in his formative years will modify what Skills are allowed to him. To determine the character's origins roll 1D10, add the character's Age Group to the result and consult the table below.

ORIGINS TABLE (D10)

Roll

- 1-2 "Wild" upbringing: the character has primarily been on his own for most of his life. He has had no formal or rigorous training. The character may not begin with any Technical or High Tech Skills
- 3-4 Tribal upbringing: the character has been raised in a group reduced to a tribal level of society. The character may not begin with any High Tech Skills and Technical Skills have doubled cost for him.
- 5-6 Adopted by an older survivor: the character has been raised by a foster or real parent or pair in relative seclusion. His only source of learning was his "parent(s)" and experience. There is a 20% chance that any Technical Skill desired by the player for the character is unavailable to him. There is a 40% chance of unavailability with regard to High Tech Skills.
- 7-10 Community upbringing: the character was raised in a community of survivors. The player will have free choice of Skills following the standard rules unless the Gamesmaster has prepared a list of Skills available to the community. This information can be noted on the back of the Character Record Sheet.

DEVELOPMENT POINTS

Each character will have some Development Points. These can be used in two ways. They can be used as Skill Pointsto "buy" Skills or they can be used as Attribute Increase Points to "buy" increases to the character's Attribute scores.

Each character receives a number of Development Points equal to his base age. These may be split as the player desires between Skill Points and Attribute Increase Points.

Characters in Age Groups 2 through 5 should roll 1D10, add their Age Group to the result and consult the Development Point Table below.

When the division of the total Development Points is made, the total Attribute Increase Points and the total Skill Points should be noted in the margin of the Character Record Sheet.

DEVELOPMENT POINT TABLE (D10)

Roll

- 1-3 No increase in points.
- 4-6 Receive 2D3 Attribute Increase Points.
- 7-9 Receive 2D5 Development Points.
- 10-12 Receive 1D5 Development Points and 1D3 Attribute Increase Points.
- 13-15 Receive 2D5 Development Points and 2D3 Attribute Increase Points.

PSYCHOLOGICAL PROFILE AND TALENTS

The psychological profile of the character gives an initial value to each of his Talents. These initial values may be altered following the rules given in Book 1. For each Talent, the player should roll 1 D1 0, consult the table below

and enter the result in the Allocated column of the section for Talents on the Character Record Sheet.

The player will then roll 2D6 and add the result to 15. This is the number of Talent Points which he may allocate among the character's Talents. Remember that no score may exceed 20. The adjusted scores for the Talents should be entered on the Character Record Sheet.

Any changes after this point will be entered in the Current Column. If no change is made the Allocated value is the Current value.

PSYCHOLOGICAL PROFILE TABLE (D10)

Die Roll	Talent Initial Rating
1	-2
2-3	-1
4-6	0
7-8	1
9	2
10	3

Talents (15 + 2D6 = ___ points to allocate)	points to allocate		
	Base	Allocated	Current
Charismatic	___	___	___
Combative	___	___	___
Communicative	___	___	___
Esthetic	___	___	___
Mechanical	___	___	___
Natural	___	___	___
Scientific	___	___	___

INITIAL ATTRIBUTE VALUES

The beginning character in *Aftermath!* receives 75 points to allocate among his Attributes. These are distributed as the player desires among the six Attributes. No score may be less than 1 or more than 40. When the player has decided on the distribution of these points, they should be entered in the Allocated column in the Attribute section of the Character Record Sheet.

Attribute	Allocated
WT	
WL	
STR	
DFT	
SPD	
HLH	

SKILLS DETERMINATION

At this point the player should decide what Skills the character will possess. Skills are "bought" using Skill points. The "cost" in Skill Points for each Skill is given along with the Skill and its initial score in Appendix 2. A character with insufficient Skill Points to pay the "cost" of the Skill may not begin with that Skill.

A Skill may be "bought" at twice the normal "cost" in order for the character to receive a doubled initial score in that Skill. This is the maximum initial score that a character may have.

Some Skills have Prerequisite Skills. The character must have all Prerequisite Skills with a minimum score of 25 in each if he is to acquire the Skill which has such prerequisites. A character who does not have the Prerequisite Skills or whose score in the Prerequisite Skills is less than 25 is not allowed to begin play with the Skill in question.

The values used for any calculations of an initial score in a Skill are taken from the character's Allocated Attribute scores and the Allocated Talent scores.

The name of each Skill and the character's initial score in it should be entered on the Character Record Sheet in the section for Skills.

Skills	SCORE	BCS
Off-hand Dexterity	___	___
Brawling	___	___
Survival	___	___

ALTERATIONS TO ATTRIBUTES

Attribute scores may be altered before play in any of three ways. These alterations can be due to aging effects, "Changed" status or Attribute Increase Points.

The effects of aging are given in Book 1 on page 45. The character is assumed to undergo the effects of each breakpoint up to and including his current actual age.

"Changed" status may or may not affect Attributes depending on the nature of the mutation. This information will be provided by the Gamesmaster. He has the rules concerning mutants in Book 3 and will inform the player of the nature of the character's mutation and its effects on the character.

Attribute Increase Points are the voluntary method of Attribute increase before the beginning of play. The total number of Attribute Increase Points is the number of D3s that the player may roll. The sum of these die rolls is the number of points that the player may distribute among the character's Attributes. These increases may be used to counteract the effects of age or mutation or to enhance such of those effects as the player considers beneficial.

When these modifications have been made, the new Attribute scores are entered in the Permanent column of the Character Record Sheet. Any subsequent changes to the Attribute scores which are not specified as permanent changes will be entered in the Current column. If no such change has occurred, the Current score will be the Permanent score.

Attribute	Allocated	Permanent	Current
WT			
WL			
STR			
DFT			
SPD			
HLH			

PHYSICAL CHARACTERISTICS

The player will roll 1 D100 for each of the following characteristics: Size, Bulk and Looks. The category for each is entered on the Character Record Sheet and the total of the recognition factors for each characteristic is entered as the Base Recognition Factor.

The player may cross-index the character's Size and Bulk groupings on the Personal Encumbrance Chart to determine this value. It should also be entered on the Character Record Sheet.

The necessary Table and Chart are found in Book 1 on page 10.

Age Group	Base Age	Actual Age	Recog. Factor
Size	Bulk	Looks	Personal ENC

BASIC CLOTHING

Each character will begin with some basic clothing. To determine what the character begins with, the player should roll 1D10, add the character's Age Group and consult the table below.

BASIC CLOTHING TABLE

Die Roll (D10)	Item	Coverage	Code	Total ENC	Armor Value/ Location
1	Shorts	10-12	HC	.003	2
	Sandals	17-20	LH	.016	2
	Shirt	4-9,21-22	LC	.004	1
2-5	Pants	10-18	HC	.009	2
	Sneakers	19-20	HC	.002	2
	Shirt	4-9,21-28	HC	.014	2
6-10	Fatigue Pants	10-18	HC	.009	2
	Combat Boots	17-20	LL	.016	3

Shirt	4-9,21-28	LC	.007	1
Field Jacket	4-11,21-28	HC	.016	2
11-13 As 6-10 plus				
Hat	1	HC	.001	2
Gloves	29-30	LL	.008	3
14-15 As 11-13 except				
Pants	10-18	PC	.0135	3
Boots	17-20	SY	.04	5
Jacket	4-11,21-28	PC	.024	3
plus Steel pot	1	SP	.07	9

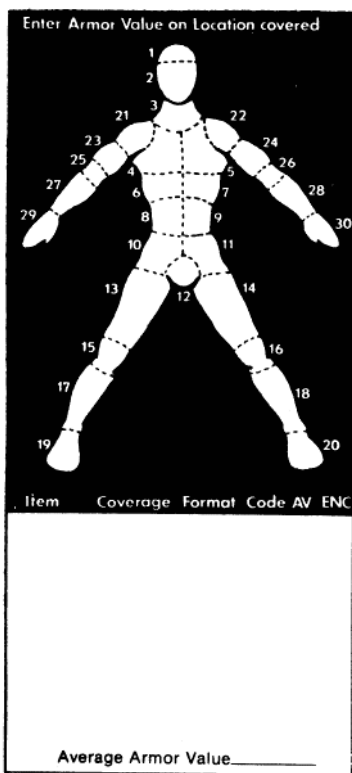
INITIAL ARMOR

Each character receives a number of Barter Points equal to twice his Base Age which the player may use to "buy" armor. Guideline Barter Values are on page 52 and in Appendix 3. All prices are base prices and these Barter Points may only be used for acquiring armor for the character. Any extra points are lost.

Armor acquired in this fashion should be in the form of some real sort of armor. Each item and the pertinent information concerning it should be entered on the Character Record Sheet in the Armor section. The best Armor Value on each Location should be entered on that Location on the Body Map provided on the Character Record Sheet

The Total Encumbrance Worn may now be calculated.

The Average Armor Value is calculated following the rules on page 17 of Book 1 and entered on the Character Record Sheet.



INITIAL EQUIPMENT

All characters will receive certain basic equipment. This is listed on the reverse side of the Character Record Sheet. If a die roll is indicated the player should roll the appropriate die or dice and record the number on the CRS. This collection of initial gear is known as a "survival kit." In addition to this gear, a character will receive a "container" in which to carry things. The player will roll on the Utility Number Table and may choose any container of the indicated Utility from those listed in the container section of gear and equipment on page 54.

Various Skills are noted as having the possibility of initial equipment. For any Skill so noted the player should roll 1 D10 and note the number indicated on the Utility Number Table. This will indicate what if any equipment is received for that Skill. Later in this section such Skills and the appropriate starting equipment are listed.

When checking for a Small Arms Skill, a special roll must be made before checking for the Utility Number. For the first Small Arms Skill that the character has, the player must roll less than or equal to the character's Age Group for him to have a firearm appropriate to that Skill. The die rolled in this case is 1D6. For the second such Skill, the die is 1 D10. For

any subsequent Skills the die is 1D20. The first failure to receive a firearm prevents any further rolls. If this roll indicates a firearm and the Utility Number roll indicates "nothing," the firearm is currently Disrepaired. Roll again for its Utility ignoring Utility Numbers less than 1.

Any firearm will come with 3D6 rounds of the correct caliber.

The Gamesmaster may have specific tables for the availability of various items of equipment which may alter the availability of some of the equipment listed below. In any case, the Gamesmaster is the final arbiter of the exact nature of all initial equipment.

UTILITY NUMBER TABLE

Die Roll	Utility Number	Explanation
1	Utility-0	Very low utility; for initial equipment it usually means that none is received.
2-4	Utility-1	Low utility; poor initial equipment.
5-7	Utility-2	Average utility; standard quality initial equipment.
8-9	Utility-3	High utility; above-average quality initial eq uipment.
10	Utility-4	Very high utility; high quality initial equipment; often indicates a high tech item.

In Pack or Bag (Capacity _____)

On Belt

Loc	Item	ENC
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

Left Slung

Right Slung

Left Hand

Right Hand

Pockets

1
2
3
4
5
6

Other

HAND-TO-HAND COMBAT SKILLS

For most Hand-to-Hand Combat Skills the player may choose a weapon from the Weapons Listing in Appendix 4 that has the Utility Number generated (or a lesser one) and is usable by that Skill. Exceptions are noted below. If the Skill allows a character to use two of the weapons, a Utility Number one higher than that called for by a weapon will allow the character to have a pair of the weapons. In any case a higher Utility Number than the weapon of choice will indicate that the weapon is a improved version. For an improved version, roll 1D6. On 1-3 the weapon has a WDM increase of .1 times the result of 1D3 and on 4-6 the weapon has a decreased ENC of .1 times the result of 1D3. If a player wishes to choose a weapon rated 1 Utility Number higher than rolled, he may but the weapon will be inferior. It will have the WDM decreased by .1 times the result of 1D3, the ENC value increased by .1 times the result of 1D3 and the Survival Value halved.

The indication of a High Tech item (Utility Number 4 where the highest available weapon Utility is a 3) will mean that the weapon is electrocharged. Such weapons require an E-5 battery. Each time they hit they will discharge one charge into the target. This occurs even if the armor is not penetrated by the weapon but is subject to the rules for electrical attack given in Book 3. An electrocharged weapon has an ENC value increase of .2 plus the ENC of the battery. The player need not accept an electrocharged weapon.

With Hand-to-Hand weapons there is a 50% chance that the weapon is a reproduction weapon if such is available for use by that Skill.

Brawling: Brass Knuckles are only received with Utility 3.

Two Weapon: Any weapon, subject to the strength rules, usable with one hand can be used by a character with this Skill. If the character has Single weapon Skill as well, the weapon for that Skill will be determined first and will

be the character's primary weapon for Two Weapons Skill. A second weapon may be chosen but its Utility Number will be reduced by 1.

Unarmed Combat: This Skill usually does not use weapons but a Utility 4 roll will give the character a pair of karatands if such items are allowed by the Gamesmaster. They are made of Rigiplast and have an effective Armor Value of 7. See the Gamesmaster for more specifics on Rigiplast.

Weapon and Shield: If the character has Single Weapon or Two Weapon his weapon will be gotten from those Skills. The Utility Number times the result of 2D10 will be the maximum Barter Point Value of the shield the character has. These points are only applicable to the shield and only 1 shield may be "bought." Values and types of shields are given in Appendix 5.

MUSCLE POWERED MISSILE WEAPONS

For most of these Skills two Utility Number rolls must be made, one for the delivery system and one for the projectiles.

Archery

	Bow (Pound Pull)	Arrows
U-0	None	None
U-1	2D2 x 10	Totally improvised
U-2	2D3 x 10	Shafts only improvised
U-3	3D2 x 10	Standard construction
U-4	4D3 x 10	Fiberglass shafts

The Pound Pull indicated is the maximum. The value may be reduced to whatever level desired. A character who receives a bow will also receive 3D6 arrows. The choice of heads for the arrows is at the player's discretion. A voluntary reduction of the Utility Number will allow the character to have a fiberglass bow which has an ENC value of 75% of the normal value.

A character also receives a quiver (ENC 1) which may be slung on his back or at his side. It will hold 20 arrows.

Blowgun: Utility 1 or 2 indicates a short tube which will reduce ranges given in the Skill description by half. This tube has an ENC value of .5. Utility 3 or 4 gives a long tube with an ENC value of 1. A character who receives a blowgun will also receive 3D6 darts.

U-C	Improvised darts
U-1	Fire hardened darts
U-2&3	Metal darts
U-4	Metal darts and 2D10 units of anesthetic poison of Strength equal to 1D3.

Bola: The Utility Number is the number of balls in the character's Bola.

Crossbow: The Pound Pull is determined as for bows; the multiplier is 20 instead of 10 but no fiberglass models are available. The bolts and their number are determined in exactly the same way as arrows. The character also receives a case (ENC .8) which holds bolts as a quiver holds arrows.

Sling: The character receives a sling. The Utility Number is the number of six-sided dice used to determine how many non-improvised sling pellets the character will start with. Each has an ENC value of .001.

Slingshot: The Elasticity of the weapon is equal to the Utility Number. A Utility of 0 has an Elasticity of .5. The number of sling bullets is determined in exactly the same way as for Slings.

Throwing: The character may choose 1 D6 weapons from the Weapons Listing in Appendix 2 which are eligible for use with Throwing Skill and have a Utility Number equal to or less than the Utility Number rolled. Superior and Inferior quality weapon rules apply as for Hand-to-Hand weaponry.

NON-TECHNICAL PHYSICAL SKILLS

Gambling: The character with a Utility Number of 1 through 3 starts with a pair of dice or a pack of playing cards. A Utility Number of 4 starts with both.

Handicraft: The starting equipment is at the discretion of the Gamesmaster and will reflect the type of handicraft.

Magnalock Penetration: A Utility Number of 4 allows the character to begin play with a basic Magnatuner and the E-1 battery to power it.

Lockpicking:

- U-1 Crude lockpicks. ENC equals .2. Efficiency factor equals .8. BCS modification equals -2.
- U-2 Standard lockpicks. ENC equals 2. Efficiency factor equals 1.
- U-3 Quality lockpicks. ENC equals .25. Efficiency factor equals 1.2.
- U-4 High-quality lockpicks. ENC equals 3. Efficiency factor equals 1.5. BCS modification equals 1.

First Aid:

- U-0 1D10 Bandages.
- U-1 Medkit 1 with 2D5 bandages.
- U-2 Medkit 1 with 2D5 bandages and 2D5 units of medical supplies.

U-3 Medkit 2 with supplies as U-2.

U-4 As U-3 plus roll 1D10:

- 1-3 1D3 units of Panomycin
- 4-6 1D3 units of Polycellulac 3
- 7-9 Roll 1 D6 for type but double quantity
- 10 2D3 of each drug

HIGH-TECHNOLOGY PHYSICAL SKILLS

Safecracking: A Utility Number of 4 will allow a character to start with a stethoscope. This will add i to his BCS. It has an ENC value of .5.

If the Gamesmaster is starting characters with a particular scenario, he may provide them with additional initial equipment.

Characters are not allowed to "barter off" initial equipment in attempts to improve their lot. This must be done in the course of the campaign.

The initial equipment that a character receives does not necessarily represent the best that the character has ever had in his life. It is intended to reflect the results of the most recent turns of fortune. The character with high scores in Firearm Combat Skills who begins without a gun has run into a string of bad luck resulting in his losing whatever firearms he had.

All gear received should be distributed, by the player, about the character's person.

FINAL CALCULATIONS

Having determined the equipment received by the character, the player must make the final calculations of various numbers and enter them on the Character Record Sheet.

The Encumbrance Total for the character is made from the ENC carried and the ENC worn. This is checked against the character's Encumbrance Capacity to see if he is Partially or Fully Encumbered. If he is, it will affect his Current score in the Deftness and Speed Attributes.

Ability scores should be calculated according to the appropriate formulas. Remember that some of these may change if the character's Attribute scores change.

The Basic Chance of Success for each of the character's Skills should be calculated now. Having these numbers pre-calculated will save time during actual play.

After conferring with the Gamesmaster the player will be able to enter the character's base Recognition Factor on the Character Record Sheet.

ENC Carried	Worn	Total
_____	_____	_____
		=

Encumbrance
Maximum value carried with status
unencumbered partially Enc. fully Enc.

Learning rate (WT Group)	Healing Rate (HLH Group)
Freely Improvable Skills (WT & WL)	Shock Factor (10+ Healing Rate)
STR Group	Damage Resistance Total (HLH + STR + WL)
Maximum Number of Actions (DFTGrp)	
Base Action Phase (SPD -AST)	
Phases Consumed in Action (IBAP/MNA).d	
Combat Dodge Ability (DFT & SPD)/20.n	

Age Group	Base Age	Actual Age	Recog. Factor
Size	Bulk	Looks	Personal ENC

NOTES ON CHARACTER GENERATION

All through the process the player should give thought to the character that he is creating. The values of the various numbers can be used to reflect the player's conception of this character. Beyond the areas covered on the Character Record Sheet, the player should give thought to the character's mental processes, likes, dislikes, fears, goals and dreams. All these things

would affect how the character will react in a situation. Knowing these things and having the character act according to them is the essence of role-playing. The game rules provide a clear picture of the character's appearance and abilities. It is up to the player to provide the view of the character's nature.

At this point the character is ready for play. The rest of this book presents rule sections concerning various aspects of the campaign world and the things in it.

SAMPLE CHARACTER

Jack Smith is creating a character for an *Aftermath!* campaign. He envisions a man who longs for the lost technology and strives to retain it whenever possible.

A result of a D20 die roll is 11, indicating an Age Group of 2. This gives the character a base Age of 31. A die roll of 2D5 gives a result of 6, which when added to the Base Age gives an Actual Age of 37.

Being of Age Group 2, the character will receive initial scores in the Skills of Literacy and Technology Use. Jack decides that Post-Ruin Culture is most appropriate to the character. For his non-Small Arms Combat Skill he chooses Archery.

He also will receive an initial score in Brawling Combat Skill and one Survival Skill. He chooses Survival in the Urban Environment.

The next step is to determine the character's Psychological Profile. Jack rolls for the Talents in order. Each D10 is rolled and the results are checked on the Psychological Profile Table. The results are entered on the CRS. Jack determines the number of points he has to allocate among the Talents. The roll of 2D6 yields a 7 for a total of 22 points. These are distributed among the Talents and the addition is done to the values as shown on the CRS reproduction.

The 75 points are distributed among the Attributes. These are recorded in the Allocated column of the Attribute section.

Jack is using 6 of his Development Points as Attribute Increase Points. The rest are used to "purchase" Skills. He "buys" the Skills listed on the CRS. All are at base cost since Jack has decided that the character is a jack-of-all-trades but not a master of any and has not sought to double any of his initial scores.

Having bought the Skills, he now determines his initial scores in them using the formulas presented with the Skills.

Once the initial Skills are determined, Jack rolls 6D3. He had used 6 Development Points as Attribute Increase Points. Each one of these Points is worth 1D3 of Attribute Points. The result of the roll is 13. Jack adds 6 to Wit, 1 to Will, 4 to Deftness and 2 to Health. These modified scores and the unchanged scores for Strength and Speed are entered in the Permanent column.

The character is too old to be "Changed" and too young to experience aging effects. Thus no further modifications are made to his Attributes.

The character's Physical Characteristics are now determined by rolling 1D100 for Size, Bulk and Looks. The die rolls are 25, 51 and 64, yielding results of Below Average, Average and Average, respectively. Cross-indexing Size and Bulk on the Personal Encumbrance Chart shows that the character has a base Personal Encumbrance of 3.9. The Strength modification to this is (8/10) x .1 or .08, for a final Personal Encumbrance of 3.98.

The base clothing die roll is a 2 to which is added the character's Age Group of 2. This gives an initial clothing of shirt, pants and sneakers.

The character has his base Age times 2 in Barter Points with which to "buy" armor. This gives him 31 x 2 or 62. Jack buys a helm of Plated Macroplast at a cost of 24 Barter Points. He buys a Synthiplast gorget for 5 Points and body protection of Plasticloth for 33 Points. This totals to 62 Points exactly. In keeping with his conception of the character, Jack has bought only plastic armor and clothing although he could have gotten materials with a higher Armor Value if he had "purchased" metallic or non-metallic armor.

Jack's Skill choice gives him only 5 Skills which may start with initial equipment. For Brawling Skill the result of his Utility Number roll is a U-3 so he will start with Brass Knuckles. The number for his bow is U-2, The result of the called-for roll of 2D3 is a 4. 4 x 10 yields a 40-Pound Pull bow. The character will start with 3D6 arrows. The die roll is 10 so he puts the arrows in his quiver. The Utility Number roll for the arrows gives a U-3 which is standard construction arrows. Jack decides that 5 of the arrows will be Target Arrows and 5 will be Hunting Arrows.

To determine if he receives any firearms, Jack first rolls 1 D6. The result is a 2, which is equal to his Age Group. This means he will receive a modern pistol, since Pistol, Modern is the first Small Arms Combat Skill listed. He now rolls 1 D10 to see if he receives a weapon for his Pistol, Primitive Combat



Story of MANE SHOUZEN

Area	current merit total	current Rep total
Fighter, MTH missile gun		
Personal Bravery		
Survival, self others		
Hunter, MTH missile gun		
Competence nontech skill		
tech skill		
high tech skill		
Other		
Gear	inc	inc
matches (2D6)	01/5	
flint & steel (1D3 flint)	01	
chalk (1D3)	01	
arrows (2D3)	06	
magnifying lens	01	
compass	1	
jackknife	.1	
1 l. canteen	3(10)	
"space" blanket	1	
SWARFACE	(.4)	
EMC Table NOT COMPT		
ARMOR LAMB 10		

Skill since that is the next listed, The result is a 4 which is greater than his Age Group. He will not receive a primitive pistol and may not roll 1D20 to see if he would receive a modern rifle for his other Small Arms Skill. The pistol is a .45 caliber AL Standard barrelled pistol. His 3D6 roll gives him 10 rounds of ammunition.

Jack also makes the appropriate die rolls for the gear in his survival kit.

Having selected a knapsack as his Utility 2 container, Jack has all the equipment that his character will start with. He totals this to get the Encumbrance total, which is the sum of that Worn and that Carried. His total Encumbrance Worn adds up to .1055, which is rounded off to .11. The total Encumbrance Carried is as follows: In the knapsack is all of the survival kit except the canteen. This totals .29 but since it is in a properly worn container its effective value is .15. On or in the belt are the canteen and the pistol, which now holds 7 rounds of ammunition. This has an ENC value of .2 plus .4, or .6. The quiver with arrows has a value of $(1/2 + (10 \times .05)/2)$ or .75 and the bow a value of .4. His three extra rounds are placed in a pocket where their ENC value is halved to 0.15 and rounded to .02. The Brass Knuckles are also placed in a pocket for a halved encumbrance of .05. This all totals 2.02 ENC Carried. The total Encumbrance is thus 2.02 plus .11, or 2.13. This is well within the character's Encumbrance Capacity, so he will be Unencumbered.

All ability values and BCS scores are calculated now. Jack informs the Gamesmaster that the character has no distinguishing marks and does not wear distinctive clothing. The character's base Recognition Factor receives no modification and is thus the sum of the factors noted for his Physical Characteristics. They were 1 plus 0 plus 0, or 1.

Name: JACK SMITH				Age: 20 Sex: M Height: 5'7" Weight: 170 lbs				
WT	19	25	12	6	ST	5	7	5
WL	13	14	7	5	HT	5	7	5
STR	6	6	4	3	INT	6	6	4
DFT	14	20	10	7	PER	6	6	4
BPD	9	9	4	3	REA	6	6	4
REL	11	13	6	4	RES	6	6	4

Encumbrance	Worn	Carried	Total
Survival Kit	.15	.29	.44
Canteen	.2	0	.2
Pistol	.6	0	.6
Quiver	.75	0	.75
Bow	.4	0	.4
Extra Rounds	.02	.15	.17
Brass Knuckles	.05	0	.05
Total	.11	2.02	2.13

Skill	Level	Positioning	Format	Code	Area	Value
Hand to Hand	12	A	1	1	Hand	12
Survival	29	A	1	1	Survival	29
First Aid	30	A	1	1	First Aid	30
Pistol	49	A	1	1	Pistol	49
Knife	49	A	1	1	Knife	49
Archery	51	A	1	1	Archery	51
Mathematics	35	A	1	1	Mathematics	35
Navigation	39	A	1	1	Navigation	39
Auto Bill	51	A	1	1	Auto Bill	51
Auto Pistol	51	A	1	1	Auto Pistol	51
Mechanics	51	A	1	1	Mechanics	51
Welding	51	A	1	1	Welding	51

Choosing the name of Hank Snowden for the character, Jack informs the Gamesmaster that his character is ready for play.

SKILLS

Characters will have the Skills chosen for them by their players. These will allow the characters to function in the game environment. Besides the basic functioning of Skills as explained in Book 1 some Skills can be used to perform tasks.

TASKS

A Task is a job involving a Skill which can not be resolved by a simple die roll in Detailed Action Time. A given Task is rated for a Task Value (the number of Task Points required to complete it) and a Task Period at the end of which a character accumulates Task Points.

At the end of a Task Period, the length of which is determined by the Gamesmaster, a character will make a BCS roll for the Skill Involved. A successful roll will allow the character to roll the Effect Die for a specified Attribute, usually Deftness or Wit. A critical success (die roll of 1 when the BCS is greater than 1) raises the character's Attribute Group by 1 for that die

roll. This die roll result is the base number of Task Points that the character will finish in that Task Period. Failure on the BCS roll will mean that no progress is made during that Period towards finishing the Task. A critical failure (a die roll of 20) will result in the total of finished Task Points being reduced. The base reduction is determined in the same way as the base progress s determined.

If a Skill requires tools, equipment or facilities, they will be rated for their Efficiency Factor. This Factor will be multiplied by .1 times the Effect Number (the difference between the die roll and the character's BCS). The modified Efficiency Factor is multiplied by the base Task Points finished. These are added to the total finished if the BCS roll was successful and subtracted if the result was a critical failure.

With some Skills, units of supplies are necessary to produce the finished product. For these the type of material required will be specified. Some Skills will result in a smaller number of units of finished product than of initial material. The method for calculating the percentage of original material turned into product will be given with the Skill Description. In these cases round fractions down.

Occasionally one Skill is needed to determine what is to be done and another is used to do it. A BCS roll is made with the first Skill, with success meaning that the character knows what to do. Failure means he does not know what to do and critical failure means he thinks he knows what to do. In the latter case, performance of the task will proceed normally but the end product will be wrong. Such boondoggles waste time and materials and, in some cases, can be downright dangerous.

For the most part the formulation of the difficulty of a Task is left to the Gamesmaster. He has the final say as to the number of Task Points required to finish the Task and the length of the Task Period. Some guidelines are given in the Skill descriptions where the products are not so variable as to be beyond space limitations. A Task with a short Period but a high number of Task Points may be as difficult and time consuming as one with a longer Period but a lower number of Task Points. The Gamesmaster may make a Task more difficult by imposing a negative modification to the BCS. This can be done to reflect the character dealing with an obscure or unusual or very difficult application of the Skill.

SKILL DESCRIPTION

The Skills presented in this section are a cross-section of skills available to a character in *Aftermath!* world. The Gamesmaster may add additional Skills or eliminate some that are presented here in order to tailor the game to his own campaign. Players should always check on the availability of Skills with the Gamesmaster.

Skills are presented as follows: The name of the Skill; the Positioning if a Combat Skill; a letter code; the initial score for the Skill; and a number indicating the Format on the first line. If the Skill is Format 2, the number will be followed by the names of the areas the Skill is broken down into. The second line will contain in parentheses any prerequisite Skills required by the Skill. Following this will be the description of the Skill.

Once a player is generally familiar with what the Skills can do he can consult the Skills Listing in Appendix 2 when constructing a character. This listing does not contain descriptions but does contain the cost of a Skill in Skill Points.

LETTER CODES FOR NOTES

- A — This Skill has an Averaging function.
- T — This Skill always requires tools or some other equipment to be used in its primary form.
- S — This Skill sometimes requires tools or some other equipment in order to be used in its primary form.
- E — A character with this Skill may start with some initial equipment pertinent to the Skill.

COMBAT SKILLS

HAND TO HAND^E

Brawling (Frontal)^S STR + DFT + Combative 3
This is unskilled, knockdown and drag-out style fighting.

The fighter may strike with a hand and receive a secondary strike or he may strike with a foot and make only the one attack. Hand attacks receive -5 to the Hit Location roll and are considered Short length weapons. Foot attacks receive +5 to the Location roll, are considered Average length weapons, and add the Mass of the fighter to his Strength for determining the Effect Die to be rolled for a successful attack.

The fighter has a Weapons Damage Multiplier of 1 plus the Armor Value of the Location with which he strikes divided by 30, rounded to the nearest.

Damage done is 75% subdual (C type) except on Critical Hits when it is 50% subdual (B type).

For details of the effects of blows on armor see Unarmed Combat Skill.

Brawling Skill covers the use of improvised weapons such as bottles, broken bottles, chairs, table legs, etc. The fighter uses an Average BCS in these cases to resolve his attack. When the ravaging hordes are closing in and there is no better option, a fighter may utilize a rifle or pistol butt as an "improvised" weapons and attack with an Average BCS using Brawling Skill.

Fencing (Presented)^T SPD + DFT + Combative 3

This Skill is a refined form of Single Weapon Skill. Its difference from that Skill lies in the Positioning used and the Attributes involved. Fencing Skill operates as a normal HTH Combat Skill.

Flexible Weapon (Frontal)^T DFT + STR + Combative 3

This Skill governs the use of flexible and jointed weapons.

Some of these weapons are capable of a special form of attack called Entanglement. It must be stated which type of attack is being made before the attack is resolved.

In all cases an Entanglement attack may also do some subdual damage. The user of the weapon makes his Effect Die roll in the usual fashion but the effects of the armor on the Location struck are affected by its Format. R format armor will stop all of the damage; SR type will reduce the damage by its normal Armor Value; and all other formats will reduce the damage by one-half their normal Values rounded nearest.

Some of the effects of an Entanglement attack are dependent on the Location struck. The Effect Number of the successful attack is cross-indexed with the Location on the chart below to get the special result of the Entanglement attack. A Critical hit will add 10 to the Effect Number.

Once a flexible weapon user has gotten an Entanglement effect, he may attempt to maintain his hold on the target. This requires a matching of Deftness Effect Group Die rolls. If the user's is higher he maintains the hold, and, if the Target's is higher, the user must attempt to get a new grip for his next

Action or do something else. If a hold is maintained the target is limited to 1 meter moves for each Action even if he is performing none. That is, he may not move freely. The user will roll his BCS at the end of his Action. This BCS is his base BCS and will determine the Effect Number to be used for the results of this Action's attack.

A target may break a hold by attacking the weapon to destroy it (treat the weapon as having the user's Overall Defense Ability); making a Strength Ability Saving Throw with a free hand to rip the weapon free; or incapacitating or killing the user.

ENTANGLEMENT EFFECT CHART

Effect	Head & Neck	Torso ¹	Leg	Arm 2
Number	Loc 1-3	Loc 4-12	Loc 13-20	Loc 21-30
0-1	Distraction	No Effect	Distraction	Distraction
2-3	Multiple Distraction	Distraction	Abort Action	Abort Action
4-6	As 2-3 plus Check for Daze	Multiple Distraction	Dazed	Dazed
7-9	As 2-3 plus Dazed	As 4-6 plus Check for Daze	Knocked over	Stunned
10 & Up	Stunned	As 4-6 plus Dazed	Knocked over plus check for Fall results	As 7-9 plus Check for Knocked Over

Distraction	The target receives 1 Distraction to all BCS for a Combat Turn.
Multiple Distractions	The target receives the user's Deftness Group in Distractions for a Combat Turn.
Check for Daze	The target compares his Health Group Effect Die roll to the user's Strength Group Effect Die roll. If it is higher there is no effect other than the Distractions. Otherwise he is Dazed as well.
Dazed	The effect is the same as the critical effect Daze.
Stunned	The effect functions as the critical effect Stun except that the target functions normally on the next Combat Turn.
Abort Action	The target must abort any Action in progress that is not resolving on the Action Phase on which the Entanglement attack is resolved. If able under the

normal rules for initiation of Actions, the target may reinstate his Action on the next Action Phase.

Knocked Over The target is knocked from his feet and is subject to the rules for falling. The target's lower half is in the hex he had been occupying and his upper half is in the one most directly away from the weapon user.

Knocked Over plus As above plus the target is at least Dazed.

Check for Knocked Over The target and user compare Strength Group Effect Die rolls. If the user's is higher the target is Knocked Over.

¹ In order to achieve an effect against one of these Locations the flexible weapon must at least be of Long length. When one of these Locations is hit by such a weapon, the target and the user should compare Deftness Group Effect Die rolls. If the user's is higher he gets to make a second BCS roll subject to all the modifiers present for the first one. If the roll is successful he will also have scored an Entanglement effect on an arm. A critical hit will get both arms.

² If one of these Locations is hit on a man in Stance with a missile weapon all benefits of Stance are lost. He is treated as if he were Engaged for purposes of getting off a shot and all fire is treated as Hip fire.

Knife (Frontal)^T DFT + SPD + Combative 3

This Skills is also a specialized form of Single Weapon Skill. It governs the specialized use of short, edged weapons which are held in one hand, such as knives, daggers, broken bottles, razors and short bayonets.

Due to the training in this Skill, there is no penalty when using the Off-hand to make an attack. This is not a Two Weapon Skill, however, so a character attempting to fight with two knives is subject to the rules for two weapon combat.

Some of the weapons governed by this Skill allow the fighter to make a second attack without forfeiting his Weapons Defense Ability, If the fighter chooses to make a third attack with such a weapon in one Attack Action, he will forfeit his WDA for the number of phases required to complete the Action.

Longsword (Frontal)^T STR + DET + Combative 3

This Skill governs the use of two-handed edged weapons such as longswords and greatswords. Non-edged weapons such as pipes and staves may also be used but suffer a modification to the BCS of (user's point of "aim" minus 6). Such weapons will have a secondary strike only if they normally do and they are not Extra Long in length.

This Skill allows a specialized secondary strike with some weapons. The fighter must declare that a secondary strike will be made. He will lose the benefit of his Weapons Defense Ability during that Action. If the first attack misses he may immediately roll for a second attack using an Average BCS. If the first attack hits, no secondary strike is made.

This Skill allows a fighter to use a sword that is normally one-handed if the handgrip is long enough to get two hands on it. When using such a weapon with Longsword Skill he will increase the weapon's WDM by his Strength Group divided by 10.

Nunchaku (Frontal)^T DFT + STR + Combative 3

This Skill governs the use of the Nunchaku, a short flail, The user of Nunchaku Skill is trained to use either one or two weapons.

Use of two weapons is subject to Strength Rating limitations. Each nunchaku is capable of a secondary strike. Use of the secondary strike when using a single nunchaku costs the character the loss of his Weapons Defense Ability for that Action. With two nunchaku in use, the Weapons Defense Ability is not lost unless both are used to make secondary strikes.

Nunchaku may be used in the same fashion as Tonfa with regard to Unarmed Combat Skill Grapples and Counters. The WDM of a nunchaku in this use is 1.5.

Polearm (Frontal)^T STR + DFT + Combative 3

This Skill governs the use of hafted weapons requiring two

hands such as halberds, spears, rifle and bayonet combinations, etc. Such weapons are usually allowed a secondary strike known as a butt stroke. Secondary strikes of this type are not allowed to be made into Long Front or Long Side hexes. The butt stroke has a WDM of 1 and does C type damage.

Sai (Frontal)^T DFT + STR + Combative 3

This Skill governs the use of the Sai, a dagger-shaped, non-edged steel rod. This weapon is pointed at the tip and has two long tines curving down from the hilt along the blades. The Sai may be used to Strike doing C type

damage with a WDM of 1.7. It may also be used to Thrust with a WDM of 1.2 doing Lethal damage.

The user of the Sai Skill is trained to use one of two of the weapons and the BCS of the second Sai is subject to averaging with the character's Off-hand Dexterity score. When using one weapon a secondary attack is allowed only when making a Strike attack. Secondary attacks when using two Sai follow the rules for Two Weapon Skill.

When utilizing a Defend Option a character with Sai Skill may either gain the increase in Overall Defense Ability or retain his normal value and gain a special ability. This ability allows the user to attempt to disarm an opponent attack him with a Hand-to-hand weapon. If the attack made by his opponent would have hit the Sai user if he had had no Overall

Defense Ability, the Sai user may exercise this ability. Each character will roll his Strength Group Effect Die. If the Sai user's result is higher, the opponent is disarmed and the weapon will land 1D3 meters away in a random direction.

If using the Option "Clash of Weapons," whenever the circumstances arises that a clash is called for, the Sai user may attempt to disarm his opponent. Failure to disarm his will subject the Sai to chances of being broken.

Single Weapon (Frontal) STR + DFT + Combative 3

This Skill governs the use of one handed weapons in combat. Any weapon designated as one-handed may be used. The user usually has his off-hand empty.

Two Weapon (Frontal)^T STR + DFT + Combative 3

The user of this Skill holds a one-handed weapon in each of his hands. The weapons allowable due to weight and wieldiness are dependant on the character's Strength as detailed on page 5 in Book 1.

With this Skill a second, not secondary, attack is allowed. The fighter will lose the benefit of his WDA during the Attack Action. The first attack is assumed to be made with the weapon in the favored hand. It receives a -1 to the BCS. The second attack is assumed to be made with the weapon in the off-hand. The BCS is averaged with the character's Off-hand Dexterity and receives a modification of -1 before any other modifiers are applied.

When not using it to attack the fighter is assumed to be using the weapon in the off-hand for parrying.

Tonfa (Frontal)^T DFT + STR + Combative 3

This Skill governs the use of the Tonfa, a weapon resembling a billy club with a short handle, at a right angle to the shaft, at one end. The user of this Skill is trained in using one or two of the weapons. When using two Tonfa, the standard rules for Two Weapon Skill apply. As this is a specialized Skill, the character may not use other weapons in the manner of Two Weapon Skill unless he has that Skill.

Besides making normal weapon attacks, the character with Tonfa Skill may use it in another fashion. The score in the Skill is averaged with the character's score in Unarmed Combat Skill. This allows the character to perform Unarmed Grapples as presented in Unarmed Combat Skill. When using one Tonfa in this fashion the character's WDM for the Grapple is increased by 1. This technique uses one Tonfa and a free hand. This averaged BCS also allows the character to attempt Counters in defending against attacks using Unarmed Combat Skill.

Unarmed Combat^S DFT + SPD + Combative 3
(Character's option)

This Skill represents a no-holds-barred conglomeration of modern martial arts techniques. There are three different techniques available to the character using this Skill:

Striking, Throwing and Grappling. Both of the character's hands must be free to use the latter two techniques. When fighting an opponent who is using Unarmed Combat Skill or Brawling Skill, a character does not receive the Situational Modifier penalties for attacking to a Side or Rear hex or those for prone or kneeling position.

STRIKING TECHNIQUES

These attacks are made with the hands or feet. They normally do C type damage but, on a Critical Hit, they will do B type.

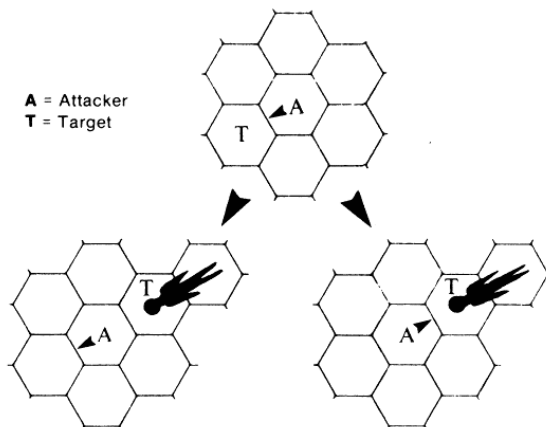
HAND BLOWS: One hand blow may be made with each Hand in an Action. The second blow is averaged with the Off-hand Dexterity score and causes the character to lose his Weapon Defense Ability for that Action. When only one hand is used for striking, the character is assumed to be parrying with his other forearm, or hand. Hand blows are treated as Short length weapons. They have a WDM of 1 + (AV on the hand/20) or 1 + ("Aim"

score in Unarmed Combat/10), whichever is greater. A hand blow receives +5 to the Hit Location roll.

KICKS: Normally one kick per Action is made but the character may elect to make a second attack in the same fashion as is done with Longsword Skill. Even with a single kick the character's Weapon Defense Ability is halved and rounded to the nearest. Kicks are dealt with as Average length weapons and their WDM is calculated as for hand blows. For purposes of determining the Damage Potential a character using a kick will have his effective Strength increased by 1 Group. If a kick is parried (a miss falling into the range of the target's Weapon Defense Ability), the attacker must make a Speed Ability Saving Throw or fall down. Kicks receive a -5 to the Hit Location roll.

BLOWS AGAINST ARMOR: Rigid armor halves the Damage Potential of hand blows and kicks and makes all damage received subdual only. Other armors act normally. If the Armor Value of the Location struck exceeds the Armor Value on the attacking character's hand or foot, the attacker will take the difference between them in subdual damage. A character with Unarmed Combat Skill has a minimum AV of 1 + his "Aim" score in the Skill for the purpose of comparing these Armor Values only. It does not act as armor against incoming attacks.

LEAPING KICKS: This is a specific tactic. It must be declared when the Action is initiated. The character may execute any Jumping Action available to him at that time. He will resolve a single kick at the end of the Jump Action. The character has a Combat Dodge Ability of 1 greater than his normal value and no Weapons Defense Ability. Against missile fire he has twice his normal ODA. He will resolve the kick using an average BCS in Unarmed Combat Skill and will receive a negative modifier of -1 for every 2 meters or fraction thereof traveled in the Jump. If the target moves before the Jump would be resolved, it will be resolved in the standard fashion of missile attacks whose target disappears before resolution. A successful attack gives the character a +2 (1 for Jumping and 1 for kicking) to his effective Strength Group for determining his Damage Potential. If the leaping kick misses the character must make a Speed Critical Saving Throw to avoid falling. If the kick is parried or a Critical Miss occurs the character will definitely fall.



Facing of Thrower and position of victim.

THROWING TECHNIQUES

A character may attempt to throw an opponent in his own hex or any of the adjacent hexes. He receives a +1 to his BCS when the opponent is in the same hex. Only one throw attack may be made in an Action.

A Hit Location of the head, neck, torso or arms, (LOC 1-12 and 21-30) indicates a full throw where the opponent is lifted bodily and thrown to the ground. Normally he will land 180 degrees away from the hex which he just vacated. His upper half will be in the hex nearest the thrower. The thrower may change this hex by 60 degrees per point of "Aim." The thrower has the option of maintaining his facing or turning to face the hex into which the opponent was thrown.

The thrower also has the option of keeping or releasing his grip. If he keeps it a Deftness Ability Saving Throw will allow him to make an immediate free attack" using Grappling Technique. If he releases his grip, a Strength Ability Saving Throw will allow him to hurl his opponent 1 meter through the air before he lands.

If a thrown character is made to occupy a hex which already has a character in it, they are treated as if the thrown Character was attempting a Deliberate Knockdown of the other character except that the thrower's Strength is the one used to make the Effect Die roll. See Book 1, page 31.

A Hit Location to the legs (LOC 13-20) indicates a "foot sweep" resulting in a fall for the opponent. He falls away from the attacker. The thrower may

attempt a Grappling Technique “free attack” with a Deftness Ability Saving Throw. Treat as a thrown character if the hex into which he falls is occupied.

The full result of an effective throw does not occur simply with a successful BCS roll. The Effect Number must be determined and compared with the table below. Note that an Effect Number of at least 4 is required for the opponent to be actually thrown. A Critical Hit will add 10 to the Effect Number. Treat the plus with Critical Hits as the WDM for any subdual damage incurred by the thrown character. Critical Effects of Sever are treated as broken bones.

BREAKFALLS: A thrown character who has Unarmed Combat Skill may attempt to use that skill to lessen the effects of a throw. The character will make a BCS roll using an average BCS. If successful he will reduce the thrower’s Effect Number by the Effect Number that he has just generated. If this reduces the thrower’s Effect Number below 0 then the character scheduled to be thrown will receive no effects from the attacker’s actions.

UNARMED COMBAT THROW TABLE

Effect Number	Outcome of Throw
0-1	The throw is incomplete. Target must abort any Action in progress that does not resolve that Action Phase. If able under the normal rules for initiation of Actions, he may reinitiate the Action on the next Phase.
2-3	Target is treated as Dazed (see Book 1, page 30) for a full Combat Turn. He remains on his feet.
4-6	Target is actually thrown. He will be prone on the next Action Phase. He is also subject to the results of an Effect Number of 0 or 1 and must make the usual Saving Throw to avoid the effects of a fall (see Book 1, page 32).
7-9	As 4-6 above and the thrown character will take subdual damage equal to the thrower’s Strength Group Effect Die roll. Armor will not reduce this damage but each level of Blast Buffering will eliminate 5 points of it.
10+	As 7-9 above plus the victim must make an immediate Health Ability Saving Throw or succumb to System Shock. Blast Buffering will add twice its level to the number needed.

GRAPPLING TECHNIQUES

These techniques represent cunning grips on limbs, chokes designed to render an opponent unconscious or simple pinning holds. They are intended to disable or subdue an opponent. Normally they may only be used against a prone enemy or one in the same hex.

Against a prone opponent the character may perform a Change Position Action as part of an Unarmed Combat Grappling Attack Action. The attack is resolved at the end of the Action. If the character has succeeded with a Deftness AST following a successful throw, he is assumed to have done this as his “free attack.”

If the character makes his Unarmed Combat BCS roll when using Grappling Technique, the hold is in effect and will remain so without necessity for further BCS rolls until the character releases the hold or his opponent breaks it. Damage is resolved at the end of the Action during which he maintains that grip. Damage done by Grappling Techniques is 50% subdual and 50% “psuedo-damage” which is only accumulated to determine when a Grapple is complete.

The Hit Location indicates the type of technique being applied. A Hit Location to a limb (LOC 13-30) indicates a Limb lock. One to the torso (LOC 10-12) indicates a Pin and one to the head or neck (LOC 1-3) indicates a Choke.

LIMB LOCKS: Limb locks do damage with a WDM equal to 1 + the character’s total score in the Skill divided by 20 and rounded to the nearest tenth. The victim is unable to move except at the grappler’s whim. If the Limb lock is on an arm, the grappler may force the victim to move at a maximum rate of a walk. If the Limb lock is on a leg the victim will be held motionless. This mastery is achieved when the total damage done by the Limb lock exceeds the victim’s Strength. The victim of a successful Arm lock must release anything held in that hand.

If he wishes the grappler may attempt to disable the limb when voluntarily releasing a Limb lock. He rolls a Strength Saving Throw. If the result is in his Critical Saving Throw range, the limb is broken. If it is in his Ability Saving Throw range, the limb will take critical damage. If the throw is in neither range the limb receives damage which will disable it but the damage will heal as if it were subdual damage. A critical failure means that the victim receives no damage from the attempt at all. The damage done by such a technique is determined by the grappler’s Strength Group Effect Die roll. Such a release requires an Action to perform.

PINS: A Pin result against a non-prone opponent is treated as a miss! A successful Pin means that the opponent is held motionless on the ground by the grappler. To be successful the accumulated damage must exceed the victim’s Strength. Once successful the accumulated damage must exceed the victim’s Strength. Once successful, the grappler may only continue to hold his victim motionless or try to shift his grip. Shifting grip requires a new BCS roll. The grappler will receive an extra point of Aim even if he normally has none. If the new BCS roll fails, the Pin is lost and the opponent is free. Unless he has Unarmed Combat Skill (when he will add his WDA) the victim will only have his Combat Dodge Ability to oppose the BCS of an attempt by a grappler to shift his grip.

CHOKES: Chokes are treated as Pins with the following exceptions. The accumulated damage is measured against the victim’s Health. When his Health is exceeded he will be unconscious as if he had succumbed to System Shock. If the Choke is maintained past this point, all damage done will be subdual. For each successive Action of Choking the grappler will now increase his effective Strength group by 1 for determining damage. He will eventually kill the victim by “subduing him to death” (see Book 1, page 36).

Rigid armor will prevent a Choke from being successful and Semi-Rigid armor will subtract its Armor Value from damage done. Other armor Formats have no effect on a Choke.

DEFENDING AGAINST GRAPPLING TECHNIQUES

Once the opponent has established a Grappling hold, a character may only attempt to get free. He may not use a Grappled limb. If the hold is a Pin or a Choke, he is treated as if he were one step more encumbered. If this makes him more than Fully Encumbered he will lose an additional 25% from his Deftness and Speed and his BCS roll will have a modifier of -8 to the score needed for success. The character has the following options:

- Assuming the correct limbs are free, he may make an attack with any available Hand-to-hand Combat Skill at a penalty to the BCS of 50% or -5 whichever is greater. For Effect Die determination his Strength Group will be reduced by 1 in addition to any modifications due to weapon length.
- He may attempt to make a successful average BCS with his Brawling Skill. This will break the hold but will cause no damage to the grappler.
- He may attempt to make a successful Unarmed Combat Skill BCS roll. This will break the hold but cause no damage. If the result is a Critical Hit, he is allowed an immediate “free attack” with that Skill.

Situational modifiers due to positioning do not apply in these attempts and the grappler has his full Overall Defense Ability.

OPTION COUNTERS IN UNARMED COMBAT

When a character using Unarmed Combat Skill is attacked and the opponent’s attack fails in the range of the character’s Weapon Defense Ability, the character is allowed a “free attack” against the attacker. He may use any Technique but the type must be declared before the BCS is rolled. The “free attack” is subject to the normal modifiers.

If the character using Unarmed Combat Skill is utilizing a Defend Action, any attack which misses will allow the character to make a “free attack” on his opponent.

Weapon and Shield (Refused)^T STR + DFT + Combatative 3

The user of this Skill holds a one-handed weapon in his favored hand and has a shield on his off-hand arm. The character is treated as if he were using two weapons in terms of weapons and shields allowable due to weight and wield mess. Use twice the Shield’s ENC value as a weapons Strength Rating for this purpose.

A secondary attack is allowed using the shield. It is subject to the usual rules for such attacks. The WDM for a shield used in this way is the Shield Factor divided by 10. Damage is C type.

Large shields add to a character’s Overall Defense Ability in Hand-to-Hand combat and all shields add to the Overall Defense Ability against any missile attacks coming in through the character’s Front hexes.

A shield is struck by an attack when the attack is successful and the Hit Location is covered by the shield or when the die roll for an unsuccessful attack is in the range protected by the shield. The range protected by the shield is equal to any additions the shield gives to the character’s overall Defense Ability and, in the case of a Hand-to-Hand attack, the character’s Weapon Defense Ability.

A missile attack that falls into the range protected by the shield still has a 50% chance of attacking the character. It does the missile weapon will still be reduced by the Minimum Barrier Effect of the shield. Roll for Hit Location normally.

Basic Statistics on Shields:

Class	+ to CDA vs. missiles	+ to CDA in HTH Combat	Factor	Locations Covered	Description
1	1	0	2	30	Very Small
2	2	0	5	28, 30	Small
3	3	0	10	26, 28, 30	Medium
4	4	1	15	24, 26, 28, 30	Large
5	5	2	25	22, 24, 26, 28, 30	Very Large

Minimum Barrier Effect (Barrier value of material x thickness)
 Overall Barrier Effect = (Class/2, up) x (minimum Barrier Effect)
 ENC value = (overall Barrier Effect x Factor x thickness x K)
 K = .005 for plastics; .02 for metals; and .01 for other materials.

A shield struck in a successful attack must be penetrated before any damage can be applied to penetrating the armor of the target. Bullets will have their BDG reduced by the minimum Barrier Effect of the shield. This yields the effective BDG used to determine the die to be rolled for the Damage Potential. Arrows and crossbow bolts will have their effective Strength Group reduced by 1 for every 10 points or portion thereof of Barrier Effect. Other muscle powered missile weapons and Hand-to-Hand weapons have their normal Damage Potential determined. From this is subtracted the minimum Barrier Effect of the shield. The result is the effective Damage Potential which may then be applied to the target. Any time that the normal Damage Potential of a successful attack exceeds the overall Barrier Effect of the shield that shield is reduced to the next lower class.

A shield struck by an unsuccessful attack will be attacked. Bullets will reduce the shield by one class if their effective BDG upon striking the shield exceeds the overall Barrier Effect of the shield by 3 times its value. Arrows and crossbow bolts will not reduce the shield but will stick in the shield and add their ENC value to the shield's value. Other muscle powered missile weapons will attack the shield as Hand-to-Hand weapons do and will stick in the shield to add their ENC value if the shield user does not make a Dexterity Ability Saving Throw to dislodge them. Hand-to-Hand weapons will reduce the shield class by one if damage done is twice the minimum Barrier Effect of the Shield.

It requires 1 Action to remove a shield and 2 Actions to put on, sling or unsung a shield.

Consider Kelly and his old police shield. The shield is Class 4 and is made of one-half inch of heavy plastic. The upper third is clear, The Barrier Value of the plastic is 20.

Minimum Barrier Effect is 1/2 times 20 or 10. Overall Barrier Effect is the Class (4) divided by 2 times the Minimum Barrier Effect (10) for a value of 20. The ENC Value is the Overall Barrier Effect (20) times the shield's factor (15 for Class 4) times the thickness (.5 inch) times a constant (.005 for plastics) yielding a value of .75 ENC.

Kelly's Skill score in Weapon and Shield is 80 giving him a Weapon Defense Ability of 4. When he is attacked in Hand-to-Hand combat, he will add this Weapon Defense Ability to his Combat Dodge Ability to get his Overall Defense Ability. Since he is using a Class 4 shield he will add an additional 1 to this for a total Overall Defense Ability of 7. (His Combat Dodge Ability is 2).

An opponent's attack could miss him totally, strike him cleanly, strike the shield, or hit him on a portion of his arm covered by the shield. If his opponent's Basic Chance of Success were 15 it would be determined like this:

- Die roll less than or equal to 15 minus 7 (that is BCS minus ODA) means Kelly has been successfully struck. Hit Location is rolled for normally. If the Hit Location die roll indicates that the attack is to be resolved against one of the Locations stated as being covered by the shield (see chart on this page) the shield itself must be penetrated as well as any armor on that Location before damage is assessed against Kelly.
- Die roll between or including 11 and 15 (that is the range covered by Kelly's WDA and any pluses to ODA given by the shield) means that the shield itself has been struck. Damage against it is assessed as indicated above.
- Any other die roll indicates a clean miss. Note that results of 9 or 10 are misses due to Kelly's CDA.

Missile attacks against a character carrying a shield are resolved in a similar fashion. Of course the character may not apply his Weapon Defense Ability against a missile attack but his Combat Dodge Ability may be enhanced by the type of movement in which he is engaged. Any attack die roll falling in the range "protected" by the shield's plus to the Overall Defense Ability is considered to attack the shield. Thus, in Kelly's case, against an opponent with a BCS of 15, the shield adds 4 to his ODA. Any attack die roll from 12 to 15 would attack the shield.



MUSCLE POWERED MISSILE WEAPONS ^{E,T}

Archery (Refused)

DFT + WT + Combative

3

This Skill governs the use of a bow of any sort. The Basic Chance of Success is modified by the strength of the bow, the range of the target, the type of arrow being fired, and the situation. Bows have no Weapon Damage Multiplier, This is dependant on the type of arrow fired. The Strength Group used to determine the Effect Die rolled is also range dependent. The percentage chance of an arrow hit achieving a Missile Special Effect is equal to the Damage Potential.

Bows are rated by their Pound Pull. This will determine their Range Factor, Durability and Encumbrance value.

Range Factor (RF) = Pound Pull/10, rounded nearest.

Durability (or DUR) = Range Factor/2, rounded nearest.

Encumbrance (or ENC) = Range Factor/10, rounded nearest tenth.

Thus, a bow with an 80 Pound Pull has a Range Factor of 8, a Durability of 4 and an Encumbrance of .8.

How far a bow will throw an arrow, how clean the shot will be and how long the bow takes to draw will be dependent on the character attempting to use the bow.

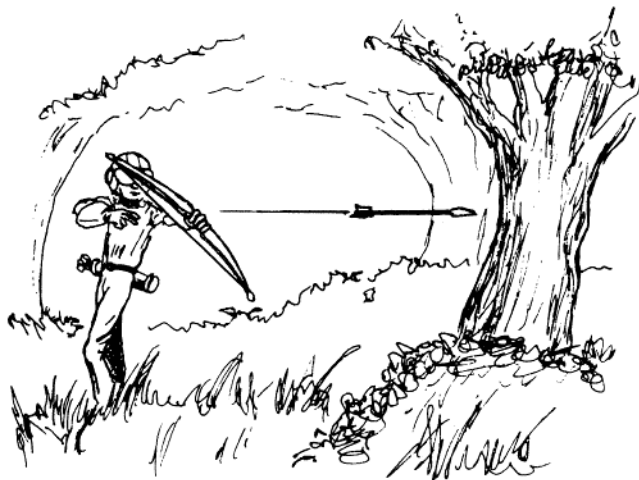
Strength of Bow versus User Strength:

Bow Range Factor greater than or equal to	results in BCS mod.	Actions to Reload
4 x STR Grp	unusable by character	
3 x STR Grp	-4	2
2 x STR Grp	-2	1
1 x STR Grp	+0	0

Thus an 80-Pound Pull bow is unusable by a character with a Strength Group of 1 or 2. A character with a Strength Group of 3 or 4 may use the bow with a BCS modification of -2 and one Action must be spent in loading and drawing the bow before it may be fired. A character with a Strength Group of 5 would fire the bow with no modifications due to the strength of the bow and could fire an arrow on each of his Actions.

An arrow may be held knocked and ready to fire for a number of Actions equal to the user's Strength Group.

Should a character's Effective Range be less than 5 meters, 5 meters becomes the upper limit on his Effective Range and the value calculated for his Effective Range becomes his Point Blank Range.



OPTION Wind Effects to archery

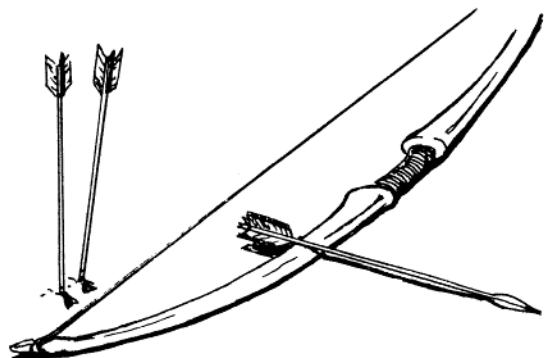
Head Wind	-1 to STR Grp for range calculations
Tail Wind	+1 to STR Grp for range calculations
Crosswind	-1 to BCS for each 5 knots of wind speed

Range Modifications for Bows

Category	Distance in meters	BCS mod.	Eff STR Grp for Effect Die
Point Blank	5	+1	+1*
Effective	RF x STR Grp	+0	+0
Long	5 x RF x STR Grp	-1	-1
Maximum	10 x RF x STR Grp	-2	-2
Extreme	20 x RF x STR Grp	-5	-3

Modification to Weapon Damage Multiplier of .1 x STR Grp.

Modifications due to arrows in use:	BCS mod.	WDM
Target arrow	+0	1.8
Armor piercing arrow	+1	1.5
Hunting arrow	-1	2
Barbed arrow	-2	2.5
Improvised head	as appropriate	½ normal
Improvised shaft	-1	
Improvised fletching	-2	
Aluminum or Fiberglass shaft	+1	
Modifications due to situation		
Situation	BCS mod.	
Archer's ring	+1	
No "bracer"	-1	
Interfering clothing	-2	
Sights in use	+1	



Blowgun (Frontal) HLH + WT + Combative 3

A blowgun is a delivery system for darts carrying some kind of drug. Dart damage is calculated for penetration purposes only. Darts will never damage shields. The Effect Die for determining the penetration is based on the users Health Group. The die result is multiplied by the WDM of the dart. If the result is greater than or equal to the Armor Value on the Location hit, the substance of the dart will be introduced to the target's system.

Range Modifications

Category	Distance in meters	BCS Mod.	Eff. HLH Grp for Effect Die
Point Blank	2 meters	+ 1	+1
Effective	HLH CST	+ 0	+0
Long	HLH AST	-1	-1
Maximum	HLH	-3	-2

If a character's Effective range is less than 2 meters, 2 meters becomes his effective range and the calculated value becomes his Point Blank range.

Modifications due to darts in use:	BCS Mod.	WDM
Improvised	-2	0.8
Fire hardened wood	-1	1.0
Metal	+0	1.3
Modifications due to wind		
Light	-1	
Moderate	-3	
Strong	-6	
Gusty doubled strength value of wind		

Bola (Frontal) DFT + WT + Combative 3

This weapon system requires 1 Action to prepare and a minimum of 1 Action to windup to toss. For each additional Action spent in windup the range

groupings will be modified by a multiplier of .5 per Action to a maximum of 3. Thus, after 4 additional Actions of windup the upper limits of all range groupings will be multiplied by 2.

Use of this weapon requires a clear area around the character. The minimum radius of clear space is 1 meter. Each additional Action of windup will increase this radius by .5 meters. Any obstruction that occurs during the windup will abort the attack with the bola. The object or character that aborted the attack will receive a Strike attack from the bola.

A character may maintain a bola in windup for a number of Combat Turns equal to his Strength. A character maintaining a windup may only move 1 meter per Action.

This weapon has two forms of attack and the form in use must be specified before the attack is resolved. Strike is an attack to damage. The Gamesmaster, using a flat curve, will determine how many of the balls in the bola strike. Each ball has a WDM of 1 .5C and an ENC value of .2. The Effect die is rolled separately for each ball that strikes. Capture is an attack which does not directly damage. Again the Gamesmaster determines how many of the balls actually affect the target. The total number striking is multiplied by .5 to get the WDM to be multiplied by the Effect Die roll. This will yield an Effect Number for use with the Entanglement Attack rules given with Flexible Weapon Skill.

The Damage Potential is the percentage chance of a missile special effect occurring. A Flesh Wound result for a Capture attack requires the target to make a Speed Ability Saving Throw to avoid a fall.

Range Modifications Category	Range In meters	BCS Mod.	Eff. STR Grp for Effect Die
Point Blank	STR CST	+0	+1
Effective	STR AST	-1	+0
Long	STR	-2	-1
Maximum	2 x STR	-4	-2

If the character's calculated range lies within the radius of his windup, he may not attack at that range grouping.

Crossbow (Frontal) DFT + WT + Combative 3

This skill governs the use of all crossbow type weapons. The Basic Chance of Success is modified by the range to the target, the type of bolt being fired, and the situation. The Weapon Damage Multiplier is, like bows, dependent on the type of bolt being fired. Unlike bows, the range and damage done is based on the weapon rather than the character using it. Crossbows have a recoil effect which may affect the user's chance of hitting his target. The percentage chance of a bolt hit achieving a Missile Special Effect is equal to the Damage Potential.

Crossbows are rated by their Pound Pull as are bows. The Pound Pull/2, nearest is used for crossbows as the user's Strength is used with bows, to determine ranges and the effective Strength Group for Effect Die determination. Thus, a crossbow with a Pound Pull of 120 would have a "Strength" of 60 and a Strength Group of 7 with an Effect Die of 2D10 +2. This Strength Group would be used to make the range calculations and would receive the modifications due to range for determining the Effect Die to be rolled.

The Range Factor, Durability and Encumbrance values for a crossbow are calculated in a fashion similar to that done for bows.

Range Factor = Pound Pull/10, rounded nearest tenth

Durability Range Factor/3, nearest

Encumbrance Range Factor/5, nearest tenth

Thus, a crossbow with a Pound Pull of 120 has a Range Factor of 12, a Durability of 4, and an Encumbrance of 2.4.

The recoil effect of a crossbow will give the user a negative modification to his BCS. If the recoil effect calculation yields a negative number there will be no effect to the user's BCS. It does not give a positive modification.

Recoil Effect = (RF/2, nearest) - Strength Group

For determination of effects to BCS and for the Weapon Damage Multiplier to use, bolts function in all ways as do arrows.

A crossbow's Point Blank range is 10 meters, not 5 as with a bow.

Unlike a blow, a crossbow must be cocked. Once cocked, it may be carried loaded and ready to fire. A crossbow requires a number of Strength Points equal to its Pound Pull in order to be cocked. For each Action spent cocking the crossbow, a character may apply his Strength in Strength Points toward cocking the crossbow. If the crossbow's Pound Pull is greater than or equal to 4 times the user's Strength, the user will be unable to cock the crossbow without the aid of a mechanical device. If the mechanical aid is incorporated into the crossbow, it will take one additional Action before the

weapon is reloaded. If the aid is separate, two additional Actions will be required. If the multiplier for a separate mechanical aid does not put the character's Strength into the range where he would be allowed to cock the weapon if that were his natural Strength, that crossbow may not be cocked and a more powerful aid or a stronger character is required.

Mechanical aids:

- separate: Belt hook x 1.5
- Goat's foot x 2
- built in: Cranechin x 1.8
- Windlass x 2

Crossbows have an inherent BCS Modification of +3. As with all inherent BCS modifications, once the character's BCS in the governing Skill exceeds the sum of his Combative Talent and the Inherent Modifications the modification is no longer used.

A character in Stance with a crossbow may sight in.

Sling (Frontal) DFT + WT + Combative 3

The sling is a simple "sling of David." The rules governing its range and the increase of range by longer windup are the same as for Bola Skill. The WDM that the sling imparts to its bullet will depend on the number of turns spent in windup. A character has an effective upper limit on the number of turns spent in windup of his Strength Group. This is for purposes of determining the WDM only. It does not apply to range.

Actions in windup 1 2 3 4-5 6-7

WDM C type damage: .5 1 1.5 2 2.5

Improved bullets such as pebbles will give a -2 modification to the Basic Chance of Success.

The percentage chance of a missile special effect is equal to the Damage Potential.

Slingshot (Frontal) DFT + WT + Combative 3

Slingshots are rated for Elasticity. The effective Elasticity of a slingshot is the actual elasticity or the user's Strength Group, whichever is lower. The upper limit on the range groupings is multiplied by the effective Elasticity.

Range Modifications

	Distance In meters	BCS Mod.	Eff. STR Grp. for Effect Die
Point Blank	3	+1	+1
Effective	5	+0	+0
Long	10	-1	+0
Extreme	15	-2	-1
Maximum	20	-4	-2

The WDM of the slingshot is equal to the effective Elasticity divided by 2. The damage is C type. BCS modifications for ammunition are the same as for slings.

The percentage chance of a missile special effect is equal to the Damage Potential.

Throwing (Frontal) DFT + WT + Combative 3

This Skill represents a trained ability to throw weapons. It is required for the successful throwing of such things as knives, small axes and spears but such things as rocks, hand grenades, and chairs may be thrown without recourse to this Skill. In the latter case, a character with the Skill is more likely to hit his target than one without it.

To be thrown without penalty, the Strength Rating of the weapon must be less than the Strength Group of the character. For each point over this number there is one penalty shift on the range table. The BCS modification, the Strength Group modification and the throw required for Deftness are

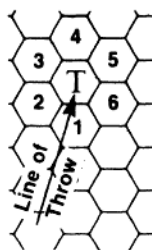
shifted to the next most difficult category for each penalty shift. Distances do not alter. Thus, a character attempting to throw a weapon with a Strength Rating of 5 while he has a Strength group of 3 will receive a penalty shift of two. If the target were 6 meters away (within his normal Long range) he would have the BCS and Strength Group modifications as if it were two range steps further away (Maximum range).

Throwing Range Category	Distance in meters	Modifications		Grp. throw required if not using Skill
		BCS mod.	STR DFT mod.	
Point Blank	2	+1	+1	2 x AST
Effective	STR CST	+0	+0	AST
Long	STR AST	-1	+0	CST
Extreme	STR	-2	-1	CST/4, down
				1
Maximum	2 x STR	-4	-2	
—penalty	-3	1 followed by CST		
shift value -8				
	-16	-4	1 followed by 1	
	will not hit	will not hit		

When throwing heavy, non-aerodynamic objects reduce all ranges by 75%.

The percentage chance of a missile special effect with a thrown, non-explosive weapon is equal to the Damage Potential.

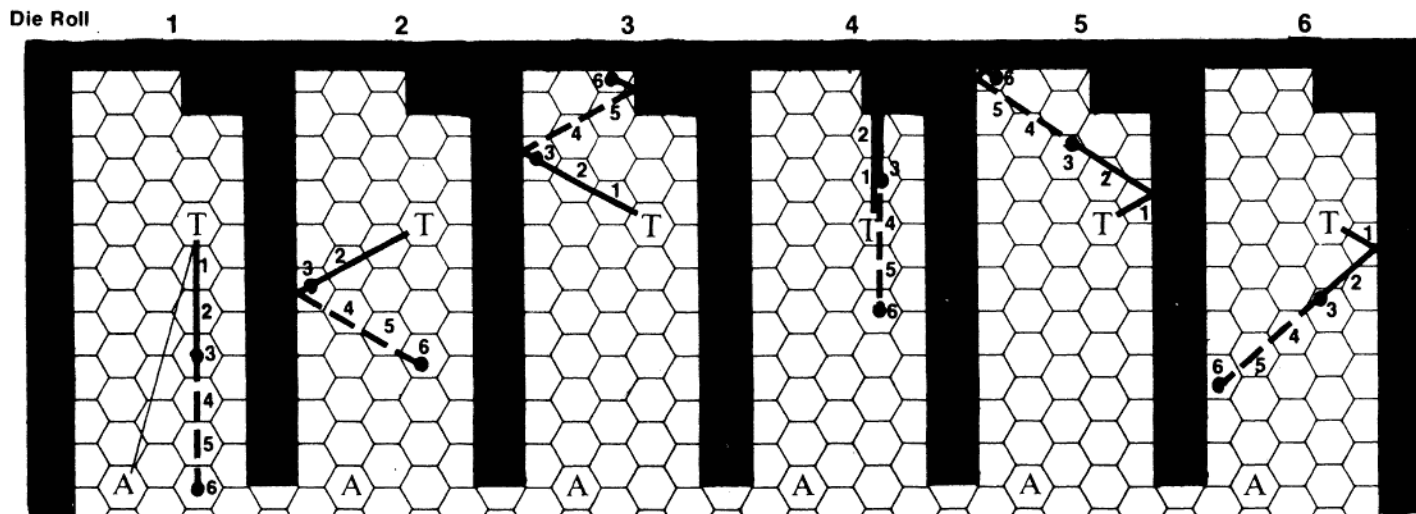
A character may utilize his throwing Skill BCS of his Deftness in making a throw, whichever will give him the best chance of success.



Determination of Direction

Example assumes a missed BCS roll by the attacker (A is using Throwing Skill to hit target T). The margin of miss is 3 meters (from 2D3). The path to determine where the weapon falls is indicated by the solid line. A critical miss, doubling the margin of miss, is indicated by the dashed line.

When a character fails to hit his target with a throw, the object thrown is subject to landing somewhere else. This is particularly pertinent when the character is tossing hand grenades. An object which misses will fall 2D3 meters from the target in a direction randomly determined by 1D6. The hex in the target's Zone of Influence that is intersected by the line drawn between the center of the thrower's hex and the center of the target's hex is considered to be 1 and the numbering proceeds clockwise from there. For simplicity, treat the object as if it were travelling from the target's hex to determine the destination hex. If the object encounters an obstacle before it has covered the required distance from the result of a throw of 2D3 (a Critical miss will double this distance), it will bounce according to the laws of physics. That is, its angle of reflection will be equal to its angle of incidence. This is a guideline for handling misses. It should not be used if the results yield patent absurdities. The Gamesmaster is advised to follow the spirit and intention of the rule rather than being slave to its letter.



SMALL ARMS

The details of the use of firearms are given in the section on guns on page 24. It is noted here that a character possessing the skill to fire a given format of gun such as a pistol may fire any loaded and ready pistol. The Skills are separated into Modern and Primitive to deal with the preparation before firing, drill while firing and basic maintenance after firing. The Skill can also be used as a measure of the character's ability to recognize specific weapons covered by the Skill.

Pistol, Modern (standard: Presented)	DFT + WT + Combative	3
Pistol, Primitive (standard: Presented)	DFT + WT + Combative	3
Rifle, Modern (Refused)	DFT + WT + Combative	3
Rifle, Primitive (Refused)	DFT + WT + Combative	3

SUPPORT WEAPONS

Autoweapon^A	DFT + WT + Combative	1
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This Skill is dealt with in more detail in the section on guns. It is primarily designed to deal with fixed mount automatic weapons. It also is used to average with the appropriate modern Firearm Skill if the character is using a weapon which has automatic or burst fire capability and is operating it in such a mode.

Breech Leading Artillery	DFT + WT + Combative	1
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This Skill covers serving as a member of a gun crew for a modern style breech loading artillery piece. As with many of the Support weapon Skills it has little place in the standard rules which are designed for man-to-man conflict but is included in the Skills listing as a guideline.

Direct Fire Cannon	DFT + WT + Combative	1
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This Skill is intended to cover such weapons as recoilless rifles, anti-tank artillery and tank main guns.

Grenade Launcher^A	DFT + WT + Combative	1
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This Skill covers the use of such weapons as the M-79 grenade launcher and also has an averaging function with such things as rifle grenades. When a miss occurs with one of these weapons use the procedure for a miss with a thrown weapon but the destination hex will be 2D10 meters away from the target hex instead of 2D3.

Missile Launcher (Technology Use)	WT + DFT + Combative	1
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This Skill covers the launching and subsequent control of non-portable missile systems whether for surface-to-surface or surface-to-air systems.

Mortar	DFT + WT + Combative	1
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This Skill covers serving as a member of a mortar crew.

Muzzle Loading Artillery	DFT + WT + Combative	1
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This Skill covers serving as a crewmember for a primitive cannon.

Primitive Siege Engine	WT + DFT + Combative	1
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This Skill governs the design and employment of such siege engines as catapults, rams, onagers, etc.

Rocket Launcher	DFT + WT + Combative	1
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This Skill covers the use of man-portable rocket and missile systems such as bazookas, LAWs and other portable anti-tank or anti-aircraft guided missiles.

NON-TECHNICAL PHYSICAL SKILLS

Beast Riding^A	DFT + WIL + Natural	1
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This Skill governs the riding and controlling of horses.

Bicycle Riding^{T, A}	DFT + STR + Mechanical	1
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Allows operation and minor repair of bicycles, tricycles, and mopeds, A character making his Bicycle Riding BCS when under fire may add his Skill score divided by 20 and rounded down to the Combat Dodge Ability acquired for the speed of the vehicle.

Boating^T	STR + WT + Natural	1
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This Skill governs the running of small sail or oar powered vessels. It also serves to allow a character to function as a crewmember on a large vessel of the type covered.

Climbing^S	STR + DFT + Natural	1
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This Skill governs the climbing of sheer surfaces or manmade edifices. The rate of climb is the result of a Deftness Group Effect Die roll multiplied by a factor representing the difficulty of the surface. This factor is at the discretion of the Gamesmaster. A Critical Failure on the Basic Chance of Success roll indicates a fall. A normal miss requires another BCS roll with another miss indicating a fall. A successful roll indicates no progress.

When climbing natural formations Climbing Skill is also useful.

Various pieces of equipment can be useful in aiding the BCS roll, increasing the distance climbed or preventing falls.

See also Climbing in Detailed Action Time on page 25 of Book 1.

Fishing^S (Trap/Hook)	DFT + WT + Natural	2
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This Skill allows the character to acquire food from the water. The character must be using some form of equipment and will use his BCS for the type in use. If using a net he would use his Trapping BCS.

The character will acquire a number of man-days of rations equal to the result of an Effect Die roll times a multiplier representing the abundance of fish in the area. This factor is at the Gamesmaster's decree. With Trap form, use character's Wit Group and with Hook form use his Deftness Group to determine the Effect Die to be rolled.

Acquiring these rations will take the whole day. Any travel done that day will reduce the character's base BCS to one half. More than a half day's travel will prevent him from practicing this Skill.

When Trapping a plus 1 will be added to the multiplier for each set trap. When using Hooking methods, a failure indicates the loss of 1 D6 hooks while a successful roll means the loss of only 1D3 minus 1.

Gambling^{S, E}	DFT + WT + Charismatic	1
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This Skill can provide a source of income to the character if he is successful. The Effect Number of the character's roll indicates the multiplier to the base bet if he should win. If he fails his BCS roll the difference between the die roll and his BCS is the multiplier to the base bet used to determine his losses. The character's opponent will also make a Gambling BCS roll. If he makes it the Effect Number will be subtracted from the character's BCS before he rolls. If the opponent fails his roll, the difference between the roll and the BCS will be added to the Player Character's BCS before he rolls.

Initial equipment for this Skill will be dice or playing cards at the player's option.

Handicraft (specify)^S	DFT + WT + Talent	1
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This is a grouping of Skills rather than a single Skill. A character will have a specified handicraft such as rope making, basket weaving, pottery making, etc. A character may have more than one Handicraft Skill. The Gamesmaster will adjudicate which Talent is the Governing Talent for a particular Handicraft.

Any initial equipment would depend on the Handicraft in question and it is left for the Gamesmaster to decide what if anything would be received.

Seamanship^A	HLH + DFT + Natural	1
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This Skill represents the character's "sea-legs" and his general knowledge of the sea and its ways. For details of the effects of this Skill in Detailed Action Time see Effects of Water on Movement and Combat on page 32 of Book 1.

Survival (specify)^S	HLH + WL + Natural	1
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This Skill represents a character's basic capability to fend for himself in a specified environment such as Rural, Urban, Artic, Desert, or Oceanic environments. A successful BCS roll will allow a character to gather enough food for a day in the environment where his Survival Skill operates. A die roll of 1 allows a Wit Group Effect Die roll to determine the number of man-days of rations acquired.

This Skill can also allow a character to recognize danger in the environment if a successful BCS roll is made.

Swimming^A	HLH + STR + Natural	1
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Any character may play in the water but this Skill is used to forestall drowning and to swim in dangerous waters. Details of the effects of Swimming Skill on movement in the water are given on page 32 of Book 1.

Combat Skills used while in the water are usually averaged with the character's Swimming Skill.

Tracking WT + Natural + Natural 1

This Skill allows a character to follow a trail. A BCS roll must be made at each decision point (anywhere the trail may lead in more than one direction). The older the trail is, the harder it will be to follow. The exact difficulty is left to the Gamesmaster. A basic difficulty might be -1 to the base BCS for every 3 hours that have passed since the trail was made.

Trails can also be obscured using this Skill. A successful BCS allows the character to roll the Effect Die for his Wit Group. This result is the negative modifier to the BCS of anyone trying to use Tracking Skill to follow the trail.

Hunting (Trap/Shoot)^S DFT + WT + Natural 2

In form this Skill operates exactly like Fishing Skill except that it operates in a non-water environment.

When using Shooting, 1D6 rounds will be expended for each BCS roll whether or not it is successful. If the missile weapon in use has reusable ammunition, the character may recover a number of rounds equal to his Wit Group Effect Die Roll.

Search (Urban/Rural) WT + WT + Natural 2

This Skill represents a practiced ability to locate something significant. It is used for locating a useful item in a pile of junk, ascertaining the structural soundness of something like a staircase or a log over a chasm, and discovering things which have been hidden.

In general, one character will lead a search and his BCS will be modified by the number of other characters who are under his direction.

The Gamesmaster will decide if a particular application of the Skill requires Urban or Rural form.

Stealth (Urban/Rural) DFT + WT + Natural 2

This skill allows the character to move and/or perform actions quietly. Outside of Detailed Action Time, a character may move a distance in meters equal to his Base Action Phase before having to check his Stealth BCS again. In Detailed Action Time, the checks are made on each Combat Turn.

The Gamesmaster should make the Stealth BCS rolls as the character would only know he was discovered if any noise he made had been heard. A failed BCS means that the noise made by the character is a "Hidden Thing." A Critical Failure requires a second BCS roll. Success this time means that the "Hidden Thing" is discovered on an Ability Saving Throw instead of a Critical Saving Throw and failure indicates that the character has been heard.

NON-TECHNICAL KNOWLEDGES

Advanced Farming^T WT + DFT + Natural 1
(Dirt Farming)

This is a Reconstructionist Skill dealing with proper farm planning and scientific methods of maximizing production. A successful roll will increase the crop yield multiplier by .1 times the Effect Number. A failure will decrease the multiplier by the Effect Number. Critical failure results in the loss of the crop.

Soil analysis equipment, almanacs and weather forecasts, chemical fertilizers, etc., are needed to perform with this Skill.

Bowyer^T DFT + WT + Mechanical 1

This Skill allows a character to produce arrows and bows.

With the proper materials and equipment, the character may, in a day, produce arrows or work on a bow. The character can produce a number of arrows equal to his Deftness Group Effect Die roll. The production work on a bow will take a number of days equal to 15 minus his Deftness Group Effect Die Roll. In the case of a bow using wood in its construction, the wood must be cured and prepared. This process will take 2D6 weeks but does not require the constant supervision of the Bowyer.

A unit of arrow type material (whether for heads, shafts, or fletching) will serve for 10 arrows. The tools needed for this Skill are found in a Tool Kit 1. A simple knife is sufficient but will triple all working times.

Carpentry^T DFT + WT + Mechanical 1

Using various tools with this Skill, the character may build various things of wood. A job should be rated by the Gamesmaster as to how many units of material it will take, its Task Value and Period.

This Skill utilizes the basic Task mechanic. Finished Task Points are based on the character's Deftness.

Commerce^A WL + WT + Charismatic 1

This Skill is used in the barter process in attempts to get a better "price," for either the good offered or those sought. It is averaged with the character's

best Skill governing the use of the item sought or offered. In this case of averaging, the modified BCS may not exceed the BCS in Commerce although it may exceed that in the other Skill. Any Skill that deals with the item being bartered may be used to average with Commerce. For details of the barter process and the appropriate uses of the Commerce Skill see page 51.



Culture (Pre-/Post-Ruin) WT + Communicative + Esthetic 2

This Skill represents the character's familiarity with the popular culture. It covers such things as slang, social conventions, general knowledge of local groups, etc. In its Pre-Ruin form it is also concerned with history and general knowledge of the situations and circumstances prevailing at the time of the Ruin. In campaigns set long after the Ruin, the Gamesmaster may declare Post-Ruin culture as the Skill available to all characters and treat Pre-Ruin Culture as a harder-to-obtain Skill that is really History. He may also, in such circumstances, create another Skill of Legendry which deals with the popular notions of what it was like "back then." Such a Skill would be more easily attainable than History.

Dirt Farming^T HLH + DFT + Natural 1

This Skill allows a character to raise a crop. Hoes, plows, gathering equipment and seeds are needed. The basic yield is the character's Wit Group Effect Die roll divided by 2 and rounded to the nearest tenth. This is multiplied by the units of seed in cultivation to get the units of crop.

Fermentation^T WT + Natural + Natural 1

This Skill allows a character to produce such things as beers, wines, and meads. The Effect Die roll of the Group for the character's combined Wit and Deftness times 10 is the percentage of the starting materials that is transformed into liters of potable product (to a maximum of 100%). The maximum percentage of alcohol present is equal to the Effect Number. This may be reduced to any level below the maximum that the character desires.

A character may work with a number of units of raw materials (yeast, water, and fermentable material) equal to his Deftness times 2. Exercising this Skill is usually done in weekly turns. The character may perform other long-term actions during the week but he will be Hindered by his activity using this Skill.

Foreign Language (specify) WT + WL + Communicative 1

This is the ability to speak a foreign language. The exact language must be specified. Literacy in the language is a separate Skill.

Interrogation^S WL + WT + Charismatic 1

This Skill allows a character to interrogate another to get information from him. The Gamesmaster will present the interrogator with conclusions drawn from the information gotten from the subject. A Critical Miss will result in incorrect conclusions being drawn.

For each period of interrogation, the interrogating character will roll the Effect Die for the Group of the sum of his Wit and Will. This will give a base number of "interrogation points." The subject will make a Will Saving Throw. A critical save (die roll of 1) means that he will never break in this interrogation although the Gamesmaster need not inform the players of that fact. A roll in his Critical Saving Throw range will divide the base number of "interrogation points" by 3, round down, and a roll in the Ability Saving Throw range will divide them by 2, round down. When the total of "interrogation points" exceed the subject's Will Attribute score he has "broken" and will tell the interrogator what he can. If the subject's Will Saving Throw is a 20 at any point, he is considered to have broken in that session.

Application of sophisticated methods of physical or psychological torture will act as multipliers to the base "interrogation points." The exact value of

such things is left to the fiendish imagination of the Gamesmaster. Alternatively, they may make the interrogation period shorter, or make it both shorter and more effective.

A basic interrogation period of 1 hour is recommended as a starting point.

Leatherworking^T DFT + WT + Esthetic 1

Leatherworking Skill allows a character to produce well-tanned hides with a successful BCS roll. A failed roll results in poorly-tanned hides. The character may make hides into garments. This requires 1 unit of hide per Location to be covered and has a Task Value equal to the Armor Value on one Location times the number of Locations to be covered.

The process of Hardening leather takes a week. A character with Leatherworking Skill may supervise the Hardening of a number of garment equal to his Wit Group.

Literacy (specify) WT + WT + Communicative 1

This Skill governs the reading and writing of a language. When using a book the character must make a Literacy BCS roll to receive any benefits. The language(s) in which the character is literate must be specified.

Masonry^S DFT + DFT + Mechanical 1

This Skill allows the character to perform such tasks as bricklaying. The Gamesmaster will assign a Task Value and the character may perform it following the basic Task rules.

This Skill may also be used to gauge the strength of a wall or man-made edifice.

Nutritionist WT + Scientific + Natural 1

This Skill allows a character to determine the edibility of foodstuffs. This allows contaminated food to be avoided.

Repair, Muscle powered Vehicles DFT + WT + Mechanical 1

(Carpentry)

This Skill represents the character's knowledge of such things as carts, sledges, wagons, and other such conveyances, A BCS roll is made to determine the job to be done, which is then accomplished with Carpentry Skill.

Salvage Food WT + DFT + Scientific 1

(Nutritionist)

This Skill allows a character to salvage a portion of contaminated foodstuffs. A successful BCS roll allows the character to make a Wit Group Effect Die roll. This result is multiplied by 5 to give the percentage of the food that is salvaged.

Tactics WT + Combative + Communicative 1

This Skill allows a character to make observations of the tactical situation, causing the Gamesmaster to give the player information regarding the situation that the player has not figured out for himself. Such things as where the leader is, the possible presence of snipers or flanking forces, the implications of an observed move on the part of an enemy, etc., can be learned. The exact knowledge given out is at the discretion of the Gamesmaster and should be considered carefully.

Tailor^T DFT + DFT + Esthetic 1

This Skill allows a character to produce garments in Flexible, Quiltable materials. Garment production follows that presented with Leatherworking Skill.

Weaver/Spinner^T DFT + WT + Esthetic 1

With this Skill a character can produce fabric from raw materials. The raw materials are rated by the Gamesmaster in units which will provide a unit of fabric that may then be used with Tailor Skill.

TECHNICAL PHYSICAL SKILLS

Automobile Driving^T DFT + WT + Mechanical 1

(Technology Use)

This Skill governs the operation of cars and trucks.

Basic Research^S WT + WT + Scientific 1

This Skill represents the character's ability to get information from research materials, It is a basic Skill required for some sciences. In cultures with computer storage of such materials, the additional use of Technology Use will allow a character access to such materials.

Heavy Equipment Driving^T DFT + WT + Mechanical 1
(Technology Use)

This Skill governs the operation of such things as bulldozers, cranes, and other earthmovers. It also governs the driving of military vehicles such as tanks and armored personnel carriers.

Lab Technique^T DFT + WT + Mechanical 1
(Technology Use)

This Skill represents the character's ability to perform functions in a laboratory environment, It is used to perform tasks which require chemical synthesis or analysis.

This Skill is required for many advanced scientific knowledges.

Lockpicking^{T,E} DFT + WT + Mechanical 1

The name of this Skill explains its nature. The rules for locks and lockpicking are found in Book 1 on page 46.

Magnalock Penetration^{T,E} DFT + WT + Mechanical 1
(Technology Use)

Magnalocks are locks using "card-keys." They require power to be operative. If they are operative, a character with this Skill, who also has a magnatuner, can attempt to open them. They operate like combination locks (as presented on page 46 in Book 1) in that they have "numbers" in the "combination" which must be separately achieved.

Motorcycle Driving^{T,A} DFT + WT + Mechanical 1
(Technology Use)

This Skill governs the control of motorcycles. It can also be used for controlling mopeds.

Powerboat Pilot^T DFT + WT + Mechanical 1

(Technology Use)

This Skill governs the control of motor-powered small craft.

Technology Use^S DFT + WT + Mechanical 1

This is a basic Skill required for most technical Skills. It represents the character's ability to deal with mechanical contrivances and the rationale behind them. For example, to operate an elevator correctly a character would require Technology Use Skill.

TECHNICAL KNOWLEDGES

Aerial Recon Interpretation^S WT + Scientific + Esthetic 1

(Technology Use, Basic Research, and Mathematics)

A successful use of this Skill allows correct interpretation of aerial reconnaissance photographs and other similar intelligence materials.

Advanced Medical^S WT + DFT + Scientific 1

(Lab Technique and First Aid)

Many of the applications of this Skill are given in the sections on damage and healing in the first book.

Architecture^S WT + Scientific + Mechanical 1

(Technology Use, Basic Research, and Mathematics)

Besides allowing a character to perform the Task of designing structures, this Skill allows a character to gauge the structural soundness of a man-made construction.

Armorer^T DFT + WT + Mechanical 1

(Blacksmithing for metal armors/Plastics Forming for plastic armors)

This Skill allows the character with the proper tools to produce armor in the same way that a character with Leatherworking Skill produces garments, except that his score in Armorer Skill is averaged with his score in the Skill governing the material being worked in order to determine the character's BCS for performing the Task, This BCS is not to exceed the lower of the two normal Basic Chances of Success.

This Skill requires a "forge" and the proper tools for working the materials involved.

Automobile Mechanic ^T (Technology Use)	DFT + WT + Mechanical	1	governing the type of explosives in use. Details of use of this Skill are given in the section on explosive devices on page 44.
This Skill allows a character to make repairs on cars, trucks, motorcycles and other land vehicles. Repairs are treated as a Task. Details of Repairing vehicles are found in the section on Vehicles on page 62.			
Blacksmithing ^T (Technology Use)	DFT + WT + Mechanical	1	Distillation ^T (Technology Use)
This Skill allows the character to make useful items out of metal. Each item is treated as a Task and the Gamesmaster must decide on the required amount of raw material and the number of Task Points involved.			WT + Mechanical + Scientific 1
This Skill is also a basic requirement if a character wishes to make metal armor although the actual Task is accomplished using an averaged BCS.			This Skill allows the character to distill alcohol, either for consumption by humans or for vehicles. The percentage of starting materials turned into liters of usable alcohol is the sum of the character's Wit Group and Deftness Group Effect Die rolls multiplied by the Efficiency Factor of the still. A character may work with a number of units of raw materials equal to his Deftness plus his Wit. Exercising of this Skill is usually done in weekly turns. This Skill requires the character's full attention.
Practice of this Skill requires a forge and blacksmithing tools.			A home-made still built by a character with Distillation Skill will have an efficiency factor of .1 times the sum of that character's Effect Die rolls for his Wit and Deftness Groups. No still will give more than a 90% efficiency.
Botany (Pre-/Post-Ruin)	WT + Scientific + Natural	2	Electrician ^S (Technology Use)
This Skill allows the character to recognize plant life. If the plants involved have specific functions in the game, the Gamesmaster would inform the player of the nature of those functions.			DFT + WT + Mechanical 1
Chemistry ^S	WT + Scientific + Mechanical	1	A character with this Skill may perform electrical repairs and rework circuits. Such attempts are Tasks and will be treated as such. Some operations will require tools but the simple tracing of a circuit will not. This Skill does not include the design of new electrical circuits, although it will allow a character to build a new one from a circuit diagram and the proper materials.
This Skill is a basic science required for the basic performance with Skills requiring chemical knowledge.			Encryption (Basic Research)
Computer Science ^S (Programming/System Design) (Technology Use)	WT + Scientific + Mechanical	2	WT + Scientific + Esthetic 1
Each of the areas of this Skill works differently.			Decoding and encoding messages are Tasks. Decoding requires a successful BCS roll to achieve the character's Wit Group Effect Die roll in Task Points finished. Critical success indicates the code is broken and critical failure seems to indicate the same thing but the message will be read incorrectly. Encoding does not require a BCS roll but the character still requires time to perform the Task.
For each 20 points of Programming the character acquires 1 computer language. A character must know the correct language for a program in order to apply Programming Skill. Either a character knows a language or he does not. Variations on a language are treated as negative modifiers to his BCS roll. Computer languages are numbered 1 to 5 for convenience. Any Gamesmaster wishing to get into more specific detail is encouraged to do so, but he should remember that some of his players may not have the same expertise with modern computers that he does.			A code will subtract its Difficulty from the BCS roll of any character trying to break it. A character can produce a code as a Task. In weekly turns, the character may finish a number of Task Points equal to his Wit Group Effect Die roll. For every 20 points thus accumulated, the character will give the code a difficulty of 1. The maximum difficulty that a character may give to the code is equal to twice his Wit Group.
With Programming, a character may write new programs for a computer as a Task. Cracking a computer's security is a lengthy Task and should have increased turn lengths on the order of a week per turn, as opposed to a normal Programming turn of a day.			Firearms Repair, Modern ^T (Firearms Repair, Primitive and Machining)
System Design is the Skill used to coordinate the programming of a computer with the various peripheral devices which will execute the program and perform the functions called for in the program. The proper design for integrating all this is treated as a Task.			DFT + WT + Mechanical 1
Decontamination ^S (Lab Technique)	WT + DFT + Scientific	1	This Skill allows a character to restore Durability to firearms given time, equipment, and parts. It also allows a character to lay down specifications for parts of firearms to be produced using other Skills such as Machining.
This Skill represents the character's ability to cope with decontamination of persons and things with regard to nuclear, biological, or chemical contaminants. Proper technique may require equipment. A successful BCS roll will mean that the character knows the proper technique. A second roll, and the proper supplies or equipment, are necessary to complete the process.			Each point of Durability requires a unit of parts, a Tool Kit2 and the accomplishment of 10 Task Points.
Defusing Explosives ^{A, S} (Technology Use)	DFT + WT + Mechanical	1	Firearms Repair, Primitive ^T (Blacksmithing or Machining)
The name of this Skill is self-explanatory. To perform with it, a character must average his score in this Skill with the score in the Skill governing the type of explosive to be defused in order to determine his BCS. At the Gamesmaster's decree the Task of defusing an explosive device may require tools. The Task Periods may be as short as 1 Combat Turn.			DFT + WT + Mechanical 1
A failure will mean the device will explode at its planned time. A Critical failure will cause it to explode immediately. A character with a BCS of 20 will avoid the critical failure if he can make a Deftness Critical Saving Throw.			This Skill functions as the Modern form except that it is used for "primitive" firearms.
Demolitions ^{A, T} (Technology Use)	DFT + WT + Mechanical	1	First Aid ^{S, E}
This Skill governs the placement and use of explosive substances. A character will average his score with his score in the Explosives Skill			WT + DFT + Scientific 1
			This Skill covers basic medical treatment on an immediate level. Specific applications are given in the section on damage and healing in Book 1.
			Handloading ^T (Technology Use)
			DFT + WT + Mechanical 1
			This Skill allows a character to reload spent center fire cartridges when he has the tools, supplies, and time necessary.
			Handloading Kits are classified as pistol, rifle, or shotgun. They are also rated for an Efficiency Factor. Cartridges and bullets are specific to a given caliber. Primers are interchangeable and powder is allocated according to the BDG. For each reloading period of an hour, a character may assemble a base number of rounds equal to his Deftness Group Effect Die roll. This base number is multiplied by the modified Efficiency Factor of the Handloading Kit to give the maximum number of rounds that may be reloaded in that period. A single round requires 1 primer, 1 cartridge of a specific caliber, 1 bullet compatible with the cartridge, and a number of "grains" of powder equal to the BDG of that caliber.
			A round may be loaded with twice the normal powder to achieve a Hi-V round.

The Efficiency Factor of the Handloading Kit will be altered by the results of the character's BCS roll. If successful, the Effect Number times .1 will be added to the Factor and, if unsuccessful, the Effect Number times .1 will be subtracted from it. A Critical failure means that the expected number of rounds are completed but, when fired, they will automatically indicate a Critical Miss. Control Throws will be applicable at that point.

Internal Combustion Engine^s WT + Scientific + Mechanical 1
(Physics and Mathematics)

This Skill represents the character's facility with understanding and designing internal combustion engines. Design is, of course, a Task and weekly turns are usual. This is not a repair Skill.

Machining^T DFT + WT + Mechanical 1
(Technology Use)

This Skill is a metalworking Skill allowing a character to produce metal artifacts when using at least a Tool Kit 2. Each artifact will be rated by the Gamesmaster as a Task.

This Skill can also govern woodworking with power tools.

Marine Mechanic^T DFT + WT + Mechanical 1
(Technology Use)

This Skill functions as does Automobile Mechanic except that it deals with vehicles which move on the water.

Mathematics^s WT + Scientific + Communicative 1

This is a basic scientific Skill and is also required if a character is to perform mathematical computations.

Mechanically Generated Power^s WT + Mechanical + Scientific 1
(Technology Use and Physics)

This Skill represents the character's understanding and familiarity with such things as windmills, waterwheels, and other devices used to gain mechanical advantage. It also covers his ability to design such devices.

Operational Command WT + Combative + Scientific 1
(Tactics)

This Skill is used by the commander of a side in Tactical Level Combat as explained in Book 3. It represents the ability to command large groups of men in military endeavors.

Pathology WT + WT + Scientific 1
(Chemistry and Advanced Medical)

This is the medical Skill which deals with diseases. Details are given in the section dealing with diseases in Book 1.

Pharmacy^s WT + DFT + Scientific 1
(Chemistry and Lab Technique)

This Skill represents the character's knowledge of the techniques necessary to produce particular drugs. A successful BCS means that he has remembered the technique correctly. Critical failure means that he only believes that he has, and the end product will be something else entirely.

The actual production of a drug requires the exercise of Lab Technique Skill. Each drug should be rated as a Task and Task Periods are usually a day. Once the Task is finished, the number of units of drug will be determined. A potential unit of drug will consume a number of units of chemical supplies. The maximum number of potential units controllable by a character is equal to his Wit Group times the Efficiency Factor of the Lab, round nearest. The percentage of potential units of drug that are actually made into usable drug is equal to the character's Wit Group Effect Die roll multiplied by 10 and then multiplied by the modified Efficiency Factor of the Lab in use. The maximum conversion rate is 90%. Any fractional units are lost. The Efficiency Factor of the Lab is modified by the character's Pharmacy BCS roll's Effect Number in the usual fashion. This roll is separate from the roll to determine if he knows the correct technique.

If any of the Lab Technique rolls should be a 20, the resultant drugs will actually be poisons. The formula is left to the Gamesmaster but it is suggested that it reflect the formula or effects of the drug that was supposedly being synthesized. A Pharmacy BCS roll, modified by the Effect Number from the roll which produced the poison, will detect it at the end of the process.

Physics^s WT + Mechanical + Scientific 1
(Mathematics)

A basic scientific Skill required for advanced techniques.

Plastics Forming^T DFT + WT + Mechanical 1
(Technology Use)

This Skill allows a character with the tools and units of plastic stock to produce artifacts of plastic. Each artifact will be rated by the Gamesmaster as a Task for the amount of raw material to be consumed, time period required, and number of Task Points.

Practice of this Skill requires the use of a Plastics Forming Kit. Such Kits will be rated for weight of plastics that they can deal with and for the type of forming that may be done with them.

Radio Communications^s WT + DFT + Mechanical 1
(Technology Use)

This Skill represents the character's understanding of the principals and mechanics of radio communication and the devices used in it. Electrician Skill is required to make repairs or build such devices but a character with Electrician Skill must follow the directions of a character with this Skill to do so.

Design of radio communications is a Task that is governed by this Skill.

Simple Explosives^s DFT + WT + Mechanical 1
(Chemistry and Lab Technique)

This Skill functions with respect to producing "simple" explosives such as TNT, nitroglycerine, blasting caps, etc., as Pharmacy Skill does with respect to drugs.

Initial critical failure on the Simple Explosive BCS roll will result in an inert substance. The explosive's equivalent of a poison is an unstable substance which will explode at the end of the manufacturing process. The Simple Explosives BCS roll to identify such a failure may be made before the explosion, allowing the character to abort the process with only the loss of time and materials.

This Skill also represents the character's ability to assemble simple detonation devices and the proper placement of explosives of the type covered by the Skill.

Strategic Command WT + Scientific + Combative 1
(Operational Command)

This Skill is a higher powered version of Operational Command Skill, It is called into play when the Gamesmaster wishes to resolve the results of a whole series of Tactical Level Battles forming a military campaign in short order. If he is using the military campaign rules presented in Book 3, this Skill has a different function which is explained in detail there. Simply put, it may affect the "size" of the forces involved.

Telegraphy^s DFT + WT + Mechanical 1
(Technology Use)

This Skill functions as does Radio Communications Skill, except that its area of expertise deals with telegraph communications.

Telephone Communications^s WT + DFT + Mechanical 1
(Technology Use)

This Skill functions as does Radio Communications Skill, except that its area of expertise deals with telephone communications.

Television Communications^s WT + DFT + Mechanical 1
(Technology Use)

This Skill functions as does Radio Communications Skill. except that its area of expertise deals with television communications.

Therapy^s WT + DFT + Scientific 1
(Advanced Medical)

This advanced medical Skill deals with restoration of lost Attribute points and maintenance of current scores. Details of applications of this Skill are given in Book 1 in the sections on damage and healing and in the section on the effects of aging.

Weaponsmithing^T DFT + WT + Mechanical 1
(Blacksmithing or Machining for metal; Machining or Carpentry for wood)

This Skill is the weapon-producing counterpart of Armorer Skill. The prerequisite Skill will depend on the type of weapon to be made. The Task

Value of a weapon is its basic WDM times its Survival Value and the basic Task Period is a day.

When a weapon has a wooden shaft and a metal head, each part must be made separately and not necessarily by the same character. The Task Value of the head is twice the WDM and the Value of the shaft is twice the Survival Value.

A die roll of 1 during the process will add .1 times the character's Deftness Group to the WDM or subtract that value from the ENC Value at the weaponsmith's choice. A die roll of 20 will both add to the ENC value and subtract from the WDM a number equal to .1 times the Effect Number.

Machining metal for an edged surface (a weapon which does L type damage) will reduce the WDM by .1 times (6 minus the character's score in Machining divided by 20 and rounded down).

The character's score in Weaponsmithing Skill is averaged with his score in the Skill covering the material being worked on to determine the character's BCS for performing the Task.

The tools required for this Skill are those required for the Skill being used on the particular material.

Zoology^S (Pre-/Post-Ruin) WT + Scientific + Natural 2

This Skill is the counterpart of Botany Skill. It deals with the character's knowledge of animals. A successful BCS roll would allow the player to view the entry for the animal in Book 3, if it is a standard one, or the entry in the Gamesmaster's notebook, if it is one he has added to the list.

HIGH TECHNOLOGY PHYSICAL SKILLS

(All these Skills require Technology Use)

Aviation Mechanic^T DFT + WT + Mechanical 1
(High Technology Use)

This Skill is the counterpart to Automobile Mechanic but is used for aircraft.

High Technology Use^S DFT + WT + Mechanical 1

This Skill allows the character to deal with highly technological devices that are not covered by a specific Skill. In some cases, it will also allow him to use devices that are covered under a particular Skill, although he will not have the facility with them nor will they have the versatility normally accruing to them that a character with the proper Skill will have. This latter case applies to ECM devices, control boards, and other equipment.

Pilot, Fixed Wing^T DFT + WT + Mechanical 1

This Skill governs the operation and control of fixed-wing aircraft.

Pilot, Submersible^T DFT + WT + Mechanical 1

This Skill governs the operation and control of small underwater vehicles such as mini-sub.

Pilot, Rotary Wing^T DFT + WT + Mechanical 1

This Skill governs the operation and control of rotary-winged aircraft such as helicopters.

Pilot, Spacecraft^T DFT + WT + Mechanical 1

(Zero-G Training and High Technology Use)

This Skill governs the operation and control of small to medium spacecraft such as the shuttle.

Pilot, Variable Wing^T DFT + WT + Mechanical 1

This Skill governs the operation and control of VTOL or STOL aircraft such as the Hawker Harrier.

Safecracking^{T,E} DFT + WT + Mechanical 1

This Skill governs the opening of combination locks without having the combination. Combination locks are dealt with on page 47 of Book 1.

SCUBA Diving^{A,T} DFT + WT + Mechanical 1

This Skill governs the use of underwater breathing apparatus. It may be used to substitute for Swimming Skill whenever it is called for in the rules for operating underwater in Detailed Action Time on page 33 in Book 1.

A diver may add a number of combat turns (equal to his score in the Skill divided by 20 and rounded down) to the maximum time he may hold his breath.

Zero-G Training^A SPD + DFT + Natural 1

This Skill is used in a zero-G environment in much the same way that Swimming Skill is used when the character is in water over his head. All

physical Skills must be averaged with it to determine the base BCS, which in this case is never higher than the BCS in whichever Skill has the lower BCS.

HIGH TECHNOLOGY KNOWLEDGES^S

Complex Explosives DFT + WT + Mechanical 1
(Simple Explosives)

This Skill is an advanced form of Simple Explosives Skill and operates in the same way but deals with more advanced explosives such as plastic explosives and other such wonders of modern technology.

Computer Design WT + Scientific + Mechanical 1
(Computer Science, Mathematics, and High Technology Use)

This Skill allows the character to design computer hardware as a Task. Once designed, it must be built and powered before it can be operated. This Skill is also useful in figuring out a computer layout, if one should be found, and determining what would have to be done to get it functioning again.

ECM Operation^T DFT + WT + Mechanical 1
(High Technology Use)

This Skill allows a character that has access to Electronic Counter Measure equipment a chance to increase its efficiency by the Effect Number of his BCS roll. He may decrease it if his BCS roll fails.

Laser Technology WT + Scientific + Mechanical 1
(High Technology Use)

This Skill represents the character's understanding of laser technology for the purposes of working with it, repairing it or designing it. Any repair or construction work would be in the province of an appropriate Skill but the knowledge of what to solder where, for example, would come from this Skill. Designs or other working diagrams are a Task.

Plastic Synthesization^T WT + Scientific + Mechanical 1
(Chemistry and Lab Technique)

This Skill allows a character, with the proper equipment and the raw materials, to produce plastic stock. The process works as the production of drugs using Pharmacy Skill. The equivalent to the production of a poison is a useless batch which only costs time and raw materials. For a Lab, a Plastics Synthesization Kit is substituted. These are rated according to Efficiency Factor and type of production.

Power Generation, Electrical WT + Scientific + Mechanical 1
(Physics, Mechanically Generated Power, and Electrician)

This Skill is concerned with the design and operation of power plants to generate electrical energy from fossil fuel or hydroelectric sources. Design of such plants is a very large Task.

Power Generation, Nuclear WT + Scientific + Mechanical 1
(Power Generation Electrical)

This Skill is similar to the one above but deals with nuclear energy sources.

Power Generation, Solar WT + Scientific + Mechanical 1
(Physics and High Technology Use)

This Skill is similar to those above but deals with solar energy sources.

Production of Fuel, Hydride^T WT + Scientific + Mechanical 1
(Chemistry and Lab Technique)

This Skill allows a character, with the proper equipment and the raw materials, to produce metallic hydrides that release hydrogen to be burned as fuel in certain engines. This process works as the production of drugs using Pharmacy Skill. The equivalent of a poison is a lab explosion with a blast effect equal to the Effect Number of the roll that produced it. This explosion will, in any case, destroy that batch and the raw materials involved. The total damage done is the percent chance that the Lab will be totally destroyed. If it is not destroyed it will be Disrepaired (40% chance) or Junked (the other 60%).

Production of Fuel, Petroleum^T WT + Scientific + Mechanical 1
(Chemistry and Lab Technique)

This Skill allows a character, with the proper equipment and the raw materials, to produce fuel petroleum. This process works as the production of

drugs with Pharmacy Skill. The equivalent of a poison is a lab explosion as detailed above.



FIREARMS

Characters may well be said to live (and die) by the Gun. Current estimates place millions of weapons and billions of rounds in this country alone. With modern storage techniques, guns and ammo broken out of factory packaging will almost certainly work as well 20-30 years after manufacture as they do fresh from the maker.

Gainers with firearms experience will find some rules here that they disagree with (if we may judge by the response from our play testers). As always, the Gamesmaster may certainly choose to modify the rules for his campaign in any way he sees fit. We would like to point out that more "authentic" gun rules may be difficult for Players who do not share his experience with such weapons, and counsel prudence in any such expansions.

This chapter is divided into several sections:

A brief introduction to the workings of modern firearms.

Rules for the operation of guns.

Rules for ammunition and gun shop effects.

Other firearms (machine guns, black powder weapons, heavy weapons, mortars, etc.).

Appendices appear at the end of Book 3, containing examples of real weapons translated into **Aftermath!** terms and a Gun List for the Gamesmaster's use.

HOW GUNS WORK

This section is primarily intended for those who require an overview of how firearms function, and to provide readers with the underlying rationale behind the **Aftermath!** gun rules.

A firearm is any weapon using the force generated by igniting gunpowder to fire a projectile. This definition covers everything from early cannon-locks to M-16, from derringers to howitzers.

The firearms we will be concentrating on in this section and the weapons most often used in **Aftermath!** are classified as SMALL ARMS. By this we mean weapons that are designed to be carried easily and used by a single character. Heavier weapons, such as machine guns, mortars, bazookas, etc., are classified as SUPPORT WEAPONS, and are discussed on page 37.

There are two primary forms of Small Arms: Pistols and Long Guns, the latter also called Shoulder Arms. The Revolver is the commonest example of the Pistol, and the Rifle is the obvious example of the Long Gun. The only real effect these classifications have in the game is the question of which Skill is used to fire the weapon in combat: PISTOL Skill applies to Pistols, and RIFLE Skill to Long Guns.

A Pistol is defined as being small enough to fire easily in one hand, although two may be required in the case of very long ones. Their other distinguishing feature is the fact that they are held by a pistol grip, or butt, having no shoulder stock.

Long Guns are usually possessed of barrels over 18" (50cm) and are fitted with a Shoulder Stock. This latter feature is their main distinguishing mark. They are generally heavier and fire more powerful ammo than Pistols, with greater range, accuracy and hitting power.

PHYSICAL SPECIFICATIONS

In these rules we will be quantifying a number of physical characteristics of "real" weapons for purposes of constructing a game model.

BARREL LENGTH

Up to a given length, the longer a barrel is, the faster its bullet will travel. Longer weapons are more accurate (as a rule) than shorter ones. This is one reason why rifles have greater range than pistols, and fire with more power. But of course, the longer a barrel is, the bulkier the weapon will be, making for higher Encumbrance, and requiring two hands to fire properly.

The standard abbreviation for "Barrel Length" is BBL. The standard BBL values are as follows:

PISTOLS

Snub-nosed (SNUB): BBL less than 3" (7.62cm).

Short (SHT): BBL 3-4" (7.62-10.16cm)

Standard (STD): BBL 4-7" (10.16-17.78cm)

Long (LNG): BBL 8-9" (17.78-25.3cm)

Extra Long (XLNG): BBL 10-12" (25.4-30.48cm)

"Pistol Carbine" BBL 12" (30.48cm) or more

All of the Pistol sizes are fired using PISTOL Skill; however it requires TWO hands to properly handle any weapon with a "Pistol Carbine" BBL.

Long guns will rarely run shorter than about 16" in length.

LONG GUNS

Carbine: Any Long Gun with a BBL of 20" (50.8cm) or less

Rifle: Any Long Gun with a BBL of over 20" (50.8cm)

Also included in this class are Shotguns and certain automatic weapons, called Sub-Machine guns. It requires two hand to properly fire any Long Gun.

In keeping the playing record of any firearm, the class of BBL must be noted, as it will be referred to often.

ENCUMBRANCE

The Encumbrance of a gun is drawn from the weapon's size and the weight of the "real" model being adapted to the game system.

A Base ENC is assigned to the form of the weapon, to which its "real" weight in kg/10 is added.

Pistol SNUB or SHT: Base ENC equals .2

Pistol STD or LNG: Base ENC equals .3

Pistol XLNG: Base ENC equals .5

"Pistol Carbine" or Carbine: Base ENC equals .7

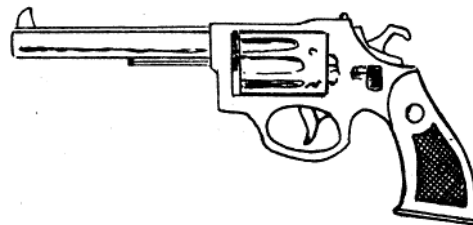
Rifle: Base ENC equals 1

Shotgun: Base ENC equals 1.2

Riot Gun (Sawed-off Shotgun): Base ENC equals .8

E.g.: the M-1 Garand Rifle of WWII is a BIG gun. Weighing in at 4.4 kg (9.5 lb.) it will have an ENC of 1 (Base ENC for Rifles) plus .4, or 1.4.

Contrariwise, a little 32 ACP caliber autoloading pistol, a "Saturday Night Special," weighing barely 10 oz., has an ENC of .24.



357 Magnum

GUN ACTION

The Gun Action is the internal mechanism of the weapon, controlling how often it fires, the manner in which it clears the spent cartridge casing, prepares a new cartridge, cocks, and fires again.

There are three major classes of Gun Action:

SINGLE SHOT ACTIONS: The weapon requires manual action by the firer to prepare for each shot. The principal forms of Single Shot Actions are as follows:

Single Shot (SS): The weapon only holds one cartridge at a time. After it is fired, the gun must be reloaded.

Single Action (SA): The weapon must be manually cocked after each shot. This type of Action is usually found in the "six-shooters" of the Old West, although modern replicas of these guns may also be made with Single Action mechanisms.

Bolt Action (BA): Usually found only in rifles, a bolt mounted at the back of the barrel must be worked manually to eject the spent shell, chamber a new one for firing, and cock the weapon.

Lever Action (LA): The famous Winchester carbine is the classic example of a Lever Action rifle. A lever mounted around the gun's trigger must be pumped to perform the "eject-chamber-cock" cycle needed for the next shot.

Pump Action (PA): This is also called "Slide Action," or even "Trombone Action." A sliding sleeve is mounted along the bottom of the gunstock, along the barrel. The firer must pump this forward and then back in order to eject, chamber, and cock the weapon.

MULTI-SHOT ACTIONS: These firearms are designed so that all the user needs to do for his next shot is pull the trigger. The principal forms are:

Double Action (DA): Found only in revolvers, as a rule; the trigger pull also cocks the weapon and turns the cylinder to present the fresh cartridge for firing.

Autoloading (AL): Also called "Semi-Automatic." This type of weapon is often referred to as an "Automatic," but this is a misnomer. An automatic weapon fires a continuous stream of bullets as long as the trigger is held down. See below for more details. The classic AL pistol is the Army Colt 45 M1911A1. In rifles, the M1 Garand of the WWII infantryman stands out in one's memory. Autoloaders carry their ammo in a spring-fed "clip." When the gun fires, part of the force generated is channeled to throw the weapon's bolt, ejecting the old cartridge. The clip's spring then snaps a new one in place. Meanwhile, the bolt is recovering from the effects of the last shot, but instead of coming back to the fully closed position, it stops in the cocked position. All this takes mere fractions of a second, with the result that all the firer is aware of is that each time he pulls the trigger, the gun will fire.

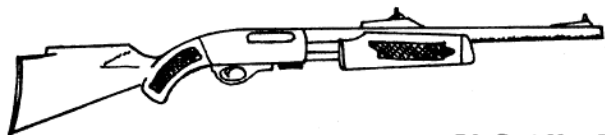
AUTOMATIC WEAPONS: As stated above, the term "Automatic" refers to weapons capable of fire that continues as long as the trigger is depressed. There are two forms of Automatic Gun Action found in Small Arms.

Full Automatic (FA): The weapon fires "Bursts" of bullets, instead of single rounds as non-automatic guns do. Such Bursts can be long or short, but generally Small Arms cannot be built durable enough to allow unlimited autofire. The longer a Burst is maintained, the greater the chance that the weapon will jam, as some element of its mechanism falls out of synch with the murderous rhythm of the discharge.

Auto-Burst (AB): The Autoburst feature is a recent development in firearms design. Military doctrine has long maintained that the maximum efficiency of automatic fire in close combat is achieved by firing short bursts of 3-4 rounds each. However, under stress, many a dogface will clamp down on his trigger, spraying bullets wildly and emptying his clip to no profit. Thus, many new assault rifles and sub-machine guns incorporate an intermediate setting between AL fire (semi-automatic) and FA, or Full Automatic. This is the Auto-Burst. The weapon will fire a set number of rounds (usually 3) every time the trigger is pulled. This permits the use of automatic weapons without wasting shots or causing unforeseen jamming.

It should be mentioned that automatic fire can be found as a Gun Action in several different forms of gun. Modern military rifles and carbines generally have autofire capability. There are also the Sub-Machine Guns, or "SMG," which come in two sizes. The larger is classed as a Carbine, the smaller as an XLNG Pistol.

As noted in the description of Autoweapon Skill (p. 17) the user of a weapon firing FA or AB must average that Skill with the one governing the use of that size/shape of gun. Thus, firing a Pistol form SMG would require averaging Autoweapon and Pistol Skills. The use of a larger SMG, or an automatic Carbine or Rifle, averages the Rifle Skill with Autoweapon.



PA, Port-Mag Rifle

Feature Folding Stock

Many SMG and some other weapons have this Feature, a shoulder stock which can be removed or folded out of the way. When this stock is extended, the weapon is fired using Rifle Skill in combination with Autoweapon to derive the BCS. When the stock is folded up, the Skill used is Pistol.

AMMUNITION

In discussing the specifications of a gun, only two aspects of the ammunition it fires need be taken into account: WHAT does the weapon fire, and HOW is it loaded?

Further discussion of ammunition and its effect will be found in the section entitled "Bullets and Ballistics" (p. 34).

CALIBER

The question "What does the gun fire" relates to the particular cartridge it is designed to use as ammunition. As a rule, if a gun is made to use one type of cartridge, it cannot fire any other round at all. Trying that will only get you an exploding weapon in your hands. Most unpleasant.

Many people are aware that cartridges are measured by their "Caliber." Most also know that Caliber is a measure of the bullet's diameter either in inches or in millimeters. Giving things a bit of thought, it becomes apparent that a "45 Caliber" slug cannot be 45 inches across, and the reason why it is properly written as ".45" becomes clear. But what most people do not know, unless they are familiar with guns to some extent, is that there are about 3 different kinds of ".45 Caliber" ammunition in existence, none of which are interchangeable. Likewise, such arcane facts as the similarity between NATO's 7.62mm cartridge and the .308 Winchester load (they are the same) are not in everybody's general body of knowledge.

It is not enough to call a gun "a 45." If one speaks of a "45 Automatic," then it is a safe bet that the ammunition in question is .45 ACP (for "Automatic Colt Pistol"), the round designed by Colt Firearms for use with that weapon. But a "38 Revolver" might load any one of several cartridges; which is the proper type of .38 caliber ammo?

It must be clearly understood when describing a gun just what exact ammo it can use.

BALL AND SHOT

There are two types of Small Arms ammunition to be considered. The usual type referred to by such terms as "cartridge" or "round" is called Ball Ammunition. This is a metal bullet encased in a brass jacket, or "case." But there is another form of ammunition, equally common: the Shot Shell. Such shells are fired by Shotguns and contain either a single heavy "slug" or numerous small pellets of lead or steel "shot" enclosed in a paper or shell.

The section of page 34 will describe the two forms of ammo. What is important to remember here is that Shotguns cannot fire Ball Ammo.

MAGAZINES

"Magazine" refers to the part of the gun in which the ammo is carried for firing. In some firearms, this is an integral part of the weapon's structure. In others, a removable "clip" is used. The particular type of magazine is very important in at least one common situation in **Aftermath!**: reloading an empty weapon in the middle of a fight.

INTEGRAL MAGAZINES

Also called "Non-detachable" magazines. These are all of a piece with the gun itself.

Swing-out Cylinder (Swing-Cyl): Found only in revolvers. The cylinder swings out at the touch of a small release. Empty cases are ejected in the same motion. New rounds are loaded in by hand, or in a group if using a "Quick Reload" device, a small spring clip holding a full load of ammo. The cylinder is then snapped closed and the gun is ready to fire.

Snap-out Cylinder (Snap-Cyl): Again found only in revolvers. Very similar to Swing-Cyl weapons, except that the cylinder is removed completely, instead of swinging out on a non-detachable axle. Thus, it is possible to carry a spare cylinder already loaded, eliminating the need to reload rounds into the removed one.

Portal Cylinder (Port-Cyl): Found only in replicas of "Old West" revolvers. The cylinder does not come out. Spent rounds are removed and new ones loaded through a small "portal" mounted to the right of the gun's trigger. This is the slowest reloading revolver in the system.

Portal Magazine (Port-Mag): Formally known as the "Non-Detachable Staggered Box Magazine." This is a standard magazine found in rifles that don't use clips. It is loaded through a small portal mounted under the gunstock, in front of the trigger guard. The usual capacity is 5 rounds of standard ammo or 3 of Magnum ammo.

Tubular Magazine (Tub-Mag): Similar to Port-Mag, but rounds are loaded in through a side port, being held in a long, tubular magazine mounted under the barrel. Almost exclusively found in lever-action weapons and Shotguns.

Falling Block (Fall-Block): A breech-loading system found in many Single Shot pistols and rifles. A small lever rolls out the firing chamber, the round is inserted, the gun is closed, and is ready to fire.

Break Loading (Break): Found mostly in Single Shot or Double Barreled Shotguns, and in some Single Shot ball firing weapons. The gun is "broken,"

hinged between stock and receiver, to open up and eject the spent casing. A new round is inserted; the gun is closed, and ready to fire.

DETACHABLE MAGAZINES

There are only two real types to consider. The box clip, described briefly in the outline of Autoloading Action, and the “stripper” clip, a metal or plastic spring enclosing the weapon’s load, which is inserted in one movement into the gun.

Box Magazine (Box): The true “Clip.” A small metal box, holding a variable number of rounds. When reloading the weapon, the old clip is simply removed and a new one inserted. The first round must then be chambered manually, and the Gun Action takes over from there as described in Autoloader Action. This is the fastest reloading weapon in the system, but has the disadvantage that the clips are not usually interchangeable. That is, the clip from your Detonics Snub-Nosed 45 Autoloader will not serve to load your Colt Combat Commander, although both weapons are clip-fed autoloaders using 45 ACP ammo.

Stripper Clip (Strip): Also known as the “en bloc” clip. The best example of a Strip weapon is the M1 Garand rifle, which loads an 8 shot Stripper Clip of 30-06 ammo. Most Strip loading weapons eject the empty Stripper when the last round in it is fired. As with Box Magazines, the Stripper for weapon A will rarely fit weapon B, even when Calibers and capacities are the same.

In recording the magazine statistics on a given weapon, the capacity of the magazine must be noted. Most guns allow the option of carrying “a round in the chamber.” I.e., in an autoloading pistol with a 7 round clip, an eighth round may be carried already in the firing chamber, ready to fire. BUT— this may lead to accidental discharge of the weapon if it is dropped or struck! The Gamesmaster may apply his discretion in such matters. If the question arises, 1D6 should be rolled. If the score rolled is greater than or equal to the gun’s DUR, it goes off. If the safety of the gun is on, add 1 to the effective DUR.

An autoloading or automatic weapon which does NOT have a round in the chamber is not ready to fire. In such a case, the action must be worked once, manually, to chamber that first round and cock the weapon. Thereafter, fired rounds will provide the impetus needed to cycle the gun for its next shot.

OTHER FACTORS

There are several miscellaneous factors in firearms design under the headings of Durability and Features.

DURABILITY

This is an abstract figure from 1 to 5, expressing the weapon’s overall quality and strength of construction. It has many applications under the rules to follow. Under some circumstances the weapon’s Durability (or DUR) may be reduced. When the DUR falls below 1, the weapon is in a state of Disrepair, and must be worked on by a Gunsmith under the proper circumstances if it is to function again.

The general meaning of a DUR value can vary, reflecting the initial quality of craftsmanship that went into the gun, or conversely the lack thereof, or simply the shape it is in after years of hard use (or abuse). The base DUR score is like a character’s DRT. While it may be reduced, the proper action will restore it. The Gamesmaster may exercise his discretion in decreeing that such damage be comes permanent if not tended to within a given time.

DUR values as we see them may be categorized as follows:

- 0 Broken. Gun will not work. Repairs required.
- 1 Low-quality weapons, especially handguns. The cheap “Saturday Night Special” type of gun. Antique arms that have not been maintained well also fall into this category.
- 2 Cheap weapons, or very much abused ones. “Dime Store” sporting arms, inexpensive replicas, massproduced pistols, again of the “Saturday Night Special” variety.
- 3 Average quality for pistols, and for inexpensive but serviceable rifles and shotguns.
- 4 High quality sporting arms, older military weapons.
- 5 Custom made firearms, competition class handguns, and top-quality military weapons comprise this elite of the gun world.

These are arbitrary guidelines and Gamesmasters expanding the gun inventory in their campaigns will have to make “judgment calls” on the DUR in most cases. One possible rule-of-thumb is to base one’s assigned Durability values on the market price of the gun being used for the game model. But this can lead to low scores for well-made but inexpensive models, not uncommon in the firearms market.

FEATURES

Throughout this chapter, various devices which will enhance the use of firearms are inserted under the heading of Features. Features are elements

in the design of a weapon allowing better aim, faster fire, more flexible use, etc.

When a Feature directly affects the application of a rule, it is inserted following that rule in the text. A full list of Features, including some not found in the rest of the text, appears in Appendix 6.

THE GUN RULES

Having established the basic qualities of firearms, we here give the specific rules governing their use in play. This includes those factors determined by the weapon itself and those depending on the human firing it.

RANGE

Range is a function of the size and type of gun being used. The range to the target affects the firer’s chance to hit and the damage potential of the bullet.

The following Table gives the Range Steps for each class of firearm. There are six Range Steps to be considered in the system:

Point Blank Range (PBR)
Short Range (SHT)
Effective Range (EFF)
Long Range (LNG)
Extreme Range (EXT)
Maximum Range (MAX)

Also given are the Modifiers to the Basic Chance of Success and Bullet Damage Group for shots fired at these Ranges.

Feature Match Weapons

A Feature available on some firearms will be Match quality. These weapons are designed for use in international competition and have incredible accuracy. Weapons having this Feature add 50% to the distance defining their Range Steps.

E.G.: a Match Rated LNG Pistol will have the following Range Steps: PBR 7.5, SHT 15, EFF 60, LNG 90, EXT 180, MAX 360.

Match Weapons also have an Inherent Accuracy bonus of 1 in the hands of unSkilled users(see p.31 for the Inherent Accuracy rules).

RATE OF FIRE

The Rate of Fire is directly based on the Gun Action used. It defines the number of Shots that the character may fire in a single Action, as defined in Book 1 on p. 25. If a gun has a Rate of 1 Shot per Action and is being used by a character with an MNA of 3, he may fire up to 3 shots per Combat Turn, if all he does is fire the gun.

Gun Actions and Rates

Gun Action	Shots per Action
SS	1 Shot and reload for next shot
SA	1 Shot per Action
BA	1 Shot per Action
LA	1 Shot per Action
PA	1 Shot per Action
DA	1 or 2 Shots per Action. Firer’s choice
AL	1, 2, or 3 Shots per Action. Firer’s choice
FA	Variable number of Bursts* per Action
AB	1, 2, or 3 Bursts* per Action

In automatic fire, Bursts are fired rather than individual rounds as with other Gun Actions. The majority of weapons fire Bursts of 3 rounds each. Some of the new “super-automatic” guns fire Bursts of 6. See Autofire rules below for details.

SHOT SPACING

Firing a gun is an Action, and thus will consume a PCA as set down in the basic Combat rules. The exact Action Phase on which shots are resolved will depend on the firer’s PCA and the number of shots he is firing in that Action.

Firing 1 Shot (or Burst): Firer will initiate Action on the first Action Phase of his PCA. The Shot is resolved (ie., a hit rolled for) on the middle Action Phase. The firer recovers from the shooting routine on the last Action Phase of the Action.

Firer has BAP of 10 and PCA of 5. His first act in the Combat Turn is firing a gun. He initiates Action on Action Phase 10. He resolves the Shot on Action Phase 8. He completes the routine on Action Phase 6.

Firing 2 Shots: Firer will initiate Action on first Action Phase. He resolves first shot on his middle Action Phase. He resolves second Shot and ends the firing routine on his last Action Phase. Our example from above would open fire on Action Phase 10, resolve first Shot on Action Phase 8, resolve second Shot and end Action on Action Phase 6.

Firing 3 Shots: Action is initiated and first Shot is resolved on first Action Phase. Second shot is resolved on middle Action Phase. Third Shot is resolved and routine ended on last Action Phase. The example character would resolve Shots on Action Phase 10, 8, and 6 if firing 3 Shots.

ODD SHOTS

This rule is used when:

- Firing more than 3 Shots. This can occur using FA Rate of Fire, or a non-automatic weapon equipped with the Hair Trigger Feature (see below).
- Character is firing more Shots than he has PCA. E.G.: a character with PCA of 2 firing 3 Shots from an Autoloading weapon.

Shots may be "left over" in the spacing formula when all available Action Phases have been allocated. Such Shots are defined as "Odd Shots." The first "Odd Shot" fired in a given Action is resolved on the last Action Phase, along with the Shot normally fired then. Separate BCS rolls are made for both of them, but their recoil effects will penalize both rolls. If there is a second "Odd Shot," resolve it in this manner but on the middle Action Phase. If there is a third "Odd Shot," resolve it on the first Action. Repeat this process until all "Odd Shots" have been given an Action Phase on which they will be resolved.

OPTION Squeeze Off Shots

The tradition of the "dead eye" marksman includes the ability to slo-o-owly squeeze off shots, for significant increases in aim. The Gamesmaster may allow this to be done in the following manner.

The firer takes TWO Actions to compete a firing routine. In effect, he doubles his PCA. For example, a character with an MNA of 2 and BAP of 10 has two Actions available per Combat Turn, with a PCA of 5. If he elects to "squeeze off" a routine of 3 Shots, firing semi-automatic, he will initiate the routine on Action Phase 10 and resolve his first Shot, resolve his second Shot on Phase 5, and his third on Action Phase 1. In other words, he will fire as if his PCA were doubled, for a score of 10!

Characters with an MNA of 1 must spread this option out over two Combat Turns. The real slowpokes, with an MNA of 0, would require 4 Combat Turns to squeeze off a firing routine.

The character must be in Full Stance (see below) to Squeeze Off shots.

Squeezing off your shots will add the Deftness score to the firer's Skill Score with the weapon. If this increases the first 100 points only, the BCS to hit benefits. If the second 100 points of Skill are raised, the Location alteration is improved. If the bonus increases the Skill beyond 200, this is allowed, being reflected by greater-than-normal Location movement. Skill increase in the first 100 points does not improve Control die rolls!

Two points to clarify in the above rules are:

Shot: The term "Shot" refers to the normal discharge of the weapon. This may be a single Round, as with non-automatic weapons, a Burst of rounds, when firing automatic, a blast of shot from a shotgun, or the beam from an energy weapon, if your campaign uses such devices. Other meanings include rifle grenades, mortar shells, 40mm grenades from a launcher—in short, any projectile launched from a firearm.

"MIDDLE" Action Phase: There may be some confusion as to the exact Action Phase which falls in the middle of an Action. If the PCA is odd, the middle Action Phase falls directly in the center of the sequence. It is a number of phases into the PCA equal to PCA/2, up.

If the PCA is even, the middle Action Phase falls in the Action a number of Action Phase equal to (PCA/2) plus 1.

Thus, two characters start an action on Action Phase 10. The first has a PCA of 5, the other a PCA of 4. The first character will reach his middle Action Phase on Action Phase 8, since 5/2 equals 2.5 which rounds up to 3.

Counting from the phase of initiation, as is always done in **Aftermath!**

combat, the sequence runs 10 (initiate)-9-8 (third Action Phase in the sequence)-7-6 (fifth Action Phase in sequence, thus ending the routine).

For the second character, with the PCA of 4, the middle Action Phase falls on Action Phase 8 also, since (4/2) plus 1 equals 2 plus 1, or 3. The countdown is the same as for the first character.

Range Table

Weapon	BBL	PBR	SHT	EFF	LNG	EXT	MAX
Pistols	:SNUB	2	10	15	25	50	100
	:SHT	4	10	20	30	60	120
	:STD	5	10	30	50	100	200
	:LNG	5	10	40	60	120	240
	:XLNG	5	20	60	80	160	320
Long Guns	Carbine	10	25	50	250	500	1000
	Rifle	10	30	100	500	1000	2000
Autofire	Carbine	10	15	25	125	250	500
	Rifle	10	20	50	250	500	1000
	SMG*	5	10	20	40	80	160
Shotguns	Slug Load	10	20	50	100	200	400
	Shot Load	10	25	30	60	100	150
	Modified Choke	5	20	30	40	80	120
	Open Choke	5	10	20	30	60	90
	Riot Gun	5	10	15	20	30	50
BCS Modifiers	+1	+1	+0	-1	-2	-5	
BDG Modifiers	+10	+0	-0	-10%	-25%	-50%	

To use the Range Table, simply note the range to the target in meters on the combat display. Locate the Range Step under which this figure falls on the Table. This is the Range Step for that shot. Unless weapon is specified as having another barrel length.

Feature Hair Triggers

Hair Triggers are adjusted to allow ultra-rapid fire, with the mechanism of the Gun Action similarly treated for fast shot recycling. It increases the Rate of Fire by 1 Shot per Action. SS weapons do not have Hair Triggers.

AUTOFIRE

Full Automatic fire from small arms has several unique rules attached to it. In firing any other weapon, 1 Shot discharges 1 bullet (or charge of shot, if using a shotgun). Firing on automatic, a weapon will discharge a set number of Rounds per Burst. As stated, the usual number is 3 rounds.

This has two major effects. First, the recoil of firing the weapon is equal to the number of Rounds per Burst times the ammo's base BDG. Second, the damage potential of the Burst will vary, A die of the type appropriate to the number of Rounds per Burst is rolled, a D3 for a gun firing 3 per Burst, a D6 for weapons firing 6 per Burst. The indicated number of rounds will hit the target on the same location, adding their individual BDG to get the total. This can make even the low-power slugs from some automatics quite lethal.

Remember to deduct all the rounds in the Burst from the weapon's magazine load, even if all do not hit the target. Likewise, Recoil for Bursts is calculated on the basis of how many rounds are fired, not how many hit.

OPTION Full Automatic Jamming

When firing FA, there is no strict limit to the number of Bursts which may be fired in an Action as such. The limit comes from the tendency of automatic weapons to jam during sustained fire. A single Burst can always be fired with no fear of this happening (hence the development of Auto-Bursts to circumvent the problem in later designs). But if more Bursts are fired in an Action, the chances mount rapidly.

The tendency to jam is limited by the gun's Durability. If firing multiple Bursts, roll dice of the type appropriate to the Rounds per Burst for the gun, 1 such die per DUR point. For a gun firing 3 Rounds per Burst, with a DUR of 3, 3D3 would be rolled. The number rolled indicates the round which will jam after the first Burst. A score of 3 would indicate a jam on the third round of the second Burst fired that Action. If two Bursts were indeed fired, the second



would jam. If the score had been 4, indicating a jam on the first round in the third Burst, and only two Bursts were actually fired, then no jam would occur.

OPTION Fumbling Bursts

One of the problems with FA fire is that the firer needs to exercise great control to stop shooting when he wants to. The high rate of fire may cause shots to be wasted. To simulate this, the Gamesmaster may require those using FA to make a Deftness AST. If the Saving Throw fails, then roll a die appropriate to the Rounds per Burst, and the indicated number of extra rounds were fired. As such shots are not well-controlled by the firer, they will not hit any target, and if the Optional Jamming Rule above is used, they may well cause the weapon to jam.

DUDS AND JAMS

In the course of time, any gun will jam. In the world of haphazard weapon care and old ammo of *Aftermath!* this occurs more frequently than today. A "dud" bullet or a jam will affect different Gun Actions in different ways.

SS, SA, BA, LA, PA, and DA weapons: Treat "duds" (rounds that do not go off) as if the weapon had fired. In other words, the dud does not impede the weapons next shot.

AL, FA, and AB weapons: Duds must be cleared manually, working the action by hand, which takes an Action. If firing FA or AB, a dud in mid-Burst aborts the rest of the Burst. The maximum number of Rounds in that Burst which can hit the target is the number that actually fired.

When the weapon actually jams, it requires a full Action to clear it. Then treat weapon as if it had a dud. I.e., all Single Shot Actions, and DA weapons, can fire with no delay, but auto loading and automatic weapons must be manually chambered.

Feature Auto-extractor

This Feature is a small lever operating a plunger inside the gun. It will allow jams to be cleared by the end of the Action in which they occur. It causes jams to be treated as if they were simply duds.

RELOADING TIME

Digger popped his head up from behind the embankment. BLAM! Another ghoul hit the dust. From several locations, return fire kicked up dust as the cannibals tried to bag their "meat." Digger drew a bead on one of his hunters. CLICK! Click?

Digger's continued career in *Aftermath!* has just become dependent on one vital question: can he reload his piece before the ghouls turn him into cold cuts? The time this is going to take depends on his native speed and the type of magazine his gun has.

In any situation such as this, the first thing that must be asked is, does the character have more ammo, ready to load, in an accessible place? A glance at the rules for pawing through your backpack or pockets shows the unwisdom of storing spare loads there, unless you carry nothing but fresh cartridges in that locale. The wisest course is an ammo pouch, or bandolier, which will allow you to flip open the container and pull out your rounds without fumbling past all the other junk stored there.

Once you have the cartridges ready to go, the rest depends on your gun.



LOOSE ROUNDS

If the weapon does not use a clip, stripper, or similar device allowing the new ammo to be placed inside in one mass, then the Loose Round Rule applies. In one Action, the character can handle a number of rounds equal to his Deftness Group. This handling can consist of taking out a spent round or putting in a new one.

RELOADING TIMETABLES

The timetables for reloading the magazines described earlier are as follows:

Swing-cyl or Snap-cyl:

1 Action to break open cylinder. Empties are ejected in same motion.

Load new rounds under Loose Round Rule. If using a Quick Reload Device or a spare, reloaded Snap-Cyl, then it requires only 1 Action to insert this.

1 Action to close cylinder, Gun is now ready to fire.

Port-Cyl

Old rounds must be removed and new rounds loaded using Loose Round Rule. If weapon not fully reloaded, 1 Action required to be sure to get fresh cartridge under hammer for firing. Chance of blowing this and getting a spent round (ie., a dud) in the first position is the number of such rounds left in a gun or less on a D6.

Port-Mag or Port-Tub

Load using Loose Round Rule. No empties to worry about, as these have been ejected during firing.

Falling Block

1 Action to open Gun Action, ejecting empty casing.

1 Action to load new round in.

1 Action to close weapon. Gun is now ready to fire.

Break

1 Action to open gun. Empties are ejected by this movement.

Load using Loose Round Rule.

1 Action to close gun. Gun is now ready to fire.

Box

1 Action to remove old magazine.

1 Action to insert fresh clip and chamber first round if this is desired at that time. If round not chambered during the reload, it will take a separate Action to do so later on.

Once first round is chambered, gun is ready to fire.

Note: If it is necessary to reload the clip itself during Detailed Action Time, this is done using the Loose Round Rule.

Strip

1 Action to load in new Stripper (empty clip was ejected on last shot).

1 Action to chamber first round for firing.

Gun is ready to fire when round is chambered.

Note: Reloading the Stripper clip itself is handled the same way as reloading empty Box clips: use the Loose Round Rule.

OPTION Quick Close Rule

In the Action in which the last round is reloaded, with weapons requiring closing, the character may attempt to do so at once. This requires a Speed AST at a penalty equal to the number of rounds handled that Action. If made, the weapon is closed by the end of that Action. If failed, the weapon must be closed as the next Action.

OPTION Quick Chamber Rule

Likewise, in a weapon requiring chambering, the character may attempt to do this in the Action in which the last round was reloaded. The same rules apply as those governing the Quick Close. If the Quick Close option has been used in that Action already by the character, a Speed CST is needed, at the same penalty as always for the number of rounds handled. This rule can also be used in the event of trying to properly align the cylinder on a partially reloaded revolver.

FIRING THE WEAPON

We have now developed a fairly comprehensive system for determining how guns work. Let us examine how they are used.

WHO CAN FIRE A GUN?

As all character actions are controlled by the possession of the appropriate Skills, you may be sure the question will arise of what happens when someone with no Gun Skill picks up a firearm in combat, or more confusingly, how well a character who is a deadly Pistol shot handles a Rifle, when he has never fired one before in his (game) life.

ANYONE can fire a gun which is in a Ready state, He may not be much of a shot, but he can use it in combat to some degree. Doing other things to the gun (reloading it, maintaining it, etc.) requires some knowledge of how it works, i.e., a score in the appropriate Skill; but even here, the character's common sense can replace acquired ability.

READY WEAPONS

A "Ready" weapon is defined as a gun which is:

- Loaded, with a round in the chamber for firing, cocked, and with the safety off. In other words, if the trigger is pulled, the gun will fire.
- In the firer's hands, properly held for use. A character carrying a Rifle in one hand and a flashlight in the other does not have a Ready weapon, as he needs both hands to fire the gun. A Pistol that has just been used to conk a guard over the head is not being held ready to fire. Obviously, holstered or slung weapons are not ready. It will normally require 1 Action to ready such a weapon.

If the gun is carried in a closed holster (strapped or buttoned down flap) or in any other kind of container, this must be opened and the gun found according to the normal rules for such activity.

OPTION Quick Draws

Pistols or Rifles can be drawn and fired in the same Action in certain cases. The former weapon must be in an open holster, or in the carrier's belt. Long Guns cannot be "drawn" if they are slung over the carrier's back or shoulder, but if they are being carried, the option may be tried.

A Pistol can be "Quick Drawn" from a holster if the user makes a Dexterity AST. From the belt or waistband a OST is needed. The use of special, "fast draw" holsters will add a bonus to the score needed. The Gamesmaster may impose penalties if the circumstances warrant.

"Quick Draws" with Long Guns require a Dexterity CST. If the Fast Draw Saving Throw is made then a single shot may be fired at the end of the Action. All other modifiers apply and such shots are always assumed to be Hip Fire (see p. 31).

The Gamesmaster may feel free to introduce a Quick Draw Skill, if he finds it appropriate to his campaign. The use of the

Skill instead of the Saving Throw would allow the weapon to be brought to the Present Stance, rather than Hip Fire. See the rules on Firing Stance for an explanation of this difference.

HANDLING UNFAMILIAR WEAPONS

There are two major points to deal with here: firing them, and minor operational points, lumped under the term "servicing."

As with any unfamiliar weapons form, the base BCS is derived from the user's Combative Talent. This is used as an inherent Skill score, so that a character with a 20 will have a BCS of 4 in any weapons form he tries to use. However, guns do a lot of the work for you in combat. Even a novice knows that if you point it at the target and pull the trigger, it will shoot at that target.

Therefore, firearms have an Inherent Accuracy which is added to the Talent-based BCS of the inexperienced user. It is based on the overall class of weapon and its BBL.

If the user's own BCS in the weapon, based on a Gun Skill, exceeds the score derived from his Combative Talent and the Inherent Accuracy, then it is used instead of that score. Inherent Accuracy is effective only for those who are NOT trained in using the weapon!

As regards "Servicing" the weapon, when dealing with Small Arms, if the user is confronted with some simple act, say reloading the weapon, he must make a Wit OST to figure out what is needed, and all steps in the procedure take twice as long as normal. Say an unskilled character is trying to reload a Box magazine, It will be borne in upon him that it is empty when it refuses to fire. He must try to make a Wit CST to figure out how to reload it. He takes 1 Action per attempt, succeeding on his second try. At double the normal value, it will take 2 Actions to remove the old clip and 2 more to fumble in the new magazine.

The Gamesmaster may modify these restrictions to fit the case. A well-trained Pistol user will probably know how to service a Rifle in most cases, but will still do so slowly.

The rules on "Servicing" weapons apply to all characters who have less than 5 points (a BCS of 1) in the relevant Skill.

FIRING STANCE

There are three basic Stances for use when firing. They are as much a matter of mental focus as of physical placement, being linked to the degree of concentration and control the firer is bringing to bear on his shot. The Stances are:

Full Stance: Or just "Stance" for convenience. The braced position allowing the firer maximum control of his aim.

Present Stance: Also called "Presented" or just "Present" (as in "Present Arms," not "Birthday Present"). The basic firing posture, allowing some freedom of movement.

Hip Fire: A loose stance, allowing full movement, but lacking a good deal of control over the weapon.

In the main, characters can adopt any Stance they choose no matter what is going on, as long as they restrict their actions to those permitted that Stance. If, for example, a character is running down the street while firing, he can only be using Hip Fire, as only that Stance allows such movement. A character with a ready weapon who fires without announcing any special change in his Stance, is assumed to be in Present, as that is the best Stance for such shooting. Full Stance cannot be assumed without conscious effort and the Gamesmaster need not allow its benefits (or restrictions) to those who have not announced that they are using it. If a character has been using a Stance, and then does something which is not permitted to that Stance, the Gamesmaster may automatically require that he adjust his Stance to the optimum one permitting such action.

Full Stance

The firer assumes a posture as if he were firing on a target range, instead of in the middle of a hot firefight. It requires 1

INHERENT ACCURACY TABLE

Weapon Used	Size	Inherent Accuracy
Pistol:	SNUB	-1
	SHT	+0
	STD	+1
	LNG	+2
Long Guns:	XLNG	+2
	Carbine	+3
Shotgun:	Rifle	+4
	Slug	+3
	Shot	+4

Autofire: Using a weapon for automatic fire reduces the Inherent Accuracy normally accorded the weapon by 2. For each full Burst fired, add 1 to the Inherent Accuracy.

Match Weapons: If the Feature is used, then Match Weapons add 1 to the normal Inherent Accuracy of the weapon.

Action to assume Full Stance, and the firer must refrain from shooting during this Action. He must be in Present Stance (see below) when starting the Action. Full Stance has the following advantages:

- A plus 1 to the BCS is received.
- Allows the use of certain modifiers (Sighting, Bracing Weapon, Squeeze Off, etc.) which are only allowed while in Stance.

Restrictions on Full Stance are:

- Shots may only be fired out of the character's Front Hexes. No movement of any sort is permitted, including the Combat Move.
- The firer may not speak, or otherwise concentrate on anything except his shot.

Present Stance

Any character who is not moving, is not Surprised, and has a Ready gun, may assume Present Stance at will. No modifiers apply to Present for good or ill, as it is assumed to be the basic firing position, neither below average like Hip Fire, nor above average like Full Stance.

Advantages are:

- Fire permitted out of Side Hexes as well as Front
- Normal rules governing communication in Detailed Action Time apply

Disadvantages are:

- Only the Combat Move is permitted.
- Certain modifiers requiring Full Stance are not allowed.

Hip Fire

As the name implies, the weapon is held low, braced against the body for support, rather than high enough to allow even a minimal sighting technique to be used. Hip Fire is assumed when no other circumstances cover the conditions under which the gun is fired.

Advantages of Hip Fire are:

- Character may perform any movement: Walk, Run, Dodge, Change Position, you name it.
- Fire is permitted out of any facing: Front, Side, or Rear.

Disadvantages are:

- Use Average BCS to resolve Hip Fire shooting.
- Further restrictions available to modifiers for firer.

WEAPON MODIFIERS

Several of the weapon design factors discussed previously have direct bearing on the BCS when firing the weapon.

Range

The Range Step affects the BCS as follows:

- PBR plus 2 to BCS
- SHT plus 1 to BCS
- EFF no effect on BCS
- LNG minus 1 to BCS
- EXT minus 2 to BCS
- MAX minus 5 to BCS

Feature Telescopic Sights

The use of Telescopic Sights will serve to reduce the effective Range as far as its effects on BCS go. Effects on Bullet Damage Group are not modified. Simply divide the actual Range of sighted shots by the magnifying power of the scope. The resulting figure is the effective Range, used to determine the Range Step to be used.

Recoil

All cartridges are rated as to their Bullet Damage Group (BDG) and, besides indicated how much damage they can do to a target, this BDG also determines the recoil suffered by the firer.

To measure the Recoil penalty (if any) proceed as follows:

- Take BDG/10, up. This is the Recoil base.
- From this base, subtract either the character's Strength Group or his Location alteration score with that firearm, whichever is higher. If this sum is positive, subtract it from the firer's BCS as a penalty. If it is negative, it has no effect on the BCS one way or another.

If multiple rounds are fired in the same Action Phase, as occurs when firing Bursts or resolving Odd Shots, then the BDGs of all rounds fired in that Action Phase are added together for calculating Recoil, and all resolutions rolled that phase will be affected by any penalties accrued.

Armed with a 45 ACP autoloading pistol, Marsha is pumping out 3 shots at a charging Master Rat. Her PCA is 2, starting on Action Phase 3, so she will resolve her first shot on Action Phase 3, and her last two shots on Action Phase 2, under the Odd Shot Rule.

45 ACP has a BDG of 11, so its Recoil base is 2. Marsha has a Strength Group of 2, and is a good shot, with 2 points of Location in Pistol Skill. So either way, she can reduce Recoil by 2. Therefore, her first shot is at no penalty due to Recoil.

On Action Phase 2, however, Marsha is resolving two shots, each with a BDG of 11. Thus, the Recoil base for her shots on Action Phase 2 is equal to 22/10, up, or 3. Subtracting her relevant scores, the difference is 1. Marsha gets -1 on both of these shots fired on Action Phase 2, as she cannot completely control the bucking pistol.

Feature Recoil Reduction

There are a variety of Features to be found in firearms which have the express purpose of reducing the effects of Recoil. On Long guns, the simplest form known is simply a pad, fitted to the butt of the stock. Other firearms use carefully crafted weighting in the barrel, special vents that release some of the force of the propellant explosion, and so on.

Weapons equipped with Recoil Reduction other than a Pad will be noted as having 1, 2, or 3 factor. That is, they reduce the Recoil base by that number.

Recoil Pads always reduce Recoil base by 1.

Features Enhancing BCS

Among the features which may directly affect the BCS, we find:

"Tunable" Guns: Certain firearms are designed to allow the user to "tune" the gun's handling characteristics, stock length, balance, trigger pull, and so on, to conform to his optimum physical specifications.

It requires a week's study time, expending rounds as required for normal learning, but otherwise free of either hindrances or bonuses, to tune the gun. No Skill points are gained for this week's study. Once the gun is tuned, it will add 1 to that user's BCS, but will penalize other users by -1. If someone else acquires the gun, he may retune it by the same process.

"Handed" Pistol Grips: Customized grips can be mounted on Pistols, or in some models are included, which are specially formed to allow a very firm,

comfortable, and precise hold on the gun. Such grips are "handed," i.e., shaped for the left or right hand specially. Using such a Pistol in the correct hand adds 1 to the BCS. Using such a Pistol in the wrong hand gives a -2 to the BCS.

FIRER ACTIONS

The firer will often be in a position to improve or worsen his BCS by certain actions during his firing routine. Some of these are things the character must perform deliberately, others are natural by-products of specific events.

Brace Weapon

The firer may assume a Brace with the weapon if he is in Full Stance. Both hands must be used, whether firing Pistol or Long Gun. With the former, both hands are used to hold the butt, as in standard police firing stance for handgun use.

With a Long Gun, the Brace also requires that the weapon be equipped with a sling, or carrying strap. This is wrapped around the forearm of the hand supporting the forward gunstock, under the barrel.

It requires 1 Action without firing to assume a Brace, and the firer must be in Full Stance before commencing the Action.

Feature Swivel Sling

The sling on a Long Gun can be mounted with universally jointed swivels. These speed up the Bracing process so that it may be performed in the same Action as the one in which the firer assumes Full Stance.

Rest Weapon

The firer rests the weapon on a stable, horizontal surface. This surface must be at a level between the firer's sternum (Loc 6-7) and face (Loc 2). The firer must be in Full Stance but may not Brace the weapon if using the Rest option.

Firer Movement

It is generally agreed that firing a gun on the run is tricky! The rules reflect this.

As stated in the rules on Firing Stance, Present Stance allows the firer to make only a 1 meter Combat Move during his firing Action. Any greater degree of movement automatically drops the firer into Hip Fire. The Gamesmaster should enforce this rigorously.

Besides limiting Firing Stances, any movement reduces the BCS directly as follows:

Combat Move (1m):	-1 to BCS
Walking:	Use Hip Fire and -2 to BCS
Running:	Use Hip Fire and -4 to BCS
Dodging:	Use Hip Fire and double penalty for basic movement being used

Changing Position: Kneeling down, standing up, "hitting the deck," etc. A flat -10 to the BCS. If the move is being performed in 1 Action Phase, i.e., the character is doing so without taking an Action, the Gamesmaster may require him to avoid the Fall effects before allowing him to even try to shoot. Also, remember that the gun may be dropped if the faller is stunned, or may go off unintentionally if it was ready to fire.

The question will arise regarding fire during an Action in which the character is using different rates of speed. This is not easy to define completely and each group will, to some extent, have to work out its own conventions. According to ours, unless the character has started his Firing Action in Hip Fire, he is not allowed to make a move greater than 1 meter. In Hip Fire, his BCS penalty for a given Action Phase of resolution is based on the highest rate of movement achieved in the Action up to that point. This prevents walking for 3 Action Phases, then stopping on the phase of resolution to avoid the BCS penalty.

If Slimy Sammy initiates a 3 Shot firing routine in Hip Fire, standing still for the first Action Phase, when he resolves his first Shot, he receives no special penalty. On the next Action Phase, he walks a meter, and does likewise on the Action Phase after that, when he resolves his second Shot. He has moved more than 1 meter, and is walking, so he takes a -2 to the BCS. Under a hail of returning fire, he breaks into a run for the next Action Phase, which continues into the last Action Phase in his Action, so that he fires that Shot at -4. Had he started dodging the bullets, his last shot would have suffered -8 (double the running penalty). Had he stopped for the last Action Phase, to return fire while standing still, he would still have suffered -2, since his fastest movement during the Action was still a Walk.

Firing From Cover

If the firer has grabbed some cover, and is trying to keep his protection while shooting, he may be presumed to be somewhat distracted from making his best shot.

Firing from Cover entails two types of restriction. First, a flat penalty to the BCS of -5. If the Gamesmaster wants to make this a sliding scale, the penalty may be (number of Locs covered)/6, down.

On a more complex front, assuming Cover will dictate a number of restrictions to the firer's activities:

Firing over cover: The firer must be exposed from his sternum (Locs 6-7) to his Face (Loc 2). If firing a Pistol, the whole of the Firing Arm is exposed. If firing a Long Gun, all of both Arms is exposed.

Firing around cover: The side of the body holding the gun is exposed. This is all of the head and throat (Locs 1-3) and the leg and hip on that side (unless lower cover there offers protection). If firing a Pistol, only the Firing Arm and its side of the torso are exposed. If firing a Long Gun, both Arms and all of the chest and abdomen are exposed (Locs 4-7).

Kneeling and prone position: A character standing behind a 1-meter wall is covered only from the groin down (Locs 12-20). If he kneels behind such a wall, he is covered to the sternum. The Gamesmaster must apply judgement to the exact levels of protection offered. He will find a "Random Cover" table in Book 3 on page 20. This will offer a sampling of the available cover to be found in a given area.

Firing from a Kneeling position is principally of use in firing over some low cover while maximizing protection.

Firing from a Prone position will expose the shooter's head, neck, and chest (Locs 1-5), the Firing Arm(s), and anything else the Gamesmaster rules to be exposed, to the attacker's angle of fire. It is generally worse than useless against fire from superior height. Its primary purpose is for maximum protection in firing around corners (as it removes the lower body from the field of returning fire) and when firing down at a target and over some cover, such as the edge of a roof. Again, the Gamesmaster will modify the effects of Prone firing to reflect the angles of fire involved.

The position used, standing, kneeling, or prone, has no direct effect on the BCS. It merely provides a means of maximizing the protection of available cover, which can effect the BCS.

One Hand/Two Hand-Offhand: There are several possible ways that the hand used to hold the gun, or the number of hands used, will affect play.

Normal Pistol use requires only the gun hand to be free, unless the Brace Weapon modifier is being used by the character. If firing a Pistol with a BBL of the "Pistol Carbine" size, both hands are needed.

Firing a Long Gun with one hand is not easy! For a Rifle or a full-sized shotgun, a sling must be attached to the gun, which the character must wrap around the forearm of his firing hand.

This takes 1 Action if his other hand is free to help. If it is not, a Dexterity AST is required.

Firing a "Two Handed" gun with only one hand will have the following effects:

- Only Hip Fire may be used.
- A penalty to the BCS is suffered. This equals (2 x ENC of gun) rounding fractions up.
- All recoil values are doubled.
- And if firing any weapon with the character's off-hand, the Off Hand Dexterity Rule is enforced!

Surprise and New Targets: While Surprised, characters can at best get off shots from Hip Fire. Only when they have had a chance to react to the situation can they upgrade their stance to Present.

A similar situation will occur when a firer opens fire on a given target. It will require 1 Action to "draw a bead" on that target, although this may be done while firing, or changing Stance, or what have you. Put simply, for the first Action in which firer is concentrating on a given target, his BCA will get a -2. Thereafter, this penalty will vanish until the firer switches to another target, or loses contact with the old one. It is possible to "draw a bead" on a given spot, which will allow penalty-free fire at new targets entering that area. The Gamesmaster should require some exactness in such a case. One cannot draw a bead on a football stadium. One can do so on a door or window, a small area of floor, a manhole, etc.

Sighted Fire: As stated, a character in Full Stance may take an Action to Sight his shot. This is possible on any gun having Iron Sights or other forms of sighting mechanism, but not on those without sights. Sighted Fire derives

from any bonuses, Features, or Options inherent in the particular type of sights on the gun.

Spraying Autofire: The Bursts of automatic weapons need not be directed solely at one target. The firer may spray, or "hose down," an area, or split fire among multiple targets. The total number of hexes separating his targets is added up, including those containing figures. All figures in the affected area are subject to fire. A separate BCS is rolled for each vulnerable figure. The BCS for each target is divided by the total number of hexes covered by the spray. Likewise, the BDG impacting a given target is divided by the number of hexes in the target area. It may be convenient for the Gamesmaster to require that all targets of spraying fire be within a 20-meter area, and to adjudicate that spray fire may never hit more characters than the number of rounds that were fired. On the positive side, the BCS penalty should be reduced in firing into a press, where characters are packed closely together.

Luther is being charged by mad dogs from two doors, three meters apart. Assuming no other modifiers apply to his BCS of 16, his spray attack will be resolved as follows:

Total area covered is two meter-wide doors and 3 meters of intervening space. 5 meters.

His BCS vs. the two Dogs is 16/5, for an effective 3 (round down). Their CDAs while charging will reduce this to less than 1, to be resolved as described in Book 1.

By sheer good luck, he hits one of the Dogs! Rolling the number of hits, he scores a 2. He is firing rounds with a BDG of 11, so the normal total that would affect the Dog is 22. Dividing this by 5, we get 4. His effective BDG against one mutt is only 4, probably only a wound. Meanwhile, the foaming jaws of the unscathed animal are snapping at his jugular!

TARGET ACTIONS

While the firer is doing his best to maximize his chance of hitting the targets, most targets (if of the fragile, organic kind) will be doing something to mess him up.

Target Movement

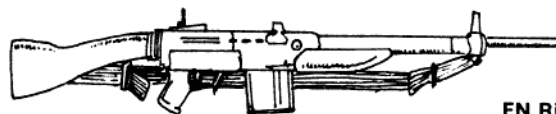
The movement rate of the target at the Action Phase when a shot is resolved will determine this modifier. It is always expressed as a multiple of the target's CDA, as follows:

- Target not moving, in combat, or taking Combat Move: CDA x 1
- Target Walking: CDA x 2
- Target Running: CDA x 3
- Target Dodging: Increase multiplier by 1
- Target Falling (Changing Position Downwards): CDA x 3

Target Cover

This does not often affect the BCS. Cover defends against gunfire by stopping bullets (one hopes). But there is a class of cover classified as "Visual Cover."

Visual Cover will effectively reduce the visual contact that the firer has with the target, with effects according to the prevailing light conditions. This type of cover is usually gotten from heavy brush, loose rubble, etc. It will rarely offer Barrier protection against bullets. What it does do is reduce the "Light" for the firer by a number of steps. These combine with prevailing visual conditions to determine the effective eye contact for the shot. For example, Visual Cover with a rating of 1 would have the same effect on a shot in Good Light as the firer would suffer in Dim Light. If it is dusk, when prevailing light is Dim, the Target is in Poor Light. And so on. The firer can offset this cover by making his Wit ST. If his die roll is in the AST range, it reduces the rating of the Visual Cover by 1. A CST reduces it by 2. A Critical Save negates it altogether. Targets moving in Visual Cover reduce its effect on their behalf by 1 per level of movement used (i.e., -1 for a Walk, -2 for a Run). If they use Stealth successfully, this is negated. Target firing from Visual Cover will be spotted by any observer who makes a Wit AST on a D10!



FN Rifle (FA)

BULLETS AND BALLISTICS

Having established a pretty extensive picture of how the gun gets its projectile to the target, let us now turn to the projectiles themselves: the ammunition.

MODERN CARTRIDGES

A cartridge, or round, is made up of the following components:

Case: A brass cylinder, closed at the bottom, into which all the other parts fit snugly.

Primer: The igniter for the main powder charge. A small amount of fulminating powder, i.e., powder which goes off if struck.

Charge: The charge of gunpowder which provides the propellant and gases for the shot.

Slug: Also called the bullet. The actual projectile fired from the gun.

Shot shell differs somewhat in construction, although it is quite similar in most respects. The Case is of laminated cardboard or plastic. The Primer fulfills the same function as it does in Ball Ammo rounds, as does the Charge. Instead of a single slug, the Shot Shell will have either a mass of "shot" or one very big "rifled slug." The differences in Range and hitting power of these loads are discussed at the appropriate points throughout these rules.

Shot Shell is measured not in Caliber, by inches or millimeters, but by "Gauge," an antiquated measure dating from the days of muzzle-loading weapons. A "12-Gauge" shotgun has a barrel of such dimensions that 12 lead balls of the same diameter would weigh one pound.

TYPES OF ROUNDS

Specifications for cartridges vary widely according to size (Caliber), bullet weight and shape, type of primer used (Centerfire or Rimfire), etc.

CALIBER

This has been partially discussed on p. 25. In discussing Caliber as a quality of the cartridge, the salient points to keep in mind are these:

- Caliber is measured in fractions of an inch (as in .45 ACP) or in millimeters (as in 7.62mm NATO).
- In general, the bigger the caliber, the more powerful the ammo. There are some notable exceptions, as you will see.
- Different rounds are not interchangeable! 38 Short is not the same as 38 Special. 9mm Short and 9mm Parabellum do not go into the same gun. Again, there are exceptions. Some weapons are specially designed to fire more than one type of ammo. Some ammo is used interchangeably between Pistols and Long Guns.

CENTERFIRE OR RIMFIRE

The two forms of primer used in modern cartridges are:

Rimfire: The primer is contained in a soft rim around the base of the casing. This is struck at the bottom of its circumference by the pin, igniting the primer which in turn sets off the main charge.

Centerfire: The primer is contained in a small cap, in the center of the casing's bottom. The firing pin on CF-loading guns is set to strike here.

Rimfire ammo comprises the immensely popular .22 caliber ammo, generally low-power but the commonest single caliber in the world today. Not much of a man stopper, but you will find weapons loading the RF 22 in any sporting goods store. Rimfire ammo WILL interchange between Pistols and Long Guns, and many weapons are made to accept ANY RF 22 cartridge: Short, Long, Long Rifle, etc.

Centerfire ammo is almost always more powerful than Rimfire. It is the standard round for hunting, police, and military weapons. Ranging from "popgun" loads for small Pistols up to the "cannons" used for big game, it is more versatile and certainly preferable in combat.

Centerfire ammo can also be "Reloaded." That is, used again. Cases can be cleaned, new charges and bullets inserted, and a new primer affixed, thus recycling the ammo. This is not possible with Rimfire ammo.

BDG (BULLET DAMAGE GROUP)

All cartridges have a rating called their BDG. This defines that round's damage potential in several specific areas:

DAMAGE CAPABILITY

The number of damage dice a round will do against the Armor Value of a struck target, and his DRT if it penetrates, is based on the BDG. The Damage Dice for a bullet strike are calculated as follows: number of D10 of Damage equals BDG/10, up. plus Damage Points equal BDG/10, nearest.

Thus, a bullet with BDG of 33 would do 4D10 plus 3 to a character it hits. 33/10 equals 3.3. Rounded up, this equals 4. Rounded to the nearest whole number, it is 3.

With a BDG of 35 or more, 4D10 plus 4 would be the bullet's Damage roll, as 35/10 is 3.5, which rounds nearest to 4.

MISSILE SPECIAL EFFECTS

The chance of Missile Special Effects occurring when a bullet hits the target is equal to the BDG of the round as a percentage. I.e., a round with BDG of 20 has a 20% chance of causing Missile Special Effects.

The rules governing Special Effects are in Book 1.

All BDG-based effects are subject to modifications which can raise or lower its effective value. See Ballistic Modifiers on page 36.

The following Table gives the Base BDG of all the ammo used in **Aftermath!** It is divided into several headings:

Centerfire Pistol Ammunition (CF Ball Ammo primarily used in Pistols), Centerfire Long Gun Ammunition, Rimfire Ammunition, and Shot Shell.

You will note that the BDG for Shot Shells is given in a slightly different form than the Ball Ammo. The "Gauge" of the gun is cross-referenced with the size of Shot used in the shell. The figure on the matrix is the BDG in question. I.e., 00 Buckshot in a 12-Gauge Shell has a BDG of 32.

The "Slug" figure is the BDG for a rifled shotgun Slug fired from a weapon of that Gauge. Shot Shell slugs are treated as any other Ball ammo.

Caliber figures given that are just a number, like 22,32-20, etc., are always to be read as Caliber inches. Only calibers given as "mm" are metric. Note that some rounds are widely used both in Europe and in the U.S., being measured in caliber inches here and in millimeters there. There is no difference between the metric and American measured rounds; they are identical e.g., .308-inch and 7.62mm NATO are the same cartridge.

BASE BDG TABLE

CENTERFIRE PISTOL AMMUNITION

Caliber	BDG	Caliber	BDG
221 Fireball	8	38 SuperAuto	6
22Jet	4	380 ACP	5
25 ACP (6.35mm)	1	38-40	4
256 Magnum	10	38Long	5
30 (7.65mm)	6	41 Magnum	16
32 Long	4	44 Magnum	21
32 Short	2	44 Special	6
32-20	3	44-40	6
32ACP	5	45 Long Colt	6
357 Magnum	11	45ACP	11
38 Short	2	9mm Parabellum	5
38 Special	10	9mm Short	2

RIMFIRE AMMUNITION

Caliber	BDG	Caliber	BDG
22 Auto	2	22 Short	1
22 Long	2	22 Stinger	6
22 Long Rifle	4	5mm Magnum	5
22 RF Magnum	6		

CENTERFIRE LONG GUN AMMUNITION

Caliber	BDG	Caliber	BDG
223 (5.56mm)	20	35	20
308 (7.62mm NATO)	27	44 Magnum	42
22-250	18	222	13
45-70 Govt	16	222 Magnum	14
25-35	15	243	21
30-40 Krag	24	250	18
38-40	8	256 Magnum	20
30-30	21	257	18
32-30	6	264 Magnum	31
44-40	12	270	28
25-20	6	280	28
6mm	24	284	28
6.5mm Magnum	25	300 Magnum	38
7mm Mauser	25	303	23
7mm Magnum	36	338 Magnum	41
8mm Mauser	25	350 Magnum	35
8mm Magnum	40	351	15
25-06	25	358	28
22Jet	8	375	45
30-06	26	444 Marlin	36
30 Carbine	12	458 Magnum	51
32 Special	21	460 Magnum	81
32	17		

SHOT SHELL AMMUNITION

Shot Size	Shotgun Gauge					
	10	12	16	20	.410	28
12-9*	12	10	8	6	4	2
4-BB**	16	14	12	10	8	6
	20	18	18	16	16	14
Buckshot						
4-3 Buck	22	18	18	18	x	x
2-1 Buck	28	24	22	20	x	x
00 Buck	36	32	30	x	x	x
Slug	x	27	23	17	6	x

* These are very light, small shot pellets, often referred to as "birdshot." On any target massing over 2 Enc, they do B type damage (half lethal, half subdual).

** Again, these are fairly light loads. At any range beyond SHT, they also do B damage.

x Indicates that no Shot Shell of that type is made for the Gauge in question.

Note that certain rounds appear on both the Centerfire Pistol and Centerfire Long Gun Tables. The are: 22 Jet, 32-20, 38-40, 44-40, and 44 Magnum. These are identical rounds, but are widely popular both as Pistol and as Long Gun loads. They are entered on each Table for easy reference. Some Players may favor using weapons which all chamber the same caliber, as such standardization can offset some of the problems in maintaining an ammo supply.

The Encumbrance of cartridges is also based on their Caliber. All Pistol ammo of 30 or less, and all Rimfire ammo, has an ENC value of .01. Other Pistol ammo (32 Caliber or larger), Long Gun Ammo, and Shot Shell, has an ENC value of .02.

BALLISTIC MODIFIERS

The BDG values given in the Table are the base values. This is the inherent BDG of a given round and is subject to modification before an effective BDG is applied to the target.

Ballistics, the study of projectile motion, is divided into three stages, which suit our needs here exactly. These are:

Internal Ballistics: The study of ballistic conditions pertaining from the moment the charge ignites until the bullet leaves the gun barrel.

External Ballistics: The study of the bullet's flight from the moment of leaving the barrel until a target is struck.

Terminal Ballistics: The study of ballistic conditions pertaining when the bullet hits the target.

At each stage of its flight, the bullet will be subject to different forces which may affect the BDG.

INTERNAL BALLISTIC MODIFIERS

The Base BDG is directly modified by Internal Ballistics. Only two factors come under this heading. One is due to the BBL of the gun. The other is obtained by using specially-made cartridges.

BBL

Modify the base BDG as shown:

Pistol SNUB: reduce BDG by 10%, rounding to nearest.

Pistol SHT or STD: No effect on BDG.

Pistol LNG or XLNG: Increase BDG by 10%, nearest.

"Pistol Carbine" or Carbine: The effect depends on the BDG Table used.

Pistol rounds fired from Carbines have a BDG increase of 50%, nearest. Long Gun rounds fired from Carbines suffer a 25% BDG loss to the figures from that Table.

Rifle: The BDG from the Long Gun Table is the Base BDG for rounds fired from Rifles.

The general formula for adapting Pistol Ammunition to firing from Long Guns, or Long Gun Ammunition to fire from weapons shorter than a Rifle, is:

- Carbine BDG equals 1.5 x Pistol BDG
- Rifle BDG equals 2 x Pistol BDG
- Pistol BDG equals .5 x Long Gun BDG
- Carbine BDG equals .75 x Long Gun BDG

Shotgun Ballistics: The only distinction is between a normal shotgun BBL and a riot gun, or "sawed-off" shotgun. This is handled as if the normal gun is the Rifle and the shorter one the Carbine, from the rules given just above.

High-Power Ammo: Special ammunition exists, and is rather common in some cases, in which the powder charge has been increased to give the

bullet a higher muzzle velocity. Such ammo receives a 50% increase to the base BDG given on the table.

The stress of firing this souped-up ammunition can be risky for the gun. The odds of a Critical Miss are increased by a number equal to 5- DUR of weapon. In other words, firing a cheap pistol with DUR of 1 while using High-Power ammo increases the chance of a Critical Miss by 5 - 1, or 4.

Thus, while a normal Critical Miss occurs on a die roll of 20 on the BCS roll, in this case the Miss occurs on a die roll of 20 - 4 (or 16), or higher!

FEATURE HIGH-POWER FIREARMS

These are simply firearms reinforced to allow use of High Power ammo without suffering the increased risk of a Critical Miss.

High-Power Shotshell: There is no danger of overloading a shotgun. Shells are physically incapable of fitting into a magazine for another Gauge or type of Shell. There are High-Power, or Magnum, Shot Shells. These run 3 inches in length rather than the normal 2.5 inches. Magnum Shot Shells are packed with more shot and more powder. They increase the base BDG by 50%.

EXTERNAL BALLISTIC MODIFIERS

There are two factors which influence External Ballistics: Range and Barriers.

Range and BDG

The Range Step will raise or lower the BDG, This is the Range Step directly from the Table. Use of Sights to reduce Range for BCS purposes will not affect the ballistics of the shot. Match Weapons do enjoy their Range modification in this connection. Range modifiers to BDG are:

PBR:	plus 10 to effective BDG.
SHT or EFF:	No modifications to BDG.
LNG:	minus 10% to effective BDG.
EXT:	minus 25% to effective BDG.
MAX:	minus 50% to effective BDG.

Barriers and BDG

As specified in Book 1, a bullet penetrating a Barrier will have its BDG reduced by the Barrier value of the material in question. This reduces the effective BDG.

TERMINAL BALLISTIC MODIFIERS

These factors control the effective BDG at the moment of impact. It is this final value which is used to determine damage and Special Effects. There are several factors based on the type of bullet used, and of course the effects of a Critical Hit will increase the effective BDG, often drastically.

Critical Hits

Apart from their other effects, Critical Hits with a bullet will increase the effective BDG, varying by the type of weapon used:

Firing Pistol:	Add D10 to the BDG.
Firing Long Gun:	Add 2D10 to the BDG.

Auto fire: All the shots in the Burst will hit their target, and their total BDG is increased as if a D3 more rounds impacted with them. E.g., a Critical Hit is scored with a SMG firing 9mm Parabellum. These have a base BDG of 5. Fired from a Pistol XLNG, the default BBL for SMG, they add 10%, for 5.5, or 6. The gun fires a Burst of 3 rounds. Thus, all 3 rounds hit, for an effective BDG of 18, and rolling a D3 for 2, 2 x 6 is added, or 12, for a total of 30, doing 3D10 plus 3.

Hollow-Point Bullets

These are specially-made bullets with hollowed, cupped, or flattened tips. There are also bullets designed to expand upon striking a target. All such bullets are designated as Hollow Points for convenience.

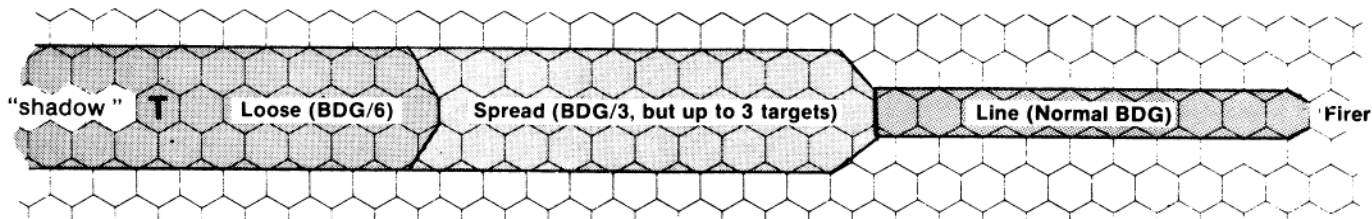
The effective BDG for Hollow Points is not affected for purposes of determining damage, but when checking for Missile Special Effects, double the effective BDG to derive the percentage chance.

When hitting a Barrier, the Barrier value is also doubled for the Hollow Point bullet. A 10-point Barrier would reduce the effective BDG of a Hollow Point by 20.

Jacketed Bullets

These are the direct opposites of Hollow Points. Coated with steel to allow maximum penetration, Jacketed rounds will suffer only half the Barrier value as a BDG reduction, but their chance of causing Special Effects is likewise halved.

Shotgun blast with a riot gun



Fragmenting Bullets

The very latest in lethality. These nasty little slugs are designed to fragment on hitting a target, propelling several slivers of metal in an expanding pattern through the wound.

The Special Effects probabilities of Fragmenting rounds are not altered. However, they will increase their Damage roll by a factor of 1.5. In effect, these bullets have a WDM of 1.5.

Fragmenting rounds suffer the same, doubled Barrier effects as Hollow Points.

Shot Shell Ballistics

The ballistic behavior of a charge of shot, rather than a single bullet, is what makes shotguns unique. As the pellets travel further, they spread out, exposing a wider area to attack, albeit with reduced damage potential.

The controlling factor in this slow spread is the "Choke" of the gun barrel. The tightest Choke is "Full," and an "Open" Choke is the loosest. The Choke is a tube implanted in the end of the barrel, usually permanently, that "chokes" or compresses the stream of shot leaving the gun.

LINE

Out to the end of SHT Range, the shot is in Line. It is a tightly compact mass, affecting only 1 possible target, and acting like Ball Ammo for game purposes.

SPREAD

From EFF through LNG Range Steps, the shot pattern spreads out, affecting a front 3 meters wide. This front moves along the line of fire, and each hex of it will menace the first target in that line. Thus, a Spread pattern of shot could hit one target at EFF Range, and still attack two others out to LNG Range, if they were also in the line of fire. Once the Attack has been resolved for a given hex of the Spread front, that particular hex's worth of shot is gone creating a sort of "shadow."

The BDG used against a target in one of these Spread hexes is the effective BDG of the Shot Shell divided by 3.

Double Barreled Shotgun



LOOSE

At EXT or MAX Range, the shot pattern is still moving in that 3-meter front, but has lost impetus and some of its pellets. Calculate the effective BDG of the shot, and divide by 6 for the final BDG used on a target.

OTHER FIREARMS

In previous sections we have dealt with the two main classes of Small Arms: those firing Ball Ammo and the shotguns. This covers about 80% of the weapons you will find in an average *Aftermath!* campaign. But it is not the whole ball game. There is considerable firepower, heavy firepower, available in the form of heavy machine guns, various gun-propelled grenades, mortars, and so on, which will be floating around a post-Ruin world. These are classified as Support Weapons in the Skill system.

Moving back through time, we also have Black Powder firearms to consider. There are a lot of advantages to a gun which uses good old smoky gunpowder, does not have many carefully crafted moving parts in it, and needs no fancy contained cartridges. Of course, your first shot had better count!

SUPPORT WEAPONS

The Gamesmaster will need to exercise discretion in using Support Weapons in the campaign. When directed against Player-Characters, they will tend to lead to a new character design session at the end of the

adventure. Used by Player-Characters, they tend to take a lot of the challenge out of combat (by slaughtering the opponents at a range of, say, 1000 meters). We do not provide the same extensive data on Support Weapons as we have for Small Arms. The models given here will serve as guides to the Gamesmaster in adding other specimens to his campaign, should he wish to do so.

Many Support Weapons are capable of use against armored vehicles. For applications of firearms against vehicles, see the Vehicle rules starting on p. 57.

MACHINE GUNS

True Machine Guns differ from Sub-Machine Guns in several ways. They are not man-portable, requiring a mount of some kind (bipod, tripod, or vehicular). They are capable of sustained autofire, laying down a hail of bullets very effectively, even when the firer is spraying an area. They are deadly weapons in most tactical situations.

Light and Heavy MG

Machine Guns (abbreviated as MG) come in two sizes: Light (LMG) and Heavy (HMG). This is an overall measurement based on the Caliber of the MG and its ENC. The commonest MG calibers are:

LMG: 30 Browning, 7.62 NATO, 5.56mm

HMG: 7.62 x 39mm, 20mm, 40 or 50 Caliber The 7.62mm and 5.56mm rounds shown are the same as those listed in the Long Guns Ammunition Table.

The others are used only in MGs. Their BDGs are:

MACHINE GUN AMMUNITION

Caliber	BDG	Caliber	BDG
30 Browning	20	7.62 x 39mm	35
7.62mm NATO	27	40 Cal.	60
5.56mm	20	50 Cal.	90
		20mm	100

The ENC value of an MG is determined by its weight in kilograms divided by 10.

Using MGs:

The Autoweapon Skill is used alone (no averaging with anything) to fire Machine Guns. This extends to servicing the weapon, aim, and control rolls.

Range

These are divided into LMG and HMG Range Steps

	PBR	SHT	EFF	LNG	EXT	MAX
LMG	50	125	250	500	1000	2000
HMG	50	250	500	1000	2000	4000

OPTION Tracers

The use of Tracers, bullets loaded with a flare powder which causes them to show a thin path of flame, will increase the BCS of the firer by 1. Maximum efficiency suggested by military doctrine is achieved when every 10th round is Tracer. Less will not give the bonus. More will not increase it.

Rate of Fire

The MG can lay down heavy fire over an extended target area (that's what it's for). Built to take punishment, it is capable of sustained fire without the jamming that plagues Sub-Machine Guns.

All MGs have an assigned Rate of Fire, drawn from the Specifications of the "real" weapon. This determines the Machine Gun's Rate Factor and the number of rounds it fires in 1 Action.

Actual Rate in Rounds per Minute	Rate Factor	Rounds Fired per Action
Under 500 RpM	D6 x .5	20
500-750 RpM	2D3 x .5	30
751-1000 RpM	D10 x .5	40
Over 1000 RpM	2D5 x .5	50

The firer may elect to use any lower Rate he wishes, to conserve ammunition.

To determine the effects of a hit by an MG, calculate the effective BDG for 1 round of the ammo used, applying all relevant modifiers.

Roll for damage based on the effective BDG. Roll the dice indicated by the Rate Factor. Multiply the two scores. This is the damage done by the hit.

For Missile Special Effects, a number of rolls equal to the Rate Factor are made, using the effective BDG as the percentage chance. If the Rate Factor is fractional, the last such roll is at half value. If any of these rolls succeed, the target suffers Special Effects. For example, a hit from a LMG firing 5.56 ammo at a rate of 400 RpM is suffered. The damage roll for the round (BDG of 20) is made on 2D10, for a 12. The Rate Factor is 1 D6 x .5. A 3 is rolled for a Rate Factor of 1.5.

The damage potential of the hit is 12 x 1.5 or 18. Two rolls are made for Missile Special Effects. The first is at full value (20%) and the second at half (10%).

Various modifiers may increase or decrease the Rate Factors beyond the ranges on the Table. The progressions in question are:

LOWER: D3 x .5, D2 x .5, 1 x.5
HIGHER: D12 x .5, 2D6 X .5, D20 x .5, 2D10 x .5

Modification beyond the extremes given is not possible.

Zones of Fire

To fire a Machine Gun, the firer follows this procedure.

Declare Rate of Fire: This may be any value from the Table given, less than or equal to the gun's stated Rate. Values lower than the "Under 500" RpM may not be selected. The rounds fired in the Action will be as stated on the Table, even if the effective Rate changes during the Action.

Select a Target Hex: A given point on the DAT Display must be declared a Target Hex by the gunner. To zero in on the Target Hex requires an Autoweapon BCS, subject to all relevant modifiers not due to Target Action. The gun is aimed at a space, not at any particular occupant of that space.

The roll to hit the Target Hex is made on the first Action Phase of the gunner's Action. A miss means his fire is not on target. He may try again on each Action Phase of his PCA, but his effective Rate Factor will drop 1 step per retry. He may continue to roll for the Target Hex until his PCA runs out, his Rate Factor drops below the minimum permissible level, or he Critically Misses, which will also have its usual nasty effects. He may opt to abort the attempt at any time, which will still require him to refrain from other action until his PCA runs out, but will cut the ammo costs for the Action in half.

Declare Traverse: Once the Target Hex is hit, the gunner must declare if he is "Traversing" the MG, and if so, how much Traverse he is using. Traversing means moving the gun barrel in an arc, to cover more area around the Target Hex. The gunner has a good deal of freedom in how to go about this.

The basic "Lethal Zone" for an MG burst is a 1 x 3 meter area (1 hex wide by 3 long), centered on the Target Hex. The gunner may declare this basic Zone to consist of the Target Hex and any two contiguous hexes which are 180 degrees apart, so that the Lethal Zone is a line, 3 hexes long. This may lie at any angle to the line of fire and requires a Traverses of 0 (ie., none).

For every additional Traverse declared, the gunner may lay down a second Lethal Zone, also 1 x 3 hexes, either joining the end of a second Zone to the end of another (creating a line of hexes with a length increasing by multiples of 3), or widening an existing Zone by 1 hex in any direction, as long as all three hexes of the second Zone are contiguous with all three hexes of the other.

Each additional Zone increases the Traverse by 1. The Traverse equals the number of steps the effective Rate Factor is reduced.

Hitting Targets: Any target in a Lethal Zone when the Target Hex is hit, or any target entering a Zone during the term of the gunner's Action, is exposed to an immediate attack by the gunner. If this occurs, the gunner rolls an Autoweapon BCS, subject to all relevant modifiers (Range, Visual Conditions, and Target Actions), to see if he hits the target. If he does, damage is rolled as described above.

A character who leaves one Zone to enter another is subject to attack again.

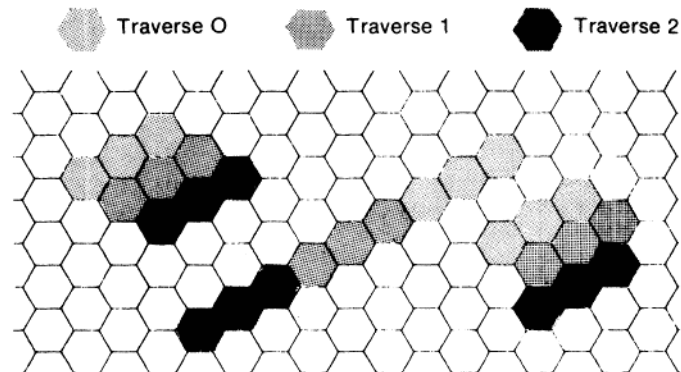
A vehicle subject to attack for entering a Zone which occupies two or more hexes simultaneously, is subject to a separate attack for each Zone occupied.

A target traveling into 2 or more Zones in a single Action Phase is likewise subject to a separate attack in each Zone in question.

Initial Machine Gun Lethal Zone



Examples of MG Lethal Zones



MG Construction

As you may have gathered, Machine Guns are big, heavy, rugged weapons. But nothing is perfect and even the most durable weapon will tend to jam if firing at MG rates for long periods.

If the gun is fired for a consecutive series of Actions greater than its durability, it may jam. A "rest" of 1 Combat Turn will drop the tally back to 0, at any time. (i.e., a weapon with OUR of 4 may be fired safely for 4 Actions, then not fired for a full Combat Turn, etc., and will not jam unless a Critical Miss says it does).

For every Action of firing after a rest is due, a D6 is rolled. If the die roll is greater than or equal to the DUR of the gun, it jams. Clear the jam as for any automatic Small Arms.

OPTION Changeable Barrels

The working life of a Machine Gun is limited by the barrel, which has a distressing tendency to warp under the tremendous heat generated by sustained fire.

There are two ways to measure this operating lifespan. One deals with the immediate effects of overlong firing periods, and the other with the slow effects of even normal use.

In the first case, it posits that the gunner has been firing well past the period requiring a "rest" to avoid possible jams. If the DUR roll has been made for a number of firing Actions equal to the DUR value of the gun, then a failed roll will indicate barrel warpage, instead of a simple jam. I.e., an MG with a OUR of 4 has been fired for 8 consecutive Actions, without allowing a 1 Combat Turn rest. It has obviously had to make the OUR roll for the last 4 Actions, or it would have jammed. If this concentrated fire continues, and the DUR roll fails, the gun is kaput until a new barrel is mounted (an operation requiring 5 Actions if one has a new barrel handy).

Over the long term, a Machine Gun can fire a total number of rounds equal to its OUR times the Rounds fired per Action at its maximum Rate times 100.

For example, a Machine Gun with OUR of 4, a maximum RpM of 800, firing 40 rounds per Action, will have a minimum barrel life of 4 x 40 x 100 or 1600 rounds, or 400 Actions at maximum rate. This is probably too tedious to bother with unless it is desired to cut short the lifespan of an MG for some reason.

As MGs are always fired from some kind of mount, it is impossible to either assume Full Stance or drop to Hip Fire. If the gun is not properly mounted, it cannot be used. If it is, the rules governing Present Stance always apply, although the gunner cannot exercise the Combat Move option, since he must be positioned behind the gun.

Magazines

Most Machine Guns, designed to fire from a fixed position, with a two-man operating crew, do not limit their huge appetite for ammunition to simple clips or boxes. Ammo in long, linked belts feeds endlessly into the gun's receiver.

Belts are of the fabric or non-disintegrating type, or the metal, disintegrating link type. The former is a long canvas strip with loops for the cartridges. The latter is composed of individual metal clips, hooked together, which are ejected from the gun singly as it fires. Both are re-usable. If it really is necessary to try to reload or rebuild a belt in Detailed Action Time, use the Loose Rounds Rule. In a looser time frame, allow a character to reload his OFT Group x MNA x 20 rounds into a belt in 1 minute.

There are also various box magazines used on some lighter Machine Guns. Treat these as any other Box clip.

Reloading prepared magazines or belts into an MG is handled under the Box magazine rules for Small Arms.

In closing on Machine Guns, Appendix 1 of Book 3 includes a sample of some half-dozen current models, both U.S.-made and European. These should give the Gamesmaster enough help to add his own designs to the campaign.

MORTARS

Mortars are essentially big tubes, firing explosive shells in high, arcing trajectories (Indirect Fire) to drop onto a target area. The effects of Mortar Shells are given in the section on Explosives.

A Mortar gives a shell a fixed velocity. Aiming the weapon consists of angling the tube so that this velocity will propel the shell in an arc terminating at the desired point. Mortars range in size from man-portable weapons with roughly a 60mm diameter, up to wheel-mounted monsters, 120mm in diameter, requiring a vehicle or animal tow to move. All Mortars are fitted with a butt plate which rests on the ground, transmitting the recoil of the discharge directly to earth.

Encumbrance

There are three classes of Mortar: Light, Medium, and Heavy. Light and Medium Mortars will break down into three parts, Buttplate, Mount, and Tube, for man-carrying. Heavy Mortars will not.

Lt. Mortars: 60mm diameter. Tube ENC of 2. Mount ENC of 1. Buttplate ENC of 2. Total ENC assembled of 5. Shells ENC of .5.

Med. Mortars: 80mm diameter. Tube ENC of 4. Mount ENC of 2. Buttplate ENC of 3. Total ENC assembled of 9. Shells ENC of .7.

Hvy. Mortars: 120 mm diameter. They do not break down for carrying. ENC of 12-16. Shells ENC of 1.

Range

Mortars have a Minimum Range as well as a Maximum. The weapon's angle of fire can be varied only so much from a given position. Firing (or trying to) at shorter ranges than minimum can be suicidal, putting the mortar crew inside the lethal zone of their shells' explosions.

Lt. Mortar (60mm): Minimum Range: 75 meters. Maximum Range: 1500 m.

Med. Mortar (80mm): Minimum Range: 100 m. Maximum Range: 3000 m.

Hvy. Mortar (120mm): Minimum Range: 150 m. Maximum Range: 6000 m.

As Mortars use Indirect Fire, they may shoot over obstacles between them and the target. Maximum height of such obstacles may not exceed (Maximum Range - Range to Target)/20. Firing a Medium Mortar at a target 1200 meters away allows fire over an obstacle (3000-1200)/20 equals 1800/20, or 90, meters high.

Firing the Mortar

A Mortar is best handled with a crew of three characters. Each will use his Mortar Skill to fulfill his function to the maximum of efficiency. Crew members are:

Observer: Requires 1 Action to sight in on Target. If not equipped with optical gear (telescope, binoculars, etc.) capable of reducing effective Range from his position to target to 1000 meters or less, his BCS is halved. He must perform an Observe and Command Action after each shot, in order to try to use his BCS.

Gunner: Actually aims the Mortar. His BCS is used to determine the location of the hit. It requires 2 Actions to readjust the Mortar's settings.

Loader: Loads in the Mortar Shell, which automatically fires the weapon. His BCS is used to set shell for air burst, if desired. This increases the effective range of the Shell's fragmentation pattern (see Explosives), if BCS is made, Shell bursts in air. If not made, it bursts on the ground.

It requires 1 Action to load the Mortar. The weapon fires at the end of the Action.

The Loader's BCS is also used as a Control roll in the event of a Critical Miss on the Gunner's BCS roll.

You will note that one man may operate a Mortar, as he may fulfill all three Crew functions, but his rate of fire will be much slower than a fully-trained Crew's would be.

Hitting the Target

Mortar fire is directed at a Target Hex, like Machine Gun fire. Due to the nature of the Mortar's ballistics, the first shots directed at a given target are penalized, slowly approaching an optimum as the Observer's data is applied by the Gunner to bring Shells in on target.

In deploying the Mortar to fire a shot, calculate the range from Mortar to target. The initial penalty is the difference between this range and either the Maximum or the Minimum Range for the Mortar, whichever is less. Divide the difference by 100 and subtract that from the Gunner's BCS.

On subsequent shots at the same target, the Observer will try to use his BCS to reduce this penalty. If he makes it, reduce the penalty by his Wit Group. If he fails, reduce the penalty by 1. If his BCS roll scores a Critical Hit, eliminate the entire penalty. If it is a Critical Miss, increase the penalty by (6-Wit Group).

If the Mortar switches targets without altering its location, the penalty calculation is made anew. However, besides determining the difference between the new target's range, the Maximum, and the Minimum, the Gamesmaster should also determine the difference between the new target's range and the previous target's range. The new penalty is the least of these three possibilities.

At the end of the Loader's Action, the Gunner rolls his BCS to see where the Shell actually lands.

If BCS Indicates a HIT: Determine Effect Number. Subtract this from penalty. If result is greater than 0, a precise hit has not occurred. Multiply difference by roll of 2D10, determine a vector with a D6. Shell actually fell in indicated spot. The near miss may do quite as well as a direct hit, this being in the nature of high explosive fragmentation shells.

If BCS indicates a Miss: Subtract effective BCS from score rolled. Add penalty (if any left). Multiply by roll of 2D10 as indicated above, determining direction with a D6. Again, a near miss may do the job quite satisfactorily, painful though this may be to the purist of mass destruction.

On a Critical Hit, the Shell lands exactly on the target. The Gunner has his choice of an Air Burst or normal hit for the Shell. See the Explosives rules for a full description of this effect.

At any time, the Gunner may spend his 2 Actions to "lock on target." Thereafter, any Shells fired will land exactly where the shot before them did, until 1 Action is spent to "unlock" the adjusting mechanism.

Critical Misses

If the Loader did not make his Control throw, a Critical Miss (indicated by a 20 on the Gunner's BCS roll) is handled differently from Small Arms Criticals. A "No Effect" result means a dud Shell. It lands harmlessly in the indicated area. Any other result indicates a jammed Shell, lodged in the tube. This presents an effective Barrier value of 20 to attempts to remove it. Due to the awkward wedging of Shell in tube, a Strength CST is needed to try to extract it, rolling once per Action (only one character may work on the jam at one time).

Only on a roll of 100 when checking Critical Miss effects does the Shell blow up in the tube, exposing the crew to a blast with its effects reduced by half. Even with this reduction such a result is usually lethal.

RIFLE GRENADES

Rifle Grenades are explosive projectiles designed to be fired from a military rifle. Early models required special ammunition in the gun and bulky adapter mechanisms. Modern grenades dovetail with standard designs on most assault rifles and carbines to permit firing with no special operations required.

The effects of Rifle Grenades on a target area are discussed in the Explosives section. What concerns us here is how the projectiles are fired. A character's BCS for firing Rifle Grenades is determined by averaging Rifle and Grenade Launcher Skills.

Types of Rifle Grenades

We may break this down into several sub-categories. First, what is the propulsion system? There are two types: Ballistite and Live Ammo. They may be fired with an adapter or by a launcher.

BALLISTITE grenades require that a special, blank cartridge be chambered into the gun, usually necessitating the removal of the weapon's normal clip. This triggers the launching charge in the grenade. Ballistite

rounds are thus cumbersome to use, but give the grenades designed to take them more range than the grenades launched using live ammo.

LIVE AMMO grenades require no special round for launching. The gun's normal load of Ball Ammo is sufficient to send them their merry way. They lack the range of Ballistite models.

ADAPTER grenades require that a special adapter mechanism be fitted to the gun. It is useless for normal fire while so configured. It is rare to find such grenades in modern weaponry. The two models used in *Aftermath!* are the US Army M-1 and M-14 Rifle Grenades, made for the famous weapons of WWII and Korea. They are exclusively Ballistite-launched weapons.

22mm LAUNCHER grenades are the modern form of the weapon. Almost all military rifles and carbines designed after 1960 have a 22mm Grenade Launcher built into the flash hider. This is an integral part of the gun. Any 22mm Rifle Grenade can be launched from a gun with this Feature. Some of the 22mm grenades use Ballistite, others Live Ammo.

Other than these operational questions, it will be necessary to keep track of what the grenade's function is. The commonest classes are:

HEAP: High Explosive Anti-Personnel. Powerful fragmentation grenades, like super hand grenades.

HEAT: High Explosive Anti-Tank. Tipped with shaped charges, these are used as infantry Support Weapons against armored vehicles.

WP: White Phosphorus incendiary grenades. The effects of WP weapons are described in Book 3, along with other incendiary weaponry.

Grenade Ranges

This varies among Ballistite-fired, Adapter-fired, and Live Ammo types.

GRENADE TYPE

	PBR	SHT	EFF	LNG	EXT	MAX
Adapter	20-30	50	75	100	200	300
22mm Ballistite	20-30	75	100	300	500	700
22mm Live Ammo	20-30	50	100	250	400	650

Note: Point Blank Range (PBR) for Rifle Grenades is rated as starting at 20 meters. This is because Rifle Grenades are fitted with safety devices which do not arm the grenade until it has traveled 20 meters from its firing point. Thus, shots at targets closer than 20 meters are not possible.

Hitting the Target

As with Mortars, the Rifle Grenade is aimed at a specific area, not an individual target. With a less pronounced arc of fire, they are not as difficult to aim, using the averaged scores in Rifle and Grenade Launcher Skills to derive the BCS. Shots are resolved as with normal gun fire, but all fire is from presented stance, and every shot is subject to a -2 penalty to cover the lower general accuracy of the Rifle Grenade.

Note that a Critical Miss on this shot does not mean that the grenade is faulty. It is handled as for any firearm and refers to the rifle's performance, not the grenades. Treat "No Effect" results as dud rounds. When the firer recovers from the Critical effect, if the gun is ready to fire, he may try to launch the grenade again.

In the event of a normal miss, the Gamesmaster determines the result as with Mortar fire. Thus, "close enough" can be more than sufficient.

In the event of a Critical Hit, the firer may choose to make the grenade hit an Air Burst, with effects as described in the Explosives rules.

Rifle Grenade Timetable

The handling of the Rifle Grenade is cumbersome at best. The following "Manual of Arms" lists the steps required to load and fire such a projectile in order. Simply delete the steps that do not relate to the type of grenade being used to derive the particular timetable for you. The procedure is:

- 1 Action to clear magazine for Ballistite round.
- 1 Action to mount 22mm Grenade or 2 Actions to mount Adapter device.
- 1 Action to mount Adapter grenade.
- 1 Action to load Ballistite round.
- 1 Action to prepare to fire.
- 1 Action to fire.
- 1 Action to remove Adapter device.

Reloading another grenade would pick up at the "Mount Grenade" Action. Switching the rifle back to normal configuration requires the same number of steps it took to prepare the gun in the first place, plus however long it takes to reload, if a Ballistite grenade was used.

GRENADE LAUNCHER

Unlike the Rifle Grenade, which is to an extent an attempt to turn rifles into Support Weapons, Grenade Launchers are special weapons designed to toss a 40mm projectile for a limited distance.

Types of Launchers

40mm Grenade Launchers come in three configurations.

The first is an integral part of an assault rifle, slung under the gun barrel. When using this type, the BCS is determined by averaging Grenade Launcher and Rifle scores.

Next we have a completely separate launcher, looking like a stubby shotgun. Such Grenade Launchers are usually fitted with shoulder stocks, but are fired using only the Grenade Launcher Skill.

The last type of launcher is a pistol-grip affair, but may be either fired mounted to an assault rifle or used on its own, albeit requiring two hands to steady. This last is the most modern design.

Also to be considered are those new launchers which carry a clip of 40mm grenades for a slow version of semi-automatic fire. The vast run of Grenade Launchers are single-shot weapons. They operate as Break Action weapons for reloading purposes.

The clip-fed Grenade Launchers carry a Box magazine of 4 grenades, firing 1 shot per Action.

Types of Grenades

Any 40mm Launcher will accommodate any 40mm grenade. The specific effects of the projectiles are described elsewhere, but in general terms they are:

HEAP: As Rifle Grenades. This is essentially a Hand Grenade. See the Explosives section.

WP: White Phosphorus. See Fire Weapons section.

CANISTER: A close combat round, essentially using the Launcher as a giant shotgun, firing a mass of fragments.

See the Explosives section.

GAS: A gas shell is fired, which explodes in contact with the ground. See Gas rules in Book 3. The Tear Gas launchers used by police are generally 40mm Launchers.

Grenade Launcher Ranges

The Grenade Launcher is a limited weapon, compared to the mighty Mortars or lordly Rifle Grenades. It can put any of its loads except Canister out to distances as follows:

PBR:	20-30 meters
SHT:	50 meters
EFF:	75 meters
LNG:	125 meters
EXT:	250 meters
MAX:	500 meters

Canisters' hideous effect is limited to about a 30-meter maximum as described under Explosives.

Firing the Launcher

The appropriate Skill or averaged Skill is used. Treat this as Rifle Grenade use in all respects.



Flintlock Rifle

BLACK POWDER FIREARMS

From the heights of modern firepower, we now turn back to an altogether earlier form of weapon: the Black Powder or Muzzle-Loading weapon. While this class takes in every firearm from the early Renaissance to the late 19th century, we will confine our study to two of the most recent models: the flintlock and its more modern successor, the percussion cap firearm.

The Muzzle Loader is a very straightforward gun. A long, usually smoothbored barrel is solidly strapped to the gunstock, almost completely closed at the back end except for a small hole connecting to a priming pan. In the flintlock, this pan holds a small amount of loose gunpowder (Primer). In a percussion model, this has been replaced by a "nipple" over which a Percussion Cap is fitted. The explosive in this cap goes off on impact from the

hammer, flashing a spark into the main powder charge in the gun barrel. BANG!

The Muzzle Loader recreates a giant model of the compact, self-contained cartridge of today. First, if recently fired, the barrel is swabbed, cleaning the remains of old charges out. A new charge is then inserted and rammed in, packing it tightly. The bullet is then wrapped in a wad, and dropped in on top of the charge. Another wad is rammed tightly over it all, to seal the powder in and confine its burn, so as to build up the pressures needed to fire the weapon.

The gun is now loaded.

The primer charge or percussion cap is now placed on the pan, and the gun is cocked. It is not ready to fire, if nothing goes wrong.

MUZZLE LOADING TIMETABLE

The following "Manual of Arms" gives the Actions involved in preparing to fire a Muzzle Loader.

If weapon has been fired already, 1 Action to swab.

1 Action to load in charge. (3 Actions if charge is not pre-measured)

1 Action to ram charge in tightly.

1 Action to wrap bullet in a wad.

1 Action to ram bullet into barrel.

1 Action to wad the whole thing.

1 Action to put rammer away (it may be dropped, of course).

1 Action to prepare primer or percussion cap.

1 Action to prime with a Cap or 2 Actions to prime with loose Powder.

1 Action to cock.

The gun is now, finally, ready to fire!!!

MUZZLE LOADER WEAPON SPECS

As with most firearms, these come in Pistol and Long Gun models. They are by no means as finicky about Caliber as their modern descendants, but still limit the size of Bullet that may be used within about a .05-inch range. We will be doing this marvelous class of weapon little justice in this abbreviated view, but will take the following Calibers in both sizes as the standard **Aftermath!** models: 45, 50, 65, 70. Due to the low muzzle velocity achieved by Black Powder fire, large slugs were the order of the day to achieve adequate stopping power with the one shot usually allowed hunter or soldier with these weapons.

Black Powder Ranges

The ranges are set by the overall size of the gun.

	PBR	SHT	EFF	LNG	EXT	MAX
Pistol	5	10	15	30	60	90
Long Gun	10	20	50	100	150	200

Feature Rifled Barrels

It was not until the 17th century that someone noticed that spinning projectiles hit harder and fly truer than those that do not spin. The way to get bullets to do this was by rifling the gun barrel, incising grooves in a long spiral along the inside to impart this spin to the projectile as it rushed up the tube.

Rifled gun barrels increase the range steps of the weapon by 50%, just as Match Quality weapons do with modern guns.

ENCUMBRANCE

Unquestionably, the old firearms bulk more than the sleek killers of today. In the absence of hard data on actual weights, assume standard Encumbrances for the weapons of .4 for all Pistols and 1 .5 for all Long Guns.

BLACK POWDER BDG

The BOG for a bullet from a Muzzle Loader is dependent on the Powder Charge and the Caliber. The powder loaded into the gun is measured in "Drains" (of which there are 24 to the ounce). The Caliber is, of course, in fractions of an inch.

The base BOG for a given load in the gun is equal to 10 x (Charge in Drains) x (Caliber in inches), This is the BOG from Long Guns. Pistols halve this just as they do in modern guns.

Please remember that the Caliber value must be in fractions of an inch, For a 45 Caliber weapon, use point 45 as a factor — 45/100ths of an inch!

This is used as the base BCS, subject to all the usual Ballistic modifiers.

ABOUT POWDER CHARGES

It is unsafe just to stuff gunpowder into the gun until it is a veritable cannon. The upper limit on the number of charges is the Durability of the weapon. For every Dram over this limit that is loaded, increase the chance of a Critical Miss by 1. I.e., in a DUR-4 gun with 4 Drains of powder in the charge, the chance of a Critical Miss is on a natural die roll of 20, as always. Load 5 Drains in, and the Critical Miss occurs on a die roll of 19-20. Load in 6 Drains, and the chance is on a roll of 18-20; and so on.

OPTION Charge Loading Rule

If desired, the Actions spent in loading a Charge can vary according to the size of the Charge. The maximum number of 0 rams that can be loaded in 1 Action is the user's Deftness Group. The use of pre-packaged paper cartridges allows the loading a 1 Cartridge in 1 Action, but only one such Cartridge may be in the gun at a time. A Cartridge contains a pre-measured Charge and a pre-wrapped Bullet, bullet.

FLASHES IN THE PAN

Apart from the omnipresent danger of a Critical Miss, the Primer presents a question when firing Muzzle Loaders. Will it go off and trigger the main Charge?

Using loose powder as a primer gives a base 1 in 10 chance of a misfire. Add the roll of 1D6 to this if it is raining, and increase by 1 D6 for every minute that the gun is out in the wet. Also, if the primer has not been changed in the last few hours, the Gamesmaster should feel free to roll 1 D3 for an addition to this penalty.

Percussion Caps do not care if it is wet, or how long they are on the pan before firing. They have a flat 1 in 20 chance of misfiring, subject to no adds under most circumstances.

EXPLOSIVES

This Section deals with chemical explosives: dynamite, plastic explosive, blasting powders, and the weapons made from them: hand or rifle grenades, mortar shells, mines, etc. We do not discuss atomic explosives (Gamesmasters will find some ideas on nukes in Book 3, but frankly, they're not our thing).

These rules govern the use of explosives in two roles: antipersonnel (i.e. against characters) and demolition (i.e. against the Barrier value of structures). The use of explosives against Vehicles is specifically outlined at the end of the section.

RATING EXPLOSIVES

All explosive materials generate a concussion effect when detonated. This is called "Blast." It is effective against both characters and Barriers.

Most explosive weapons will produce a fragmentation effect as well. This is called "Frag" (for Fragmentation). It is produced by sheathing an explosive charge with a metal or plastic jacket, which is smashed into shards by the force of the explosion and hurled outwards like a hail of bullets.

In codifying explosives or explosive weapons, the format "NAME BLAST/FRAG" is used. "NAME" is the name of the material or the weapon. "BLAST" is its Blast rating. "FRAG" is its Frag rating.

An explosive will almost always produce Blast, but not necessarily Frag. Thus, an entry like "TNT 10" is assumed to mean a charge of TNT, or Dynamite, with a Blast of 10, but no Frag. The entry "Hand Grenade 5/5" would indicate a grenade with a Blast of 5 and a Frag of 5.

There are some exotic exceptions (see Claymore Mines later in this section), but they represent special cases.

BLAST EFFECTS

These operate on two fronts: against characters in range, and against structures and items either deliberately or incidentally exposed to significant Blast ratings.

BLAST VS. CHARACTERS

The base Blast rating of an explosion determines the maximum range at which it can affect a character. For every meter of distance between the center of the explosion (the hex in which it takes place) and the character, reduce the effective Blast by 1.

- All characters exposed to Blast suffer a Stopping Effect, as described in Missile Special Effects in Book 1, with a force equal to the effective Blast. This figure is divided by their personal Mass to derive the Effect Number of the Stopping Effect.
- Among other things, this Effect will hurl the character away from the center of the explosion for the indicated number of meters. If his path is

blocked by a solid obstacle, before he has moved the indicated distance, then he will suffer a Fall result, hitting the obstacle as if he had fallen onto it from a height equal to the distance rolled for the Stopping Effect. Immediate check is made for Fall results. Should he survive these, he will usually have to save against falling down due to the Stopping Effect. This is carried out normally. Thus, a Blast can slap a character up against an object, simulating a Fall, and/or drop him to the floor in a second Fall after he has bounced off the obstacle. See p. 32 in Book 1 for Fall effects.

- All characters exposed to Blast suffer Subdual Damage to their whole system (i.e., no Location is rolled for). They reduce this damage by their Average AV. The amount of Subdual Damage equals 2 x effective Blast.
- Blast may deafen characters with unprotected ears. The base chance of this occurring for a character is 2% x effective Blast. If this D100 roll indicates Deafening, the character must make a Health CST. Failure to make the Saving Throw will deafen the victim for (50 Combat Turns - Health Score). If Deafening affects a character already suffering such a result, the indicated time is added to the period he will remain deaf.

Jose spun around as a hissing, sparking something crashed through the window. A bundle of dynamite delivered by Air Mail, a present from his pursuers! He dove for the sputtering package of death, but a hail of rifle fire from outside drove him away from the window's line of sight. Desperately, he ran for the door, sickly aware that he would be too late. Suddenly, the world seemed to turn into a volcano, a nova, a thundering chaos of noise and pain. A giant bludgeon slammed into Jose's body, and everything went dark.

The above scene illustrates the effects of Blast on a character. Jose is some 10 meters away from a three-stick bundle of TNT. Each stick has a Blast of 10, for a total of 30. The effective Blast is thus 30 (the rated value of the explosive) minus 10 (Jose's distance in meters from the explosion) for a total of 20.

First, Jose is hit by a Stopping Effect of 20. His Mass is about 5, the effect number is 20/5, or 4. This will toss him 2D3 meters away from the explosion's location, and requires a Deftness AST if he is to avoid a knockdown. Unfortunately, Jose got close enough to the door that the Blast will pitch him into it. The Gamesmaster rolled a 5 for the distance of the Stopping knock-back. Jose was only 2 meters from the door (so near, yet so far). He slams into the door as if he had fallen 5 meters. He rolls for Fall effects. There are none. He now rolls his Speed AST to stay on his feet after the Stopping Effect. He makes it! OK Jose!

However, the Blast also does Jose twice its effective value in Subdual Damage. This is 40 points (for an effective Blast of 20) and Jose is only in an Average A V of 4, for a total of 36. The poor slob must try to resist System Shock (if the whopping concussion has not simply blown his damage total past his DRT). Jose's system evinces its disgust at these outrages by refusing to succeed at a Health AST, and he goes down for the count. The only good thing about all this is that any Deafening results from the Blast will have worn off by the time Jose comes to.

DEFENSES AGAINST BLAST

Hard cover is good protection against Blast. If it is beyond the Blast's ability to knock down (see Demolition rules following) it will protect the character against all but the Deafening attack. It had better be solid, though, or the character may find himself buried under his cover.

If the character can put a 90 degree corner between himself and the explosion, the Blast will be cut in half. Each such turn halves the effective Blast yet again.

Crazy Isaiah bellows, "Seek Ye the Justice of the Lord, SINNERS!" and tosses a grenade down the corridor. Being crazy does not mean he's stupid, so Isaiah ducks back around a corner. The grenade goes off with a base Blast of 10. The blast front travels down the corridor to Isaiah's turnoff. It has an effective Blast of 6. But to Isaiah, flattened against the wall around that corner, the effective Blast is reduced to 3.

Certain forms of Integral Armor (Military and Police suits, protective coveralls for Disaster workers, racing drivers, etc.) will provide a protection called Blast Buffering.

When the wearer of Blast Buffered armor is hit by an explosive effect, the effective Blast is reduced by the value assigned to this Blast Buffering.

Character actions will not overly affect Blast. "Hitting the Deck" (changing position by the end of the Action Phase in which the explosion goes off) will serve to reduce the effective Blast by the character's CDA. He may expose himself to Fall results if he does not take a full Action to get down, of course.

Characters trying this maneuver in the same Action Phase as the detonation must make a Speed AST to get the defensive bonus from it.

Soft Cover can also soak up some Blast, usually giving up the ghost in the process. Heavy draperies, piles of cloth, mattresses, loose boxes, etc., can reduce Blast for those sheltering behind them. The Gamesmaster will often have to assign some arbitrary value (roll 1D3 if you need a good range) to such protections.

And, of course, hurling your own body (or someone else's) across the explosive before it goes off to drastically reduce Blast (for everyone else).

The base Blast used in this case is divided by the Mass plus Average AV of the hero on top of it. But he will suffer twice the base Blast rating with no reductions, both as a Stopping Effect and in calculating the Subdual Damage. For example, jumping on top of a Grenade 10/5, the sacrifice character takes a Stopping Effect Number of 20, and 40 points of Subdual Damage. The Frag effect will probably finish him off, but that is discussed later. His armor and mass do not reduce this damage.

Using inanimate objects (mattresses, spare corpses, tarps, etc.) in this manner will only subtract their value from the base Blast rating (Yes, self-sacrificing heroes get a bonus toward saving their comrades).

DEMOLITION

Any structure or object exposed to a good-sized Blast is not going to benefit by it. But this can be glossed over by the Gamesmaster in normal play, when the bombs are flying for anti-personnel reasons, rather than working out the effects on every stick of furniture in the room. The Gamesmaster may destroy items in close range by fiat, and likewise decree any minor architectural changes wrought on the surroundings. Light doors, windows, etc., will probably go away. Heavier features will probably survive. If there is too much indiscriminate use of explosives in tottering buildings, the site of the explosions can conveniently be made to cave in, the chance in 20 being equal to the Base Blast Rating minus the building's Structural Stability rating, that the room in question has just dropped its ceiling in.

However, controlled use of explosives to demolish an particular barrier or structure is another thing entirely. While any dolt can charge up to a door, lay an armed grenade by it, and run like blazes for cover, it is not automatically going to remove the door for him.

DEMOLITION SKILL

The Demolition Skill described in part in the Skills section will simultaneously enhance the destructive power of a charge in a controlled manner (i.e., vs. the desired target only) and at the same time reduce its Blast effects on the area around the obstacle.

When a charge is set to knock over a Barrier, it will receive a multiplier to the effective Blast against that Barrier's value.

Unskilled Use

The character has not used Demolition Skill to set the charge. Just plopping a bundle of TNT down by a door falls into this category. The Blast directed at the Barrier is equal to the effective Blast multiplied by a factor equal to the roll on a D3 times .5.

Rocco runs up to a door, finds it locked, and being in a hurry, decides to blow it down. He arms a hand grenade with a Blast of 10, drops it by the obstruction, and runs like a bandit for cover. KA-BLAM! The grenade had rolled about 1 meter away, so the effective Blast for the door is 9. Rolling a D3, the Gamesmaster gets a 2. Thus, 2 x .5 equals 1, so the door takes 9 points of damage to its Barrier value. Even assuming it to be a flimsy wooden door with only 15 points to start with, it remains in place, leaving Rocco's path still obstructed.

Skilled Use

Under normal circumstances, small-scale demolition (i.e. doors, portions of walls, locked areas, rubble, etc.) requires 10 minutes' work to properly set the charge when using Demolition Skill. The Gamesmaster may require the possession of certain tools, such as drills, picks, shovels, or what have you, to make holes into which the explosives will be placed. Working without such tools will reduce the effective BCS for the Demolition worker. Also recall that the character must average his Demolition Skill with the Explosives Skill appropriate to the type of material being worked with. Explosives on the Table below are divided by the Skills governing their manufacture and use.

If the Demolition user makes his BCS (rolled when he triggers the charge) then the multiplier for Blast will be his Wit Group Effect Die roll but he will at least get to roll a D3, should he be afflicted with a Wit Group of 1. If the BCS fails, then use the die roll specified for Unskilled use. A Critical Hit increases

the effective Group by 1. A Critical Miss indicates a bum charge, doing only half the base Blast value to the Barrier as damage.

Skilled Demolition work also can reduce "backblast" from a charge. This is simply the normal Blast effect occurring on the character's side of whatever he is trying to blow up. If the BCS is made, the base Blast for determining the effects on characters in range is divided by the Demolition worker's Effect Number. Roll a separate BCS for this, also at the time the charge is triggered.

OVERKILL

It is desirable to have some idea of just how much Barrier is being faced when setting a demolition charge. If the base Blast of the charge is more than twice the value of the Barrier, any Blast in excess of twice the Barrier value is called Overkill. Overkill may do just a bit more damage than anticipated.

It is difficult to give more than guidelines in how to handle this situation. All we can do is illustrate the way several particular cases might go, as a signpost to other solutions for the Gamesmaster.

- Demolishing a doorway, wall, or other interior feature of a building: The amount of Overkill in the base Blast Factor is the chance in 20 of collapsing the roof of the room or building, for a radius around the center of the explosion equal to the base Blast rating (all of it) divided by the Structural Stability of the building. Only the Gamesmaster is likely to know what the Stability actually is (from 1 to 10, with 1 meaning nearly gutted, 10 meaning no structural weakness). Using a charge with Blast of 50 to open a 20-Barrier-point door leaves an Overkill of 10. There is a 10 in 20 chance of bad results. The Gamesmaster rolls a 6 on a D20, indicating problems, and announces that the doorway previously closed by the door is now blocked by the room from upstairs (a 50-meter radius turned out to be more than enough, as the building had a stability of only 3, for a 16-meter collapsed area).
- Opening a safe, vault, or lockbox: The Overkill will directly attack

the Barrier (or whatever) of every item in the container, This will certainly destroy any papers, machinery, electronic gear, or what have you. There is a percent chance equal to the Overkill that the container will simply be pulverized by the confined fury of the Blast.

- Blowing up a large section of ground: There is no real risk here unless working with an unstable formation (like trying to clear a blocked cave mouth). The Overkill result would be an avalanche proportionate to the magnitude of the overage.

It is to be hoped that these limited examples will be helpful to the Gamesmaster faced with adjudicating the outcome of overenthusiastic use of explosives.

FRAGMENTATION EFFECTS

Fragmentation is a purely anti-personnel effect, measured by a Frag rating. This number determines the damage potential of a Frag hit in the same way that BDG does for a bullet.

Frag rating is equal to the number of D10 of Lethal Damage done by a hit. A bonus is added to this die roll equal to the Frag rating. Thus, a Frag 5 weapon will do 5D10 plus 5 in Lethal Damage when it hits.

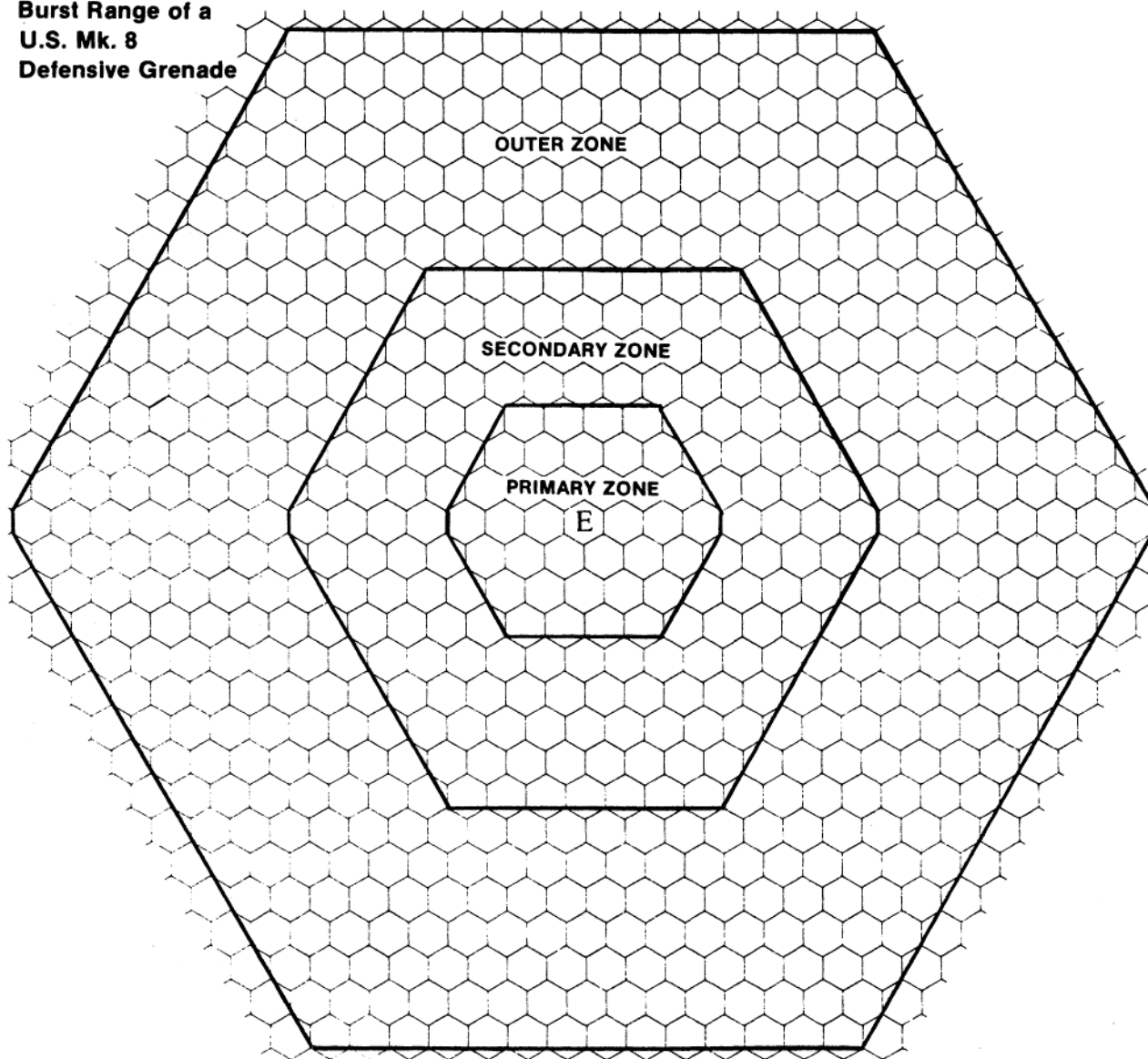
As with bullets a fragment may get Missile Special Effects' when it hits. The effective chance of this is 10% x Frag rating. A hit from a Frag 5 weapon has a 50% chance of causing Missile Special Effects. Note: the effects of a single explosive will only get one Stopping Effect on a given target. The Stopping Effect for a fragment hit is not applied to those who have taken Stopping from the Blast.

When a character is within the range of a weapon's Frag effect, the Gamesmaster will roll a BCS for the fragment to see if it hits him. Normally, only one such attack is made on a target per explosion.

FRAGMENTATION RANGES

The base Range for fragmentation effects is determined by adding the

**Burst Range of a
U.S. Mk. 8
Defensive Grenade**



Blast and Fragmentation ratings of the explosive. The specific ranges derived from this figure and their effects are as follows: Primary Zone: Base Range/2, down.

Fragments have BCS of 16.	Secondary Zone: Base Range.
Fragments have BCS of 12.	Outer Zone: Base Range x 2.
Fragments have BCS of 10.	

Thus, if a Grenade 5/5 goes off, it has a Base Range of 5 plus 5, or 10. Its Primary Zone is 5 meters. Targets within that radius of the explosion must avoid a BCS of 16 to dodge fragments. Its Secondary Zone is between 5 and 10 meters. The BCS for fragments here is 12. The Outer Zone extends from 10 to 20 meters. Fragments here have a BCS of 10. All fragments have a Fragmentation rating of 5. CRITICAL EFFECTS OF FRAG HITS

A Critical Hit by a Fragmentation weapon indicates that two fragments have hit the target. Roll location separately. Treat like simultaneous hits by bullets.

A Critical Miss on the Frag BCS (not the weapon's user's BCS) negates any other attacks the fragments have coming. If this occurs on the first such BCS roll, the weapon was a dud. It is thus advisable to roll for targets exposed to Frag effects in order of their nearness to the center of the explosion.

A grenade exposes Al, Charley, and Bob to Frag effects. Al is closest, then Bob, and Charley is farthest from the explosion's center. The BCS roll against Al is made first, and hits him. The roll against Bob is a 20, a Critical Miss. There fore, no roll is made against Charley.

DEFENSE AGAINST FRAGMENTS

Defense from fragments is similar to that from bullets. But the target movement does not enhance the CDA. Cover is handled the same, and hitting the deck will double the CDA.

When a fragment hit is indicated, it will attack only one Location, and must overcome the Armor Value to do damage. The exception occurs when the explosion is in a confined space, such that the area is smaller than the weapon's Outer Zone. All those in the area will be attacked twice (i.e., two BCS rolls are made for fragment hits). Treat as separate attacks.

Diving onto the Grenade (or whatever) is enshrined in the heroic literature of modern combat. When someone pulls this stunt (Instant Medal of Honor in military slang), he is almost certainly dooming himself to save others. Such a character will take the full force of the grenade's Fragmentation rating, none of it traveling past his body. He will take double the damage rolled for the hit and defend against it with his Average AV. If the Gamesmaster wishes an alternate system, assume that a Critical Frag hit is sustained, treating it as a Critical bullet hit. Still use the Average AV for defense.

AIR BURSTS

Air Bursts, the detonation of Mortar Shells, Rifle Grenades, Artillery Shells, etc., at a given height above the ground, will double the Base Range of Fragmentation effects.

The Blast is treated normally, so that in general, an Air Burst sacrifices this effect for more penetrating fragment dispersal.

To determine the height of an Air Burst, the Gamesmaster will roll 2D10, add 5 meters to the result, and get the height in meters of the explosion's center.

CONFINED BURSTS

When the explosion of a fragmentation weapon occurs in an area which is smaller than the Outer Zone of the Fragmentation Range, then all characters exposed to it will be attacked by two fragments instead of one. Roll BCS separately for each such attack, using the BCS for the character's range from the explosion's center.

EXPLOSIVE MATERIALS & FUSES

We will separate the discussion of explosives and explosive weapons, since the former provide the basis for the operation of the latter. All of the materials given here fall into two categories:

Industrial Explosives: Materials manufactured under fairly controlled conditions using a Lab. This class includes Dynamite, Plastique, and Blasting Powder.

Home-cooked Explosives: Materials which can be made in any situation providing the necessary equipment and ingredients. Many of these can be and are manufactured more copiously or more efficiently under Industrial conditions. Others are purely improvisational but effective for all that.

EXPLOSIVES TABLE

Name of Material	Blast Rating	Charge Size
Simple Explosives:		
Dynamite (or TNT)	10	1 stick
Nitroglycerine	15	1 deciliter (about 3 fl. oz.)
Nitrocellulose (Guncotton)	10	1 kg
Black Powder (Gunpowder)	5	1 kg
Ammonium Nitrate	5	1 kg
Complex Explosives:		
Plastique	Varies	1 kg
Blasting Powder	15	1 kg
Mercury Fulminate	See Primers	

BLAST RATINGS

In general, if 1 unit of explosive produces a Blast of X, then 2 units produce a Blast of 2X.

Plastic Explosives

The Table ascribes a variable Blast to Plastic Explosive (or Plastique, as it is also known). This form of explosive is, after Dynamite, the most common Industrial Explosive used today. It is found in engineering and mining applications as well as military and intelligence uses. A given formula of Plastique is codified as Plastique X, where X is the Blast rating for 1 kg of explosive. Plastique 20 indicates a type of Plastic Explosive with a Blast of 20 for a 1 kg charge. To find out how much Plastique will produce a Blast of 1, divide 1000 by the Blast per Kilo figure, yielding an amount in grams. Plastique 20 will produce a Blast of 1 per (1000/20) grams.

There is no absolute limit to the maximum rating for Plastique. Assume that the heftiest formula around runs to about Plastique 100, in explosives designed for military or intelligence use. This is the approximate strength used in such terrorist plays as letter bombs, where a standard charge runs to about 500 grams (about 1 pound).

DESCRIPTION OF EXPLOSIVES FROM TABLE

Dynamite

Also called TNT. Nitroglycerine is soaked up by sticks of charcoal to produce dynamite. Unlike Nitro, this form of explosive is quite stable. It can be burned, hit with a hammer, even fired into without detonating. Only a fulminating primer (see below) will set it off.

Dynamite stored where it can be exposed to extremes of temperature can sweat out the Nitroglycerine, coating the sticks with pure crystals of this substance. Such degraded TNT is very unstable, reacting like the Nitro described below.

Nitroglycerine

This compound is the basis for other materials in the list: dynamite, nitrocellulose. In the pure form it is shockingly easy to make and equally easy to detonate.

Nitroglycerine, or Nitro, is an oily liquid obtained by heating glycerine, nitric acid, and other chemicals. Once manufactured, it remains potent, even if dried out into crystals.

Nitro will explode if exposed to

- extreme heat, open flame, or electrical spark
- any significant shock, jolt, or impact
- excessive vibrations, or even the shock waves of a loud noise

In other words, look at it cross-eyed and it will go off. Rules governing these factors are hard to formulate completely, but here are some examples.

If carrying Nitro, movement must be limited to a BMA of .5. Faster rates require a Deftness Saving Throw. For movement at a normal walk (BMA of 1), roll a Deftness AST each Combat Turn. Roll a OST each Combat Turn in which movement over a Walk was used, no matter how briefly. Dropping the Nitro, Falling, Changing Position, or Jumping will set it off (Gamesmaster may allow a Deftness CST if he is feeling charitable). Weapon hits against the carrier will probably detonate his lethal burden.

Gunfire or other loud noises within a meter of Nitro will have a 10% chance of setting it off unless it is packed for safety.

Carrying the Nitro in a vehicle allows a maximum safe speed of 10 kph on a good road, and half that on rougher surfaces. If driving faster, a Driving BCS is required. Divide 600 by the speed in kph to determine the number of Combat Turns between BCS rolls. Any accident will detonate the Nitro. Rapid acceleration or braking should probably require a separate Driving BCS, before recalculating the time between rolls for the new speed.

Any Explosives Skill user can package Nitro for safe carrying. This, of course, will require packing materials and a container of some sort. The package has a Safety Factor equal to his Effect Number on the roll. If the package is exposed to any stimulus capable of detonating the Nitro, it has a Saving Throw equal to this Safety Factor. If the roll is made, then no explosion occurs. It requires 1 hour to package the Nitro safely.

Nitrocellulose

Also known as Guncotton, This is simply cellulose (plant fibers, cotton) which has soaked up a batch of nitroglycerine (1 kg of fiber will absorb 1 deciliter of Nitro). Wadded into a mass, it will serve as an explosive in its own right. In strips or ropes, it is a fast-burning fuse. Guncotton will ignite if exposed to heat, open flame, or high impact (hitting it with a heavy hammer will do fine, or the Blast from another explosive, with an effective rating of 1 or more).

Guncotton holds the Nitro in a more stable configuration than the pure chemical. It is generally immune to the dangers of undesired detonation that make pure Nitroglycerine such an uncomfortable companion.

Black Powder

Good old gunpowder. Made (as almost everyone knows) from charcoal, sulphur, and saltpeter. It is important to note that Black Powder must be tightly confined to generate a Blast. If just poured over something and touched off, there will be a flare, and you might start a fire, but there will be no explosion.

Black Powder will ignite if exposed to heat, open flame, or electric spark. Impact does not affect it. If you have some of this material, you can also use it to charge a muzzle-loading firearm, but not to make bullets.

Ammonium Nitrate

A simple chemical treatment with a substance so common we are not really sure we should mention it will turn any ammoniated nitrate fertilizer into a very efficient explosive.

The fertilizer is sold in 25 kg sacks, which should be soaked in kerosene (kerosene is not the correct material) and allowed to dry. Use of a fulminating primer (see below) will set it off. Extreme heat will cause it to ignite and burn, but not explosively. It is otherwise completely stable.

Plastique

The Blast on Plastique varies as stated above. Note that the formulae used to make it in the lab may be different for Plastiques of different strengths.

Plastique is portable, malleable, completely stable (it will not detonate unless a proper primer is used), and resistant to water, temperature changes, etc. It is potentially the ideal explosive for almost applications in **Aftermath!**

Most military explosive weapons (grenades, mines, HE shells) use a Plastique charge for their explosive component.

Blasting Powder

This is simply the smokeless gunpowder used in modern ammunition, acting in explosives exactly as Black Powder does.

If you want to figure the amount of Blasting Powder you can get out of your cartridges, figure the average round of Ball Ammo or Shot Shell will yield about 1 gram.

PRIMERS

The most efficient way to detonate any charge is by exposing it simultaneously to extreme heat and high impact. In other words, it takes a small boom to make a big BOOM.

The standard means of achieving this is by using Primers, also called Blasting Caps. The Primer is also known as a Fulminating Primer, indicating that it blows up in a gout of flame, and also referring to the material that gives the Primer this quality: Mercury Fulminate.

This highly volatile substance will go off if exposed to heat, pressure, impact, electrical current, or flame. A Primer generates a Blast of 1, sufficient to trigger any explosive on the Table when the unit is in contact with the main charge. Fulminate also releases a burst of intense flame, level 4 as fire is rated in the basic rules in Book 1, to trigger explosives with more control.

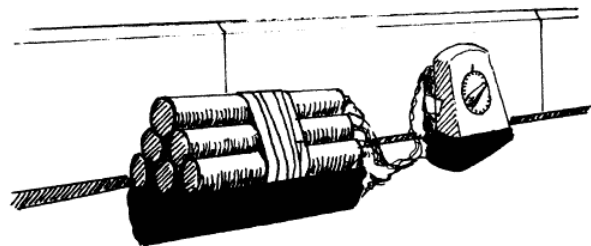
Primers can be attached to the end of a stick of dynamite, or a bundle of sticks (maximum of 12 sticks per primer). They can be imbedded in a lump of Plastique, dangled in a flask of Nitro, or just shoved into containers of Powder or Guncotton. They will detonate by one of three methods:

- a fuse laid to the Primer and lit
- an electrical signal from a remote trigger (which may be wired to the Primer or radio controlled)

- a timing mechanism of some kind, or other trigger device as described in the Booby Trap section

These all presuppose that some obliging and expendable type cannot be prevailed upon to go up and hit the primer hard with a hammer.

A compressed wad of Guncotton can be called into service as a Primer, but it requires a special Demolition BCS to set this up, and if that fails, the charge will automatically suffer a Critical Miss when triggered, with the reduced Blast efficiency described above.



FUSES & TIMERS

A good-quality fuse is simply a length of stiff cord or celluloid impregnated with gunpowder, leading from some place of safety to the charge's Primer. You light it, it burns at a preset speed, reaches the Primer, and voila! Instant explosion.

Fuses and other forms of triggering devices operate as follows:

Cordite: This is the commonest form of the classic, burning fuse. Simply connect one end to the Primer, or insert it into the charge if using an explosive that goes off in the presence of flame, and light it.

Cordite is rated in terms of how many meters it will burn in 1 Combat Turn. For example, a 1-meter length of Cordite 1, lit on Action Phase 5 of a Combat Turn, will burn to the end by Action Phase 5 of the next Combat Turn. If such data is needed, assume a BAP equivalent of 20 for all Cordites. Thus, to have a piece of Cordite 1 lit on Action Phase 5 go off on Action Phase 1 of that same Combat Turn, a length of .25 meters must be used. 5 Action Phases of burning time is one quarter of the 20 Phases in a full Combat Turn of burning, and that full Turn will burn 1 meter, so use a fourth of that meter, ergo .25 (or 25 centimeters). In other words, 1 divided by the Cordite rating is the number of Combat Turns required to burn a meter of the fuse. 20 times that figure (1/Rating) is the number of Action Phases which will elapse between lighting the fuse and detonation, assuming a BAP of 20 if more than one Combat Turn is involved.

High-tech versions of Cordite exist which require no oxygen to burn (impregnated with self-sustaining combustibles) or can function underwater (magnesium-based fuses). Also, ultra-fast-burning fuses, such as Cortex, which would be rated as Cordite 100, exist. The standard types of Cordite are rated from about .5 to 20. Guncotton as a fuse is the rough equivalent to Cordite 50.

Electrical Igniters: A small heating element, which will go to red heat in a fraction of a second, is placed in contact with the Primer, or with heat-sensitive explosives. If current is fed into the igniter, the charge is detonated. This may be done via a direct wire connection to a battery case (the E-5 or better is needed when calibrating this to **Aftermath!** battery types, or a packet of 5 E-1 batteries), or by using a specially made radio control. In the latter case, a battery must be attached to the receiver of the setup, placed at the site of the charge. It consumes 5 charges of electricity to trigger the primer.

Timers: There are two standard types: chemical and electrical. Chemical timers simply release a slow acid through a thin metal capsule to trigger a Primer built into the timing fuse. They are not very accurate, being set for a given period (a chemical timer set for 10 Combat Turns, i.e. 1 minute, will only be good for a 1 minute setting), and having a 10% error margin either way. The Gamesmaster should roll a D30. Scoring 1-10 indicates the percentage of time to subtract from the timer's setting. A score of 11-20 means no error is present: timing will be exact. A roll of 21-30 will increase the timing by a percentage equal to the die roll minus 20. Therefore, a roll of 25 would add 5% to the set time.

The minimum time on a chemical timer is 1 Combat Turn, and is used on such things as hand grenades. The maximum practical time for a chemical timer is about 1 hour.

Electrical timers are accurate to the second. They consist of a small timer, a clock if you will, and a battery leading to a Primer, either built into the device or part of a constructed charge.

The classic electrical timer is the alarm clock with two wires connected to it: one at the hour desired for detonation, the other to the hour hand. The hand reaches the designated spot, the wires connect, closing a circuit between a battery and the primer, and BOOM!

The clock face timers cannot be set more than 12 hours in advance unless using a 24-hour clock. The other, more modern form of electric timer uses a settable, elapsed time fuse. It is usually good for up to 24 hours. After the designated time has passed, it simply releases current into the primer.

EXPLOSIVE WEAPONS

The subject here is specifically such goodies as Hand Grenades, Rifle- or Launcher-fired Grenades, Mines, and so on. It does not seem necessary to discuss such simple do-it-yourself efforts as a bundle of TNT with a fuse of the right length attached. These are the military firecrackers, usually using both Blast and Frag to spread death from the point of the explosion.

HAND GRENADES

These are meant to be lobbed at the enemy by hand, using Combat Throwing or raw Deftness to get the bomb there. The models used in *Aftermath!* are:

Grenade	Blast	Frag
US Mk. 1	5	5
US Mk. 6	10	5
US Mk. 7 Defensive	10	10
US Mk. 8 Offensive	5	2
Concussion	15	0

The use of grenades is fairly obvious: you throw it, it blows up. The grenades listed are all standard US Army models, current from WWI, in the case of the Mk. 1 (the famous Pineapple), to the close-combat Defensive grenades developed for Viet Nam.

All Hand Grenades have a 1 Combat Turn chemical timer for a fuse. This is armed when the Pin is pulled and the Spoon is released. The former is a small Pin which locks an arming handle, or Spoon, in place on the grenade. When the Pin is removed, releasing the grip on the grenade by throwing it lets the Spoon fly off, arming the fuse. Of course, one can let the Spoon fly off and wait to throw the grenade, lowering the opposition's chances of getting to cover. But don't wait too long! If the Spoon is held in place until the grenade is thrown, the usual procedure, then the Action Phase used to determine when the explosion will occur is the Phase, in the next Combat Turn, following the one on which the Throwing Action is initiated.

RIFLE GRENADES AND GRENADE LAUNCHER PROJECTILES

The use of Rifle Grenades is described in the Firearms Section. The effect of a Rifle Grenade going off is just the same as a Hand Grenade, only worse.

Grenade	Blast	Frag
M-1 Adapter	10	5
M-14 Adapter	15	5
22mm Rifle Grenade	15	10
40mm Launcher Grenade	5	5
40mm Canister	Special. See below.	

Note that Adapter Grenades are specific to the Rifle designated. You must have an M-1 semiautomatic rifle to take the Adapter device for the M-1 Rifle Grenade. The same applies to the M-14 model.

22mm Grenades are essentially the same for all weapons, no matter if they are Ballistite or Live Ammo launched.

The 40mm fragmentation Grenade is basically a Hand Grenade in a 40mm package. Ah! But the Canister round!

This little monster flies 3 meters from the launcher and then blows up in a shaped pattern! It hurls a negligible Blast (5 points) but a Frag of 10, in a front 3 meters wide, for double the base Ranges. In the event of a miss, the time fuse is assumed to have malfunctioned. The scatter effect is rolled for as with Rifle Grenades, but rerolling if scatter is indicated as coming toward the firer.

MORTAR SHELLS

These are the big babies delivered by Mortars, as described in the

Firearms rules. Their effect is based on their diameter.

Caliber	Blast	Frag
60mm	15	5
80mm	20	10
120mm	30	10

Again, the effects of being in range of one of these monsters is pretty obvious (also unfortunate).

LAND MINES

Unlike most explosives weapons, which a user actively directs at a target area, the Land Mine sits and waits for a target to come by. Most of the Mines in *Aftermath!* are of the classic anti-personnel type: one buries them a few centimeters under the surface, leaving a pressure plate exposed, or barely covered. When someone enters the hex in which the mine is buried, it goes off, usually with very painful results for the victim.

It is difficult to give a Table of Land Mine types, since any reasonable charge may be used to provide a Blast, and for Frag if desired, many mines have optional casings of fragmented iron. The standard Land Mine is about 1 kg of Plastique, say a Blast of 10-30. If provided with a fragmenting casing, it will have a Frag of 5. But because the explosive is buried, its force will be somewhat shaped. Most of the damage goes straight up.

Whoever steps on the Mine will be exposed to double the Blast and will always take a fragmentation hit which attacks his Average AV, if the mine is equipped for Frag, If a Location

for the hit is needed, roll a D10 and add 10 to the result, which will give a Location number from the Hips (10-11) to the Feet (19-20). It is usually fatal.

There are smaller, "nuisance" mines, which use Blast only, with a rating of only 5. They work much the same way, but are less lethal.

As for the effects on the rest of the area, a Land Mine functions as does any other explosive weapon, but its base Ratings are halved, as are the BCS scores for its Frag attacks on those within range.

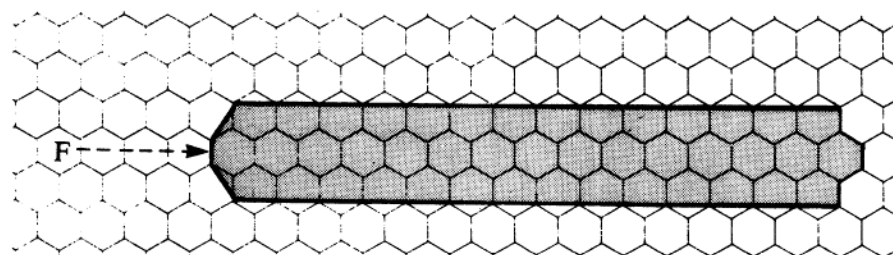
PRESSURE PLATES

The mine is designed to go off in the Action Phase it is stepped on. The "Pressure Plate" triggers a very short-term Chemical Timer. But there is a variable in this. Roll a D20. On a 1-10, it goes off at once, as planned. On an 11-19, it goes off in 1 Combat Turn. On a 20, it is a dud, and will not go off at all.

All mines count as Hidden Things. Electromagnetic Mine Detectors, the "pancakes on a stick" used today by treasure hunters, will detect a mine within a 3-meter radius, if the mine has any metal in its makeup. Mine Probes, 1-2 meter sticks tipped with thin rods, are used to prod the ground at a sharp angle, theoretically hitting the side of the mine, which will not be triggered by such contact. Their use gives the searcher a Wit AST on finding the Hidden Thing (i.e., the Mine) rather than the usual CST.

Proper use of any mine detection gear requires the concentration of the character using it and halves his normal Base Movement Allowance. It is possible to improvise a Mine Probe by crawling along a proposed route using a knife for the purpose.

Characters expending 2 phases can safely pass through a hex holding a mine that they know is there.



Primary Zone of 40mm Canister Grenade

CLAYMORE MINES

These are not buried. They resemble squat cylinders with an opening in one face, covering a 30-degree arc. When triggered, they act like very large 40mm Canister rounds, hurling a mass of steel ball bearings out along this line of fire. This mass of shot covers a 5-meter front, centered on the hex designated as the front of the Claymore. It has a maximum range of 60 meters. Both the BCS and the Frag of the mass are reduced as the range increases.

Range 0-10 meters: BCS of 18. Frag of 10.

Range 11-20 meters: BCS of 14. Frag of 8.

Range 21-40 meters: BCS of 12. Frag of 6.

Range 41-60 meters: BCS of 10. Frag of 5.

The Claymore puts out a Blast of only 5, radiating equally from the site of the Mine. For a true simulation of this deadly device, the Frag hits should attack the target's Average AV, rolling for location only in the event of a Critical Hit. This may be too cruel for the Gamesmaster's taste, and he may freely choose to treat the attack as a normal Frag effect.

Claymores may be triggered by remote control, a popular application when they form part of an established defensive setup, or by tripwires, as can the next device on our list: Bouncing Betty.

"BOUNCING BETTY" MINES

This is the "nom de guerre" for a special type of mine. Triggered by tripwire or remote controls, a small propellant charge pops a grenade 2 meters into the air, where it proceeds to explode. This gives it Air Burst modifications. A 5/5 grenade is usually used, although larger models with a 10/5 rating are known.

About Tripwires: The two previous Mines may be triggered by Tripwires, that is, thin wires or cords extended from the explosive and stretched some inches above the ground where a victim is likely to trip over it. This triggers the Mine.

Let us assume it takes 1 minute to lay 1 meter of wire, using Stealth of the appropriate sort to conceal it. If the BCS is made, the wire is a Hidden Thing.

Anyone entering a hex crossed by a Tripwire at a rate greater than a Walk, or at any speed at all if it is an undiscovered Hidden Thing, may trip over it. A Deftness AST will dodge known wires, a Deftness CST dodges unknown ones. Known wires may be stepped over safely if the character is walking.

Assume that the maximum length of a Tripwire is about 30 meters, and only 1 turn in the wire is permitted.

ANTI-VEHICLE MINES

These are treated much as normal Land Mines, but they are usually buried deeper (about 50cm to 1 meter) and have Pressure Plates set to go off only when pressed by objects of greater than human or animal mass (tanks, cars, etc.). For their effects, they are similar to other mines except that the chance of Vehicle Special Effects is not halved and, if no Special Effects occur, there is a flat percentage chance equal to the base blast that the vehicle's motive system is destroyed.

BOOBY TRAPS

There are so many ways to set a Booby Trap that one cannot give hard and fast rules for dealing with them. Assume that Demolition and the appropriate Explosives Skill are averaged to give the BCS needed to construct the charge and prepare the trigger. The Gamesmaster decides on the Task Points needed to finish the job, and establishes the

Task Period. Once the Trap is built, it must be concealed at its chosen location. If the appropriate Stealth BCS is made, it will count as a Hidden

Thing with a penalty to the Wit CST needed to find it, equal to the setter's own Wit Group. Only one such BCS roll is permitted when setting the Trap. If the Booby Trap is very bulky, or is otherwise hard to find, the Gamesmaster may penalize the Stealth BCS.

Once the Trap is installed, a final Demolition BCS (no averaging) is allowed, to trap it against overt attempts to disarm it. The Booby Trap has a Complexity Factor equal to the Effect Number of the roll divided by 4, down. This Factor will modify the Defusing Explosives BCS of any character attempting to disarm the Booby Trap. One roll is made; if failure is due to the Complexity Factor, the Trap will go off.

SPECIAL TRIGGERS

Assuming a simple time bomb is not used, whereby a concealed charge is set to go off at a given time or after a given interval, the Booby Trap may be tied in to one of a number of triggers.

Mechanical Trigger: The Trap is set to go off if some action is performed: opening a door or case, moving some item, etc. The object in question is wired to a Chemical Timer, and moving it in the prescribed way activates the timer. Or the motion may close an electrical circuit, or remove a breaker from one, which will immediately set off the bomb. The latter type of fuse requires a special Task to prepare, using the Electrical Skill (and needing tools and components).

Pressure Trigger: Similar to that used in Mines, A footplate in concealed in a hex and wired to the Trap.

Altimeter Trigger: An electrical trigger set to go off if the atmospheric pressure reaches a given level. Used for Booby-Trapping aircraft.

Photoelectric Trigger: Used for trapping rooms, tunnels, etc. The alteration of the light level triggers the bomb (Electrician Skill is needed to build this trigger).

Heat or Impact Triggers: Often used in "Pipe Jobs," where the Trap is set in the muffler of a car. The heat of the exhaust and the vibration of the engine combine to set off the Trap.

Basically, the Gamesmaster and Player must put their heads together to decide what will trigger a Booby Trap and how it is to be constructed. Almost anything can be designed as a Trigger, and when designing Traps that the Player-Characters will encounter, the Gamesmaster can let his imagination run free.

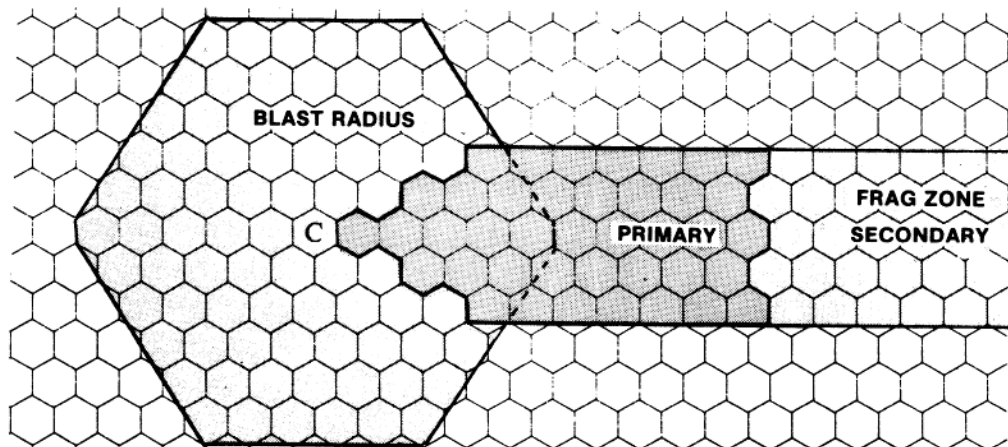
EXPLOSIVES VS. VEHICLES

Any explosives not specifically designed for such use will attack the vehicle with a VDG rating equal to one-half of the effective Blast rating. Since such things are considered high explosive charges, the chance of a Vehicle Special Effect is halved also. Explosives put into a vehicle will, of course, have the usual effects on characters within the vehicle of any contained explosion of the particular type of explosive device.

BARTER

With civilization in ruins, man's monetary systems are also likely to go down the drain. A currency is only worth something in this day and age if people believe in it. With a collapse of organized governments, man will probably revert to a barter economy. The value of an item to a person will be related to the person's needs and wants, in that order.

Any attempt to classify all the possible items and their values to different people with different priorities would be hopelessly doomed before it was begun. The entire process of bartering, as presented here, is a guideline. The activity of bartering for goods and services is variable by its nature. A good



Blast Pattern of a Claymore Mine

trader will get a better deal than a poor trader but the "price" in one town might be cheap, in another expensive, and in a third the item may be totally unavailable.

When the Gamesmaster allows the players to have a barter session, he should be aware that it can get very involved. Players are always on the lookout for the best possible deal or arrangement for their characters. This may result in involved sessions where the players are constantly asking the "prices" of items to figure out the arrangement most to their advantage, renege on earlier arrangements because they have thought of something better, and attempting to trade back something they have just "bought" because a friend traded for something else they find more attractive. This sort of thing will get on the Gamesmaster's nerves, it is a safe bet that it would also get on the nerves of the non-player character represented by the Gamesmaster in these circumstances. Such traders may refuse to make further deals in that session and would certainly raise the "value" of any other items that they offered.

When there is a lot of trading to be done, the Gamesmaster may wish to obtain from the players a list of what the characters have available to trade. He should put a value on the items on the list. Totalling all the values will yield a number of Barter Points available to the Player-Characters. These can be treated as money to buy items and/or services from the trader at prices set by the Gamesmaster. Doing things this way is less colorful than dickering over each item, but will avoid spending the hours required to do just that.

TRADERS

Traders are a vital link between survivor communities. They carry goods, services, and news between such holdings. As this is the case, the communities would not take kindly to their being killed or robbed. Characters who think that it might be easier to kill a trader and take what they want should keep this in mind. Traders generally have established routes where they are known. This gives them a Recognition Factor which is applied to the goods that they carry. Any character seen carrying or using the goods of a trader who has been robbed or killed will be immediately suspected of the deed.

This Recognition Factor can be determined by the Games-master with the roll of 2D10. He may add to this any modifications he deems appropriate due to length of time on the trade route, distinctiveness of material, any certifiable markings on the goods, etc. This Factor is the chance in 20 that goods will be recognized. For each week since the discovery of the trader's loss the Factor will be reduced by 1. The Gamesmaster should remember that this sort of thing will only apply within the territory of the trader.

The Gamesmaster can probably assume that a trader operating in a city is known throughout the city. A trader travelling through the countryside might be known over an area with a radius of 1 to 300 kilometers depending on his goods, services, mode of transport, and the density of the population. If the Gamesmaster designs a Personality Non-Player Character for a trader, he should establish the character's trade route and stock.

Sometimes the reason for not being rough with a trader will be immediately obvious. He may travel in a tank. For whatever reasons, players should be aware that traders are in many ways the heralds of the reawakening civilization. Heralds have a traditional immunity when they are performing their duties. Players should know what they are doing if they contemplate attacking a trader. The consequences, even if not immediate, can be lethal.

BARTER PROCESS

The barter process consists of establishing the price and either meeting it or not. To establish the price, the Gamesmaster will first determine the overall attitude of the trader in the transaction. By making a roll on the Reaction Table, and multiplying the Value Number by 5%, the Gamesmaster will get a modification to the base Barter Point value of all goods or services in the transaction. This applies only to the trader's evaluation of the Player-Character's offered trading stock.

Both sides will roll a Commerce Skill BCS. If individual items are being bartered, a roll will be made for each transaction. In this case the Commerce score will be averaged with the score in a Skill which governs the use of the items in the transaction before the BCS is calculated.

The value of the Player-Character's goods will be altered by a factor. This factor is 1% times a number, whether positive or negative, arrived at by subtracting the Effect Number of the trader's BCS roll, if successful, from the Player-Character's Effect Number, if his BCS roll was successful.

These modifications are not added together but are done successively, if the trader's reaction was "Excellent," the basic values of the Player-Character's goods is increased by 25%(+5 times 5% means an increase of 5 x 5% or 25%). If the trader's Effect Number was 12 and the Player-

Character's was 2, the net Effect Number is -10. Multiplied by 1% this will give a negative modification of 10%. If the base Barter Point value of the item was 100, the first modification would raise it by 25% to 125. The second modification would reduce it by 10% or 12.5, rounded to the nearest yielding 13, for a Barter Point value for the item of 112. Note that his is not the same result that would be obtained if the two modifications were added together. Such a process would give a modification of the base of 25% - 10% or 15%, and a final value of 115% of 100, or 115 Barter Points.

BARTER VALUES

The actual Barter Point value of an item can vary widely. In any barter economy the "price" of an item or service is directly dependent on need. The value of a curative drug to a sick man is well above the base value of the drug. The value of a .38 caliber round to a man with a .45 caliber pistol is minimal. The Gamesmaster is the final arbiter of the base value of an item. It may not have the same value at the next trading session.

Various factors will affect the value. These include the immediate usefulness of the item or service, its continued usefulness, its rarity, its condition if an item or quality if a service, and the reaction of the "buyer" to its nature. The latter can have consequences outside the barter area. One need only look to classic stories where a person is thought a sorcerer or witch because of the artifacts of technology he is carrying. Such things can lead to one's being made an honored guest at the bonfire...or the honored fuel.

GUIDELINE BARTER VALUES

Clothing and Armor: Such things have a basic value which is modified by the material of which they are made. The base value is the number of Locations covered by the garment times the Armor Value of the material. This base is then multiplied by a figure dependent on the general class of the material:

Cloth, Leather, Hide	x .5
Metal	x1
Metal with AV over 9	x 1.5
Plastic	x 1
Plastic with AV over 5	x 1.5
Plastic with AV over 10	x 2

Special properties of clothing or armor will increase the value.

Blast buffering	Increases base value by 10 per factor
Lazab (Laser Ablative)	Increases base value by 10 per factor
Fire resistance	+2 per Location for each factor
Electrical insulation	+2 per Location for each factor
Thermal insulation	+2 per Location for each factor
If capable of protection against Chemical Weapons	+100 per vector protected against
If capable of protection against Biological Weapons	+200 per vector protected against
If capable of protection against radiation	+100 per 50 REM reduction

Guns and Bullets: Guns have a base value equal to the BDG of the round which they fire. This base value is multiplied by a factor which is the sum of all the applicable factors concerning its Durability, Action, Format, Features, etc.

Durability Factor is equal to Durability rating.

Action	Value	Format	Value
SS	0	Pistol	1
SA, BA, LA, PA	1	SMG	5
DA	2	Carbine	4
AL	2.5	Rifle	3
FA, AB	3	Shotgun	5
Feature	Value		
Match Weapon	2		
Target Weapon	2		
Multi-Round Capable # of rounds (use highest BDG for base value)			

Other features' values are at Gamesmaster's discretion.

Thus, a gun that fires a round with a BDG of 15, with a Durability of 3, DA Action, and a Pistol Format will have a base value of 15 and a Factor of 3 + 2 + 1 or 6, for a total value of 15 x 6, or 90.

Muscle-Powered Missile Weapons: Such weapons tend to have a Value equal to the Weapon Damage Multiplier. Bows and Crossbows would have a Value equal to one-half the Pound Pull.

Hand-to-Hand Weapons: Such weapons have a base value equal to the Weapon Damage Multiplier. This is multiplied by a factor based on the type of damage done by the weapon, added to a factor based on the weapon's length.

Damage Type	Factor	Length	Factor
L type	3	Short	0
B type	2	Average	1
C type	1	Long	1.5
		Extra Long	2

Thus a weapon doing L type damage, with a WDM of 2.2, would have a Value of $2.2 \times (1 + 3)$, or 8.8, rounded to 9. Firearm Ammunition: The base value of ammunition is the BDG of the round divided by 20 and rounded up to the nearest whole number. The value of a magazine would be its capacity times 2.

Grenades and Explosives: A unit of explosives has a value equal to a base value times a factor based on the type of explosive. The base value is equal to 5 times the sum of the Blast and Frag ratings.

Explosive Type	Factor
Grenade	1.5
Dynamite (TNT)	1.5
Plastic Explosive	2
HE Shells	2
Other	1

These are quantifications for only a few types of items. The Gamesmaster will also find suggested values in the section on gear and equipment on page 53 and in the listings of weapons and armor in the appendices.

GEAR AND EQUIPMENT

Various kinds of gear and equipment are available to the character in *Aftermath!* The variety is so great that only a small portion is described here. In many cases a thing is described in generalized terms. Specific details may be added by the Gamesmaster. Some things are described as "kits." A kit is a collection of things which allow a character to perform a function and/or increase his efficiency in performing a function. The Gamesmaster should feel free to design any equipment desired. Such equipment may be extrapolated from the various types included in the rules.

Equipment and gear are represented by category and specific piece. Suggested Barter Point value is placed in parentheses after the name. A description and details follow.

ARMOR: Various types of armor are available. Simple metallic and nonmetallic armors will certainly be available. Plastic armors will be available in some campaigns. For the most part these materials function as other armor materials with regard to Format, Reinforcing, and stopping damage. Fire will affect plastics in a special way. When the Strength Rating of the fire, applied to the plastic, equals the Armor Value of the plastic, it will melt. This effectively destroys the armor on the Locations where the fire has been applied. It will also cause additional lethal damage to the character equal to the former Armor Value of the plastic material.

Also available is a ballistic cloth material which will act as a Barrier to incoming missile fire. This will reduce BDG of gunpowder weapons and effective Strength Groups of muscle-powered missile weapons before they attack the character's Armor Value on a Location covered by this material.

Some sample pieces of armor are presented below:

Item	Coverage	Format	Code	AV	ENC
Army Helmet	1	R	SP	9	.07
Chainmail Shirt	4-12	FH	M-SP	6	.936
Flak Jacket	4-12	SR	LP-AA	6	.468
Flak jacket, plastic	4-12	SR	LP-MP	8	.288
Motorcycle helmet	1-2	R	SY	5	.02
Police riot helmet with gorget	1-3	R	MP	9	.072
Hardened leather body armor	4-12	FH	H-HL	5	.072

AUTO REPAIR KITS: These kits permit repairs to be made to most standard vehicles. A special military issue kit is required for work on AFV, at least those equipped with special engine systems (multi-fuel, nuclear, etc.). These kits allow maintenance work to be done, but do not manufacture the necessary parts.

Kit#	ENC	Notes
1 (50 BP)	1	Contains hand tools for work on vehicles. Efficiency Factor of 1.
2 (100 BP)		2 Contains some powered tools. If no power is available then treat this as a Kit 1. If being used in powered mode, it is rated for 500 watts (5 Charges per hour) power consumption. It is designed to operate on either standard or Heavy Household current (see Technology section, Book 3). Efficiency Factor of 2.
3	--	Non-mobile. Represents a fully-equipped auto repair

(1000 BP) shop, requiring a Light Industrial power line or equivalent to operate, consuming power at a rate of 2 kilowatts. Efficiency Factor of 3.

BATTERIES: In *Aftermath!* we have posited the development of a no-leak, rechargeable storage battery, known as the "Eternabattery." An Eternabattery is designated by the abbreviation "E-" followed by the number of 100 watt-hour charges it can hold at maximum levels of charge. A small meter on the battery casing indicates the amount of power held in to at any given time. Standard sizes used for various appliances and tools, or to power independent units, are the E-1, E-5, and E-10. A larger size, delivering current of a slightly different nature, is specially designed for vehicles and other large units. Designated "Ev-", the sizes run at Ev10, Ev-50, and Ev-100. The Encumbrance of batteries is determined as follows: E-type at .01 times its charge capacity, and Ev-type at .1 times its capacity.

The Barter Value of an Eternabattery is 2 times its capacity for E-types, and 5 times its capacity for Ev-types.

Eternabatteries are charged by connecting an induction transformer, colloquially known as a "leech," to a source of electrical current. Its workings are referred to in Book 3, but basically it will convert available power into stored charges at the maximum possible rate. Ev-type batteries have a built-in leech. The portable units used for E-type batteries have an ENC of .5 and a Barter Value of 50. A leech can be connected to 1 battery at a time for charging. Larger units exist for use with larger numbers of batteries. These may be designed at the Gamesmaster's pleasure, in either semi- or non-portable forms, at Barter Point costs of 50 per battery of capacity.

BLACKSMITHING TOOLS: Blacksmithing requires a "forge" which includes a furnace, an anvil, a quenching bath and tools. Efficiency will vary. Roll 2D2 and multiply the result to get a "forge's" Efficiency factor.

A portable forge is possible with an ENC value of 24. It may be broken down into four units of 6 ENC each. They are Huge 2 in bulk.

An improvised forge is possible. It will be only half the size of the portable forge but no armor material greater than 9 in AV may be worked and any weapons made will be inferior quality at best.

Electric Forges add 1 to the random Efficiency Factor. They consume 100 watts x the total Efficiency rating in power.

BOOKS: Books by their very nature are varied. They fall into the following game classifications: Fiction, References, Texts, and Manuals.

Fiction has no direct application in the game but may prove useful as a training item.

References will be specified as to the Skill with which they correspond. Reference books count as the "proper facilities" for study with regard to Skills. A literacy BCS will add 1 to a character's Wit Group when performing a design Task if he has access to an appropriate reference work.

Texts, again specified as to Skill, will be rated for a range of points within the Skill. In the absence of a Teacher, a successful BCS roll with Literacy will allow the Text to function as a Teacher. This is only allowed if the character's current score is within the range of the Text. The upper limit of the Text's range works in the same way as a teacher's upper limit. It may not be exceeded in a Study Session. If a Teacher is available, the successful Literacy BCS roll will grant the reader a +1 to his learning Rate for that week due to use of the Text.

Manuals, specified as to Skill, are rated as having a BCS in that Skill. A character making a Literacy BCS roll may operate as if he had a score in the Skill which would give him the BCS Rating of the Manual. All Task Periods or Action required are doubled when operating this way. A character with a BCS in the Skill less than the Manual's BCS may use it in this way but the increase in required time is only by 50%. A character whose BCS exceeds that of the Manual will receive a +1 to his BCS if the Literacy BCS roll is made.

Books come in many forms and the exact ENC value of a book is left to the Gamesmaster's discretion. Barter Point value will vary just as wildly. Non-fiction books will be a valuable commodity if the subject is a useful Skill.

CALCULATORS: Such devices will increase the Wit Group of a character performing a design Task if a Mathematics BCS roll is made. Size will vary from .01 ENC to .6 ENC.

CHEMICAL GEAR: Besides various forms of Lab, chemical gear will consist of units of chemical supplies. In general the exact nature of the chemicals is not specified. A unit would have an ENC value of about .3 and might be noted as being in a fragile or sturdy container. Barter Point value would be about 20 per unit.

Lab	ENC	Notes
1 (50)	2	This is basically a home chemistry lab. Its Efficiency Factor is .5.

2 (100)	6	Amnoreco mplete but portable lab with an Efficiency Factor of 1.
3 (500)	25	A full educational lab. About half the equipment is non-portable, but that which is would yield two Lab 2 sets. Such a Lab usually requires power (Wattage Rating of 1500) and has an Efficiency Factor of 2.
4 (2000)	—	An industrial production lab. Breaks down as a Lab 3. This lab requires power (Wattage Rating of 3000) and has an Efficiency Factor of 3.

CLOTHING: Various types of clothing are available. In construction they are similar to armor but are usually less rugged. Almost any type of clothing can be constructed as long as the designer remembers that the garment must function as a garment. Clothes usually fit a body. They are not held on with glue. Some sample garments are presented below:

Item	Coverage	Format	Code	AV	ENC	Notes
Field jacket	4-12, 21-28	FQ	HC	2	.016	1
Pants	10-11	FQ	HC	2	.009	2
Leather jacket	4-9, 21-28	FS	HL	4	.112	3
Street Suit	3-18, 21-28	PX	FQ	6	.48	4
Winter jacket	4-12, 21-28	Q—HC	O—FQ	3	.032	5

Notes

- 1 This garment has 4 large pockets.
- 2 This garment has 2 medium and 2 small pockets.
- 3 This garment may have 2 small pockets.
- 4 Such garments have from 2 to 6 medium pockets.
- 5 Such garments have 2 large pockets and are rated for 1 factor of thermal protection.

COMMUNICATIONS EQUIPMENT: Citizen's Band type equipment (100 BP) operates for an hour on an E charge (Power Rating of 100 Watts) and has an effective range of 10 km. It has an ENC value of 1. Hand units reduce ENC and range by half (75 BP) but will operate for 5 hours on an E charge (20 Watts). A base station will have an ENC of 5, a range of 50 kin, a Barter Point value of 500, and requires 5 E charges to operate for an hour (500 Watts).

Military and police units are comparable in structure but have double the range and Barter Point values of 150% of the comparable civilian version.

A small short-wave radio (250 BP) with an ENC of 2 will have a range of about 200 km and will be degraded less by man-made constructions.

Due to interference problems, the effective range in an urban environment will be reduced by 2D10 times 5%.

COMPASSES (5 BP) Allow a character to determine the compass direction.

CONTAINERS: A large variety of containers is available. Samples are presented below:

Item	Utility	ENC Collapsed	Capacity (Max. Bulk)	Barter Value	Notes
Small sack	0	.1	1 (Small)	1	
Large sack	1	.2	3 (Medium)	1	
Satchel	1	.5	5 (Medium)	2	1
Shoulder bag	2	.3	5 (Medium)	2	2
Knapsack	2	.4	5 (Medium)	2	3
Backpack	3	.5	10 (Medium)	3	3
Camping pack	3	.5	10 (Medium)	4	3,4
Large lightweight packs	4	.5	12 (Medium)	10	3,5
Bullet belt	3	.2	100 rounds	5	6
Cartridge belt	3	.4	10 clips	5	6
Belt pouch	2	.1	.5 (Small)	1	7
Vial	2	.1	1 deciliter	3	8,9
Flask	2	.3	5 deciliters	4	8,9
Bottles	3	.5	1 liter	5	8,9

Notes

- 1 Must be carried
- 2 Worn side-slung
- 3 Worn on back
- 4 Has 2D2 large pockets
- 5 4 large and 2 medium pockets
- 6 Snaps shut over clips
- 7 Snap, button closure
- 8 Fragile glass. Plastic not fragile U-3 and twice Value
- 9 Liquid container ENC values are constants

Containers only count against a character's total Encumbrance value if they are holding less than their collapsed ENC value inside. When worn in a proper fashion the ENC value of an item inside is only counted as half its ENC value in the character's Encumbrance Total. The item's full value is counted against the container's capacity.

DECONTAMINATION EQUIPMENT: Decontamination equipment is rated by the maximum number of cubic meters which will be decontaminated by the equipment at full charge. Equipment is also rated as Biological, Chemical, or Nuclear Decontaminant. One charge will decontaminate 1 cubic meter or 15 Locations on a character. Equipment comes in 10-, 50-, and 100-charge sizes. ENC value is one-half the maximum charge value. Barter Value on the equipment is equal to the charge size. Each charge has a Barter Value of 10.

Detection equipment comes in binary and analysis-capable forms. It is rated by type of contaminant detected. Range is 5 meters. Binary forms have an ENC of .6 and a Barter Value of 50. Analysis-capable forms have an ENC of 1.2 and a Barter Value of 50 base plus 25 for each part of a formula they will show to the character. Radiation counters only come in binary forms.

Analysis will only be made of contaminants in the unit's solid-state memory banks. Mutant strains and unclassified substances will read as "Unknown."

DRAFTING EQUIPMENT: A simple (25 BP) kit has an ENC of 2, and an Efficiency Factor of 1. A complex kit (50 BP) has an ENC of 6 and an Efficiency Factor of 2. Drafting equipment is required for a design Task. Design Tasks of simple things without using a Drafting kit is allowed but the character will have an Efficiency Factor of .25.

ELECTRICIAN'S KIT: Required for any electrical work.

Kit #	ENC	Notes
1(50)	2	Requires power for most functions but does include a meter for detecting active current at a range of 20 m. Efficiency Factor of 1. Power Rating of 100 Watts.
2(100)	2	Similar to Kit 1 but powered equipment works on batteries.
3(300)	10	Powered equipment for small and delicate work. Efficiency Factor of 1.5. Power Rating of 50 Watts.

FABRIC GEAR: A Spinning Kit (20 BP) will turn raw wool into thread with an Efficiency Factor of 1 and an ENC of 3. A Powered Spinning Kit (50 BP) has double the Efficiency Factor and ENC value.

Weaving kits are the same as Spinning Kits except they take the thread, as produced by Spinning Kits, and turn it into cloth. It requires 10 units of thread to produce 1 unit of cloth. One unit of cloth will cover one Location.

Sewing kits (5 BP) are used to turn cloth into garments.

They follow the pattern for Spinning and Weaving kits but a simple kit has and ENC of 3. It requires 1 unit of thread (2 BP) to turn 5 units of cloth into garment(s).

FIRE EXTINGUISHERS: This gear comes in small (5-charge), medium (20-charge), and large (50-charge) They are rechargeable. An extinguisher has an ENC value of .1 times its maximum charge and a Barter Value equal to 5 times its capacity. A unit of charge has a Barter Value of 10. One charge will reduce the strength of a fire by 1 in 1 cubic meter.

HANDLOADING EQUIPMENT: Handloading kits are specified as Pistol, Rifle, or Shotgun. The Efficiency Factor will be .5 times the result of 1 D3. The ENC of a kit is 1 and the Barter Value is 100 times the Efficiency Factor.

A unit of primers (25 BP) will do 50 rounds and has an ENC of 3.

A unit of smokeless powder (1 BP) is 20 grains and has an ENC of .001.

A bullet (1 BP) and a cartridge (1 BP) each have an ENC of .001.

A swage will be rated for the type of bullet it produces. Its Barter Value is equal to the BDG of the bullet it will produce. The ENC is .5 and its Efficiency Factor, from 10 to 100 (1 D10 x 10), is the number of bullets produces from 1 unit (10 BP) of lead (ENC of 1) in an hour's Task Period.

LEATHERWORKING KITS: Work the same as Sewing kits but the ENC of a Simple kit is 1.

LIGHT SOURCES: Fire or electrical light are the two commonest forms of illumination in Attermath! The chemical "Cold Light" sticks used by campers are still around also, but harder to find.

Any light source will be rated in terms of how large an area it can cover with Good Light (daylight levels). For 5 meters beyond the boundaries of this area, any light source will provide Dim Light, and for 5 meters beyond that, Poor Light.

Fire: A small flame (candle, sterno, match, kerosene lamp) provides 1 meter of Good Light unless magnified by a glass chimney. This will bring it up to 5 meters. A wooden torch, or a railroad or traffic flare, will provide 5 meters

of Good Light. A large fire (campfire or bonfire) provides 10 meters of Good Light.

A candle will burn for 30 minutes per inch of length; a small tin of sterno for 2 hours; a kerosene lantern or Coleman lamp for 1 hour per deciliter of fuel; a match for 1D3 + 1 Combat Turns. A prepared torch burns for 2 hours, but an improvised one for half that long. A flare is good for 3 hours, but has twice the Encumbrance of a torch when lit because of its highly irritating fumes and the hot chemicals it drips.

Electric Light: This mostly applies to portable light sources. Full overhead illumination such as modern office buildings will provide Good Light for the whole room it is in, if fully operational.

An electric light has a Wattage Rating. One half the Wattage represents the radius it will illuminate with Good Light if the light is shed in all directions evenly. If a reflector is used, as with a flashlight or spotlight, increase the distance to which Good Light is cast by a factor of 2 (double the range). Assume that this is for a reflector casting a 30-degree cone of light. If the cone is wider, reduce the multiplier; if narrower, increase it. If it is wider than about 90 degrees, no significant increase in range is achieved. If narrower than about 10 degrees, then the multiplier grows no larger.

Some standard sources of electric light are:

Pocket Flashlight: ENC: .1 Wattage: 4 Power Source: One E-1. Barter Value: 5. One of the small, disposable units sold at most stores today. Has a 30-degree reflector, giving it a beam range of 4 meters of Good Light.

Small Flashlight: ENC: .25 Wattage: 10 Power Source: One E-1 Barter Value: 10. Standard flashlight, although it operates off of one Eternabattery instead of the two or three dry cell units used today. Equipped with a 30-degree reflector, it has a range for Good Light of 10 meters.

Heavy Flashlight: ENC: 4 Wattage: 10 Power Source: One E-1. Barter Value: 50. The larger model of the standard unit. Casts a beam of Good Light for 20 meters.

Camper's Flashlight: ENC: .6 Wattage: 30 Power Source: One E-5. Barter Value: 75. Long-barrelled, with a heavy, adjustable reflector, this unit can be set for a multiplier to the base illumination of between 2 and 4, for a beam of 30-60 meters. It is heavy enough to use as a Club (WDM of 1.2), but has a chance in 20 of breaking equal to the damage potential of a hit. One such breakage will Desrepair it, and a second Junks it. A third time leaves you with a very shiny club.

Camper's Floodlight: ENC: 1.2 Wattage: 200 Power Source: 2 E-5. Barter Value: 120. A small spotlight mounted on a battery pack. It has a 60-degree angle of beam, for a Good Light range of 150 meters.

LOCKPICKS: See initial equipment on page 5.



MAGNATUNER

MAGNATUNER: This device allows a character with Magnalock Penetration Skill to "pick" a lock of that kind. The improved version (100 BP) uses an E-5, has an ENC of 1 and an Efficiency Factor of 2, and adds 1 to the character's BCS. See initial equipment on page 5 for the basic model. Uses .5 Charges per BCS attempt.

MEDICAL GEAR: Drugs are dealt with in Book 3. Other medical gear is listed below:

Item	ENC	Notes
Bandage (5 BP)	.01	Allows character to recover from 1 point of Lethal damage.
Medical supplies (10 BP)	.05	Uses vary.
Medkit 1 (50 BP)	.5	Adds 1 to BCS of user in First Aid
Medkit 2 (100 BP)	2	Used for most applications of Advanced Medical Skill. Has a carrying capacity of 1 (Small), This is a doctor's "black bag."
Medcomp (1000 BP)	2	The computer is a portable microprocessor with permanent memory holding diagnostic programs and telemetry interpretation programs. It is connected to a patient by several wire leads. It will analyze his general condition (DRT score, effective Attribute levels, age,

etc.). It has a BCS of 15 in analyzing diseases or the presence of drugs, it adds 2 to the BCS roll of a Pathologist in any situation. Consumes 1 Charge per 10 uses. It uses an E-5 for power under normal circumstances.

Surgery (2500 BP) — Adds 2 to Advanced Medical BCS. Power Rating of 1000 Watts.

PLASTICS EQUIPMENT: Rigid plastics require molding gear for production. The production of plastics stock also requires heavy equipment. Specifics are left to the Gamesmaster. Such equipment is not really portable.

Item	ENC	Notes
Plastics Repair Kit 1 (25 BP)	1	Can be used to repair plastics up to AV 5 which are not based on a Rigid Format.
Kit 2 (50 BP)	1	Can be used for plastics up to AV 9.
Kit 3 (100 BP)	2	Can be used for any plastics.
Repair charge (5 BP)	.05	One charge will repair 1 Location by 1 point of AV. Thus it takes 5 charges to repair 1 Location that had AV 5.

SHIELDS: These are dealt with in Appendix 5.

SURVIVAL GEAR: These are the components of a "survival kit."

Item	ENC	Notes
Match (1 BP)	.01/5	Has 90% chance of igniting when struck. Requires an Action.
Flint & Steel (1 BP)	.01	Has 40% chance of igniting tinder when struck.
Chalk (.01 BP)	.01	
Snare (2 BP)	.05	
Magnifying Lens (2 BP)	.01	Will ignite tinder in 2D3 Combat Turns (usable on sunny day only).
"Space" Blanket (10 BP)	.1	Used as a bed roll. Has a Thermal Factor of 2.

TOOLS: Various Tool Kits are available.

Item	ENC	Notes
Kit 1 (20 BP)	1	Hand tools of varying sorts. Efficiency Factor of 1.
Kit 2 (50 BP)	2	Kit 1 plus power hand tools. Efficiency Factor of 1.5.
Kit 3 (100 BP)	2	As Kit 2 but tools use E batteries at the rate of 5 Charges per hour of operation.
Kit 4 (1000 BP)	5	Heavy power tools as well as Kit 2. Efficiency Factor of 2. Power Rating of 1000 Watts.

Tool kits are designed for working wood. When working metal reduce the Efficiency Factor by .5 unless the Kit specified as a metalworking kit.



UNDERWATER GEAR: Various kinds of gear can be used in and under the water. Some examples are listed below:

Item	ENC	Notes
Wet suit (50 BP)	.05	Has Thermal Factor of 1. Covers 1 to 28.
SCUBA tank (100 BP)	3	Holds a half-hour of air.
Weight belt (25 BP)	2	Worn in place of normal belt. Allows character to adjust Encumbrance status to 1 step lower when in the water.
Flippers (10 BP)	.01	Doubles Base Movement Allowance when swimming. Halves it on land.
Spear Gun (70 BP)	1	Similar to an elasticity-3 slingshot with a Strength of 30 behind it. It requires the application of 30 Strength points to cock it in the fashion of a crossbow. Ranges are as a slingshot but all BCS modifications are

doubled. Underwater ranges are halved. The missile is treated as having a WDM of 1.5L.

Mask (20 BP)	.03	Allow maximum visibility under water.
Depth gauge/watch (100 BP)	.01	Allows the character to monitor his air supply and safe rate of ascent.

WATCHES (50 BP): Allow characters to coordinate action when out of communication with each other. If a party out of communication is attempting to coordinate actions with another group, it will miss by the Effect Number gotten from a Wit CST of the leader of one of the parties. If the Effect Number is negative they will act before the other party. Each point of Effect Number indicates a 1 Combat Turn difference.

VEHICLES

The intention of this section is to provide guidelines for the inclusion of vehicles of varying sorts into the world of *Aftermath!* Vehicles, by their very nature, are difficult to deal with in the same scale that one is dealing with a single man. The Gamesmaster will probably find that he must use a combination of Detailed Action and Tactical Scales to handle situations involving vehicles.

Vehicles are only dealt with in general terms. The Gamesmaster is left to provide specific details of vehicles that he wishes to include in his campaign. Provided in Appendix 7 is a selection of some sample vehicles to give the Gamesmaster, or player, a better idea of the transition from the generalized guidelines presented in this section to the specifications for a particular vehicle.

The Gamesmaster is warned that these rules are not designed to handle situations with large numbers of vehicles. If he wishes to devise situations which will result in the use of large numbers, he is advised to work out a compromise between *Aftermath!* and some other rules designed to deal with the complex interactions of many vehicles. The rules as presented deal primarily with ground vehicles though adaptation to aircraft and boats is minimal.

QUANTIFYING VEHICLES

Each particular vehicle is described by a listing of its specifics in relation to certain categories. These categories include Durability, Structure, Area, Damage Resistance and Fuel System. Each of these categories will be dealt with in turn.

The Durability of a vehicle is a measure of its condition. Durability ratings run from 1 to 20. A vehicle with a Durability of 20 is in absolute top condition while a vehicle with a Durability to 1 is barely able to function. When a vehicle's Durability reaches 0, it is considered to be Disrepaired, If the vehicle's Durability reaches a negative value beyond its Structure rating it is considered Junked. Beyond twice its Structure rating, the vehicle is considered totally destroyed and is even useless for parts. Thus, a vehicle with a Structure rating of 2 is Disrepaired if its Durability rating is in the range from 0 to -2 and Junked if the rating is from -3 to -4. If the rating is -5 or less, the vehicle is totally destroyed.

The Durability will also affect the maximum speed that the vehicle is capable of achieving. The Durability rating times 10% (maximum value is 100%) is the percentage of the stated top speed after modification for Fuel System, that the vehicle, in its current state, is capable of reaching. Note that this speed is not the same as the Maximum Safe Speed.

The Basic Structure rating of a vehicle is based on the ruggedness of its construction. The values run from 1 to 5. Each general class of vehicle may have any rating assigned to it by the Gamesmaster that falls into the general range for that class.

STRUCTURE RATINGS

General Vehicle Class	Rating
Vehicles designed for road use	1-2
Vehicles designed for off-road use	2-3
Heavy-duty vehicles or light combat vehicles	3-4
Heavy combat vehicles	4-5

The Area of a vehicle is the number of hexes on the DAT Display that are occupied by the representation of the vehicle. Thus, a vehicle that is 2 hexes wide and 3 hexes long has an Area of 6.

The Damage Resistance of a vehicle is based on its Structure and one half its Area. The product of these two numbers is the vehicle's Damage Resistance. Thus, a vehicle with a Structure rating of 2 and an Area of 6 would have a Damage Resistance of 2 x 3 or 6. When a vehicle is damaged in combat, each time the damage done to it reaches the value of the Damage Resistance, the vehicle will lose 1 point of Durability. Thus, our sample

vehicle, if it took 4 points of damage, would lose 2 points of Durability. When it takes 4 more points of damage it will lose another point of Durability.

The type of Fuel System used by a vehicle will affect such things as its maximum speed and its efficiency in utilizing fuel. In the chart below are presented four Fuel Systems. The Velocity Efficiency is a percentage of the top speed specified for a vehicle using a Petroleum fuel. This percentage is taken of the top speed given for a Petroleum fueled version of a vehicle such as can be found in whatever reference source is being used by the Gamesmaster for his statistics on the vehicle. This yields the top speed for that version of the vehicle at its maximum Durability. The Mileage percentage is applied in a similar fashion to the statistics for a Petroleum Fueled base vehicle.

A model vehicle with a maximum speed of 120 kilometers per hour which gets 10 kilometers per liter (that's 72 mph and 25 mpg) is designed to use Electric power. It would have a maximum speed of 48 kph and get 5 kilometers out of 1 charge. If the model vehicle had run on diesel fuel the kilometers per charge figure would have been 4.5.

FUEL SYSTEMS

System	Velocity Efficiency Kelometers per Hour	Mileage* Kilometers per Liter or per Charge
Petroleum ¹	100%	120%
Gasoline ¹	100%	100% (85%)
Alcohol ²	60%	80% (70%)
Hydrogen ³	50%	60% (50%)
Electric ⁴	40%	50% (45%)

Notes

- 1 The availability of vehicles using these Fuel Systems may soon become limited in the real world. Their availability in a ruined world may be non-existent.
 - 2 This is a system burning ethyl alcohol as the combustible.
 - 3 This system uses metallic hydrides to store hydrogen which is released as the combustible. It is stored as charges.
 - 4 This system uses power stored in a battery. It is stored as charges.
- * If the model vehicle operates on diesel fuel use the number in parentheses for calculation of the Mileage.



OPERATING A VEHICLE

A character driving a vehicle is committed to driving the vehicle for a whole Combat Turn. During that Combat Turn he will have his Base Action Phase altered to 20. This is the Base Action Phase of any vehicle. This BAP will be used to calculate the character's new Phases Consumed in Action Number which will be in effect as long as the character is driving the vehicle.

At the beginning of any of his Actions, all of which are Drive Vehicle, the character may alter the direction of the vehicle. The turning radius of a vehicle is one vehicle length per 10 kph of current speed. The Gamesmaster must use his discretion in applying this if the vehicle is being represented on a DAT Display. A Driving Skill BCS roll will alter the effective speed used in this calculation by the Effect Number, subtracting from it or adding to it according to the success of failure indicated by the roll.

The speed of a vehicle may be safely decreased by 5 kph per Action Phase. On the Action Phase that the driver declares that he is decelerating, the vehicle will move at the speed at which it had been travelling. At the end of that phase it will be moving at the new speed. On the following phase, it will move at its new speed. This process continues until the vehicle is at the speed desired by the driver or its speed is reduced to zero and it has come to a stop.

Eva is driving at 20 kph. A figure darts out in front of her about 12 meters down the road. Eva decelerates but does not slam on the brakes. Eva starts the deceleration on Action Phase 6 which is the first time she can react since she did not see the figure until Action Phase 7. For Phase 6, the vehicle is moving at 20 kph and will cover 1.6 meters. On Phase 5, it will be moving at 15 kph and cover 1.2 meters. On phase 4, the speed is 10 kph and the distance covered is .8 meters. Action Phase 3 will reduce the speed from its current 5 kph to 0 but the vehicle will cover an additional .4 meters. The vehicle will not be moving on Action Phase 2. The total distance covered since deceleration was started is 1.6 plus 1.2 plus .8 plus .4 equals 4 meters which is well short of the figure in the road.

As shown in the example, the distance traveled by a moving vehicle in one Action Phase is related to the speed at which it is traveling. The basic rule is that a vehicle will cover 1.6 meters per Combat Turn per kilometer/hour of speed. To find the distance covered in a single Action Phase at a given speed, divide the number obtained for the entire Combat Turn by 20.

A vehicle may accelerate at 1 kph per Action Phase. If the Gamesmaster wishes, he may designate a vehicle as having a higher or lower rate of acceleration. For convenience, the Gamesmaster may wish to only deal with speeds in 5 kph increments.

If a given movement calls for a fraction of a meter and there is doubt as to which hex of a DAT Display a vehicle will be in, round up to the nearest meter to avoid arguments. The table on this page gives calculated values for various speeds.

If a character wishes to decelerate at a rate faster than 5 kph per Action Phase he will find himself subject to the rules for Slamming on the Brakes.

If the weather conditions are less than optimal the safe rate of deceleration will be reduced. For example, in the rain the safe rate may only be 3 kph per Phase and on ice it might only be 1 kph per Action Phase.

KPH TO DAT MOVEMENT CONVERSION TABLE

KPH	in/ct	m/AP	Rounded Value
120	192	9.6	10
115	184	9.2	9
110	176	8.8	9
105	168	8.4	8
100	160	8.0	8
95	152	7.6	8
90	144	7.2	7
85	136	6.8	7
80	128	6.4	6
75	120	6.0	6
70	112	5.6	6
65	104	5.2	5
60	96	4.8	5
55	88	4.4	4
50	80	4.0	4
45	72	3.6	4
40	64	3.2	3
35	56	2.8	3
30	48	2.4	2
25	40	2.0	2
20	32	1.6	2
15	24	1.2	1
10	16	0.8	1
5	8	0.4	1

MAXIMUM SAFE SPEEDS

A vehicle will have a Maximum Safe Speed depending on its exact type and the weather and terrain conditions. In some cases the base Safe Speed presented in the chart below will exceed the maximum speed of the vehicle. This is intentional. It represents the vehicle's ability to negotiate difficult conditions in relative safety.

To determine the vehicle's Maximum Safe Speed, multiply the vehicle type's base Safe Speed by the modifiers for terrain and weather conditions used for Tactical Scale movement. This is done in the same way Tactical Scale movement rates are calculated. The value thus determined is the Vehicle's Maximum Safe Speed for the prevailing conditions.

If a vehicle not rated as Off-road Capable is operating off-road, it will have its base Safe Speed halved before it is modified to yield Maximum Safe Speed.

VEHICLE TYPE SAFE SPEEDS

Vehicle Type	Base Safe Speed (kph)
Bicycle/Tricycle	8
Motorbike	60
Car, bus	80
Truck, Recreational Vehicle	90
Wheeled ATV	100
Tracked ATV	120

TACTICAL TRAVEL

When vehicles are used for travel in Tactical Scale, the driver determines the speed at which the vehicle will travel. Consideration should be given to the terrain over which the travel is taking place, as this will affect the Maximum Safe Speed at which a vehicle can travel. The Gamesmaster may use the kph chosen by the driver to determine how far the characters will travel in an hour. If a sudden change in terrain occurs and the driver cannot

slow the vehicle in time, an accident may occur. In an attempt to avoid an accident, the driver may Slam on the Brakes. This is defined as deceleration of more than 5 kph for each meter between the point where the driver can react and the danger.

When Slamming on the Brakes the driver must make a Driving Skill BCS. For each 10 kph, or fraction thereof, over the speed which may be safely eliminated, the driver will receive a modification of -1 to his BCS. A successful BCS roll will allow a stop without incident. A failure will indicate an Accident.

Eva is travelling on a Good Road at 100 kph. Rounding a curve she sees that the bridge is out. She is, at present, 15 meters from the yawning chasm. She could safely cut her speed by 75 kph (15 meters at 5 kph per meter for 75 kph safe deceleration). This still leaves her travelling at 25 kph when she reaches the gap in the bridge. This gives her a -3 to her BCS (25kph/10kph for a modification of 2.5 or 3). With a BCS of 12 modified to 9, if she rolls a 9 or less, she will safely stop the vehicle. A roll of 10 or higher will indicate an Accident. This may or may not result in the vehicle hurtling over the edge depending on the type of Accident.

ACCIDENTS

Vehicle accidents can occur under any one of the circumstance listed below. The driver of a vehicle may make a Driving Skill BCS in an attempt to avoid the accident.

- Movement, when in Tactical Scale, at a speed which exceeds the maximum safe speed for the terrain and weather conditions. A Driving Skill BCS roll must be made each hour. The driver's BCS receives a modification of -1 for each 5 kph, or fraction thereof, in excess of the maximum safe speed.
- When the terrain or weather conditions change to lower the maximum safe speed and the driver does not alter his speed to a safe level. The check for an accident should be made when this occurs. The BCS receives modifications as above.
- Slamming on the Brakes and failing the BCS roll to stop safely.
- When the driver is attempting a high speed maneuver. This is defined as any maneuver at a speed which exceeds, in kph, the total of the driver's Deftness and Speed. The driver's BCS receives a modification of -1 for each 10 kph, or fraction thereof, by which the vehicle's speed exceeds that value.

ACCIDENT TYPE TABLE

Die	Type of Accident
01-20	The vehicle fishtails. No serious effect occurs. If the vehicle does not have an active driver, it is subject to further accident possibilities as outlined in the last of the accident causing circumstances listed above.
21-60	The vehicle stalls. It will lose all motive power and move in a straight line decelerating at 5 kph per meter moved. Slick surfaces would increase the distance to 1.5 meters and icy surfaces to 2 meters. The vehicle will lose 1D3 points of Durability.
61-85	The vehicle spins out. It will turn to face a random direction (roll 1D6 and treat the hex which it normally would have entered as 1 and number clockwise from there). The vehicle is then treated as if it had received a result as with a die roll of 21-60.
86-00	The vehicle crashes. See below.

- When the vehicle loses one or more Durability points. The BCS receives a negative modification equal to the Durability lost.
- When the driver takes any damage. The BCS receives a negative modification equal to the damage taken by the driver. Remember to include any BCS modifications due to the driver's condition if he is Wounded or Seriously Wounded.
- When the driver is killed or rendered unconscious. In this case, the speed in kph is the percentage chance of an Accident. This should be checked on each Action Phase and is cumulative. Thus, a vehicle travelling at 20 kph would have a 20% chance of an Accident on the first Action Phase on which it was uncontrolled and a 40% chance on the second.

Once it is determined that an Accident will occur, the Gamesmaster will roll 1D100 and consult the table below. If he deems it appropriate, the Gamesmaster may add or subtract a value to the die roll which he feels reflects the danger, or lack thereof, in the specific situation.

CRASHES

If a vehicle crashes, a Crash Factor will be calculated. This is important in determining the results of the crash.

The base Crash Factor is equal to the speed of the vehicle at the time of the crash in kph minus the current Durability of the vehicle times its Structure minus the driver's Skill score in Driving Skill divided by 10 and rounded to the

nearest, if he makes his BCS roll. In pseudo-mathematical terms this is $[(kph - (Durability \times Structure) - (Skill \text{ score}/10, \text{ nearest}))]$.

The base Crash Factor is multiplied by the Terrain Danger Factor to yield the adjusted Crash Factor. If the terrain Danger Factor is 0 or less, the crash is reduced to the results equivalent to a die roll of 61-85 on the Accident Type Table. The Terrain Danger Factors are given on the chart below.

TERRAIN DANGER FACTORS

Good Road	1D3 minus 2	Hills	1D10/2*
Poor Road	1D2 minus 1	Desert	1D2 minus 1
Ruins	1D10/2*	Mountain	2D6/2*
Open	1D3 minus 2	Marsh	1D2 minus 1
Scrub/Rough	1D3 minus 1	Swamp	1D3 minus 1
Woods	1D6/2*	Forest	1D10/2*

*Retain fractions.

The effects of the crash on the vehicle and the passengers are based on the adjusted Crash Factor.

- The Durability of the vehicle is reduced by the Adjusted Crash Factor.
- The adjusted Crash Factor is the number of six sided dice of damage taken by the passengers. This is C type damage unless the vehicle's Durability has been reduced to 0 or less. If so, the damage is all lethal type damage.
- The adjusted Crash Factor is the percentage chance that the Fuel System will ignite if Petroleum, Hydrogen or Alcohol. If the Fuel System is Electric, the batteries will lose their charge. The adjusted Crash Factor becomes the chance in 20 that the batteries themselves will be ruined.

If the Fuel System is ignited, the vehicle will burn. The fire will reduce Durability at a rate dependent on its type. Once the vehicle is totally destroyed, it will explode at the bookkeeping phase of the following Combat Turn. If the vehicle was considered totally destroyed at the time of ignition, it is considered to have a "pseudo-Durability" that the fire will consume. This "pseudo-Durability" is equal to the result of 1 1D3.

Explosions of vehicles are created as if the vehicle were a grenade. Any character still within a vehicle which explodes will be killed.

DURABILITY CONSUMPTION RATES OF FIRE AND EXPLOSIVE RATING

Fuel System	Rate	Explosive
Petroleum	1D3 per Combat Turn	5/5
Alcohol	1D2 per Combat Turn	2/3
Hydrogen	1D2-1 per Combat Turn	1/0

BARRIER EFFECTS OF VEHICLES

Material	Barrier value
Safety Glass window	10
Light metal as in small cars	20
Medium metal as in average cars and light truck bodies	30
Heavy metal as in big cars and standard truck bodies	40
Engine blocks	100

VEHICLE SAFETY DEVICES AND THEIR EFFECTS

Various safety devices can reduce the effects of a crash with regard to the passengers. Escaping from such devices requires a conscious character or undistracted aid from another character, if the one restrained by the device is unconscious.

SEAT BELTS cancel the effects of 1 point of adjusted Crash Factor. It requires a Dexterity Ability Saving throw to release them in 1 Action Phase. Otherwise, the character will be free in 2 Action Phases.

A CRASH SUIT or BLAST BUFFERING will cancel the effects of 1 point of adjusted Crash Factor for each level of effect that the suit has.

CRASH BAGS will cancel the effects of 2D6 points of adjusted Crash Factor. They will deflate of their own accord in 3 Combat Turns. A character can escape in 1 Combat Turn with a Speed Critical Saving Throw. If the character's roll was in his Ability Saving Throw range, it will take 2 Combat Turns. Otherwise, he must wait until they deflate.

The AVERAGE ARMOR VALUE worn by a character will also have some effect. For each 2 points, round down, the effects of 1 point of adjusted Crash Factor will be cancelled.

FIRING ON VEHICLES

Sooner or later, vehicles will be fired on. The results of this fire will depend on what is being fired and the nature of the target. Vehicular targets are placed in one of two categories:

Hard or Soft. Hard targets are those vehicles which are armored against incoming fire, such as tanks and other combat vehicles. Soft targets are all those other vehicles whose tasks generally involve more peaceful pursuits.

FIRING ON SOFT TARGETS

If a character is firing on a stationary target, he may choose which portion of the vehicle he is firing on. If it is a small part of the target such as a light, he should receive a significant negative modification to his BCS (about -10). A somewhat larger target such as a wheel or tire would have a smaller modifier (about -5). Gas tanks, as protected as they usually are, might require a Critical Hit. Other portions of a vehicle such as the driver's area (front seat, cab, etc.) and body (passenger seat, truck body, etc.) would not receive a modification but would still be subject to a random determination as to whether the vehicle or a passenger is attacked.

To determine if a passenger is attacked, divide the number of characters in that portion of the vehicle by the result of multiplying .01 by the Area of the vehicle in that portion plus 1, rounded to the nearest.

Sepp is firing at a stationary compact car. It has an Area of 6, being 2 by 3 meters on the DAT display. He is firing at the front seat to try to get the driver. The Area of the front seat of the vehicle is 2. See the illustration. There are two men in the front seat. Thus, the calculated chance of attacking one of them is $2 / (.01 \times (2 \text{ plus } 1))$, nearest, or 66.6, or 67%. The Gamesmaster rolls 1D100 with a result of 35. Thus, one of the characters will be attacked. The Gamesmaster designates the driver as 1 and the other man as 2, and rolls 1D2 with a result of 2. The man next to the driver is hit.

Once a character has been hit, the Gamesmaster should determine where he has been hit. Incoming missile attacks will be impeded by the Barrier Effect of any portion of the vehicle that gets in the way. This is left up to the Gamesmaster to decide (what is in the way) as the styling and variations possible in vehicles create a range far to great to even attempt to catalog. A guideline of Barrier Values is presented below, along with an illustration of the cover provided to a character seated in an automobile.

If there are no characters in the portion attacked or if the characters are missed, the vehicle itself will be attacked. The Barrier Values will have their effects on incoming missile fire and the damage done will be counted against the vehicle's Damage Resistance. As noted before, each time the Damage Resistance is exceeded the vehicle will lose 1 point of Durability.

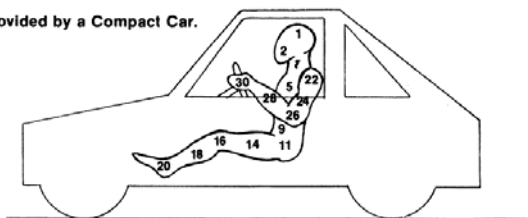
A Critical Hit when firing at a vehicle will attack the vehicle. It will also call for a roll on the Vehicle Critical Hit Table.

VEHICLE CRITICAL HIT TABLE (D100)

(if moving, check for Accident)

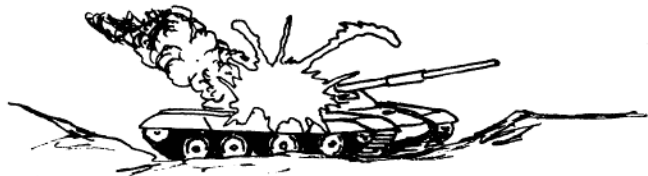
Die result	Effect
01-20	No significant effects occur.
21-60	The vehicle receives an additional Durability loss of 1D6.
61-00	The vehicle receives the extra Durability loss as above and receives the appropriate additional effect:
61-65	Steering loss occurs. The vehicle cannot be controlled. If moving, treat as an unconscious or killed driver.
66-70	The brake system is shot away. The vehicle cannot be decelerated if moving.
71-75	The vehicle's electrical system is shot away. This will eliminate any lights the vehicle is using.
76-80	The driver is attacked. The firer will roll his base BCS. If the roll is successful, the driver receives a Critical Hit. If not, the driver receives a normal hit.
81-85	The vehicle's engine has been hit. Treat the vehicle as if it had received an Accident result of 21-60. It will not run until repaired.
86-95	The vehicle's motive system (tires or what have you) has been hit. It will not run properly until repaired. If the vehicle is moving, check again for an Accident and add 10 to the die roll.
96-99	The Fuel System is attacked. The damage done is the percentage chance that the fuel will ignite or the batteries will discharge. If the vehicle is moving, treat also as if it had received an Accident result of 21-60.
00	The damage done is the percentage chance of immediate explosion of the Fuel System. If the explosion does not occur the Fuel will ignite. Otherwise treat as 96-99 above.

Hypothetical "Cover" Provided by a Compact Car.



If the vehicle is moving, certain of the above situations are altered. A character may not choose the portions of the vehicle at which he will fire. The chance of a character in the vehicle being hit is calculated using the Area of the whole vehicle instead of just the Area of the portion in which he is located.

If moving, the vehicle itself will have a Combat Dodge Ability to be used against incoming fire. This CDA has a value of 1 for each 10 kph of speed, or fraction thereof, at which the vehicle is traveling when the fire is resolved. Additionally, a driver may maneuver to increase this if he makes a Driving Skill BCS roll. Remember that if the vehicle is moving at what are considered high speeds for the driver, there will be a check for an Accident. If the driver makes his BCS roll to make the dodging maneuver, he will add a number to the CDA equal to his Driving Skill score divided by 10 and rounded down.



FIRING ON HARD TARGETS

Fire on a hard target with small arms or muscle-powered missile weapons will have no appreciable effect. Guns and weapons capable of destroying a hard target are rated by their VDG, or Vehicle Damage Group.

The VDG will be reduced by the Vehicle Armor Value of the target in the same way that a barrier reduces BDG. The adjusted VDG is the percentage chance that Hard Target Special Effects will occur. If this happens, the Gamesmaster will consult the Hard Target Special Effects Chart. A Critical

Hit with a weapon rated for VDG will also cause this table to be checked.

The adjusted VDG divided by 10 and rounded to the nearest is the number of points of Durability lost by the vehicle. In addition, a vehicle will receive damage from the VDG in the same way that a character receives damage from BDG. That is, the VDG is divided by 10 and rounded up; that is the number of D10s that will be rolled. The VDG divided by 10 and rounded to the nearest is the number of additional points of damage that will be added to the result of the D10s rolled. If such damage indicates additional Durability loss, it occurs in the normal fashion.

If the vehicle loses Durability due to a hit of this sort, the number of Durability points lost is the number of D6s of C type damage taken by each member of the crew. The number is reduced in the same way as crash suits, blast buffering, and Average Armor Value reduce the effects of an adjusted Crash Factor.

The Durability Loss is also the chance in 20 that the Fuel System will ignite or lose charge. Some fighting vehicles will have fire control systems which will reduce the chance by their rating.

HARD TARGETS SPECIAL EFFECTS TABLE (D100)

Die Result	Effect
01-20	No significant effect occurs.
21-35	The shot was glancing. No direct Durability loss occurs and damage done to the vehicle is cut in half. If this still results in a Durability loss, the loss due to damage will occur.
36-00	System loss detailed by the breakdown below:
36-45	A system (at the Gamesmaster's discretion), other than one listed below, is knocked out. If no system is available, an additional loss of 1D6 Durability occurs.
46-55	Communications systems are knocked out.
56-60	The electrical system is knocked out.
61-65	The main armament is knocked out.
66-75	The motive system (treads, wheels, etc.) is knocked out. If moving, the vehicle will be treated as if it had received an Accident result of 21-60.
76-80	The power plant is knocked out. If moving, the vehicle will be treated as if it had received an Accident result of 21-60.
81-85	The ammunition is hit. The adjusted VDG is multiplied by 2 to get the percentage chance of immediate explosion.
86-95	The Fuel System is hit. The basic chance of ignition is doubled.
96-00	The vehicle's Fuel System is ignited or discharged. The adjusted VDG is the percentage chance of an immediate explosion.

Explosions will add the explosive value of 1 D10 rounds of the vehicle's ammunition to the "grenade" effect of the vehicle's Fuel System. The blast value of 1 round is equal to the VDG of the round divided by 10 and rounded to the nearest.

ANTI-VEHICLE AMMUNITION

Tank or APC rounds	Infantry weapons
Round	Recoilless Rifle
152mm HEAT	51
120mm APDS	106mm
105mm HEAT	90mm
105mm APDS	Machine gun
	VDG
90mm HEAT	50
30mm AP	40
20mm AP	BDG x .01 x Rate
	Factor
	BDG x .02 x RF
	36
	33
	6
	With AP ammo
	LAW
	3.5" Bazooka
	40mm Grenade
	Launcher

Artillery Rounds

Round	VDG
105mm HEAT	15
Non-HEAT	Treat as explosions to exposed crew.
Non-AP	Vehicle takes VDG hit of 1/2 explosion strength at its range from the ground zero.

HEAT receives -10 when rolling for Hard Target Special Effects. HE/HESH (artillery rounds) receive a -20.

AP and APDS rounds lose 1 point of VDG per 100 meters of range. They add 5 under 100 meters and add 10 under 50 meters.

ANTI-TANK GUIDED MISSILES

Type	VDG	Range (in)		BCS modification of ranges to*					Ma
		Mi	Ma	300 m	500 m	1000 m	1500 m	x	
Cobra	60	40	200	—	-8/-9	-6/-8	-2	+0	
Swingfire	60	15	400	-8/-9	-5/-6	+0	+0	+0	Into or through cover
TOW	90	65	300	-2	+0	+0	+0	+0	-50% of base BCS
TOW (imp)	90	65	455	-2	+0	+0	+0	+0	Into or through smoke
HOT	90	75	400	-5	-2	+0	+0	-1	-50% of base BCS
Shillelagh	90	80	550	—	—	+0	+0	-1	Remote control unit in use
MILAN	60	25	200	5	+0	+0	+0	-1	-2 to BCS
Dragon	60	65	100	-2/-5	+0/-2	+0/-5	—	—	*stationary/moving

Moving hard targets get the same Combat Dodge Ability as soft targets. The character firing on a hard target may never choose which portion of the vehicle he is firing upon. The only exception to this is fire directed at an exposed or partially exposed character such as a tank commander standing in the turret hatch. Even small arms can be used for this kind of attack. If the Hit Location roll indicated that the portion of the target that is hit is covered by the vehicle, the vehicle will be attacked instead. This means that small arms will have no effect.

Weapons rated for VDG will always attack the vehicle. There is no need to check to see if a character is attacked. A successful attack on the vehicle that penetrates its armor will automatically attack the crew.

If a weapon rated for VDG fires on a soft target, treat the target as if it had a Vehicle Armor Value of 2.

Vehicle-level armor is rated on a scale similar to that used for the armor worn by the characters. Materials have the same rating but are much heavier, thicker, denser, etc. If non-VDG-rated weapons are used against them they have an effective Armor Value of 10 times the rating of the material when used by a character, and will act as a Barrier. As you will see, this effectively stops most rounds not rated as anti-vehicle.

REPAIRING VEHICLES

A character with the proper Repair Skill may repair vehicles. Each point of Durability is a Task. The Task Value is equal to the vehicle's Damage Resistance. It requires 1 unit of parts for each Durability point. A Disrepaired vehicle of the same type will yield 2D3 units and a Junked vehicle will yield 1D3 units. If a particular system has been destroyed, the Task Value is triple the Damage Resistance and it will require 2D6 units of specific parts in order

to make the system function again. Repairing a system is a separate Task from repairing the vehicle's Durability. The Task Period is a day.

SURVIVAL

In between fighting for their lives, characters in the Aftermath need to eat, just like everybody else. Besides fresh ammo, they need to procure clothes, shoes, and so on. How do they go about this?

EATING

The first thing to go in urban areas after a general collapse will be food. Unlike rural locales, which can become self-supporting in such matters, the city provides no arable acreage, at least not without some lengthy preparations.

The city survivor has several options:

- He can hunt. Since *Aftermath!* generally assumes a few decades between the Ruin and the start of play, there will be game present in the urban environment. And, as the inhabitants of any wartime city would tell you, some game abounds from the start. "Rattus Rattus Norvegicus," the Black Norway Rat, is edible, even nourishing, and has long been known as a staple for starving civic populations. During the last year of WWII, the city of Berlin was almost 100% de-ratted, as the people eked out their sub-starvation level rations by hunting the grey residents of their sewers and walls. Man backed into a survival corner, still seems able to make a "cornered rat" look like a day-old kitten when it comes to savage survival potential. Cats, dogs, pigeons, and the other passengers on the city's bounty would also become fair game.
- The average city can feed its full population for only a day or two on stored, preserved foods. But if war or disaster has eliminated most of that population, the situation is altered. As long as food stocks last, they will feed the survivors. In this as in much of *Aftermath!* we have made a basic assumption about packaging. We are not far from developing commercial packing techniques for edibles that will last indefinitely. Chemically inert plastic containers, 100% effective sterilization techniques for preserved food, freeze-drying, effective vacuum-packing, all would produce a stored treasury of foodstuffs that would be edible after centuries. So, just as they search for guns, ammo, machinery, and so on, the characters can scavenge food, luxuries like tobacco and liquor, and such necessities as medical supplies and drugs. Positing that the increased need to save energy and prevent waste during the pre-Ruin years leads to a highly developed technology of storage and preservation, the extrapolation is not outrageous.
- Besides doctrinal Hunting and Fishing, using the appropriate Skills, or using Survival Skill to feed oneself on a day-to-day basis, the character may be able to eat such beings as come out on the short end of a fight. In the Animal descriptions in Book 3, we give figures as to the edible portions of the larger creatures that characters may encounter. That lion you shot in Central Park may also keep you fed for a couple of days.

In the country, the same options are available to the hungry character. The game is more plentiful, and there will be fewer stores of packaged foods to raid, unless one goes bandit, hitting farm communities for supplies. Fresh agricultural products and animal foods will be available in the farming communities, but stop to consider this: Without access to high-technology agricultural materials and equipment, the average yield of crops and the raising of food beasts is going to decline. After the first few waves of starving city refugees hit the rural areas, the farmers are going to start meeting any strangers with rifles and shotguns.

QUANTIFYING THE DAY'S TAKE

A party of Characters running out of food may opt to hunt, fish (if a body of water is present), or forage for their food. This posits that they do not have an Encounter with anything edible. Their locale will affect the take on Hunting.

Terrain Type	Hunting BCS Modifier	Effect Die Modifier
City, ruined or built up	-3	-1 Group
Open rural (Plains, Farmland)	-1	No change
Forest, Woods, Foothills	+2	+1 Group
Mountains, Desert	+1	No change

Fishing is unaffected by the type of environment. Lake, river, stream, or ocean, the differences tend to even out in the long run.

Foraging is campaign dependent. Book 3 covers the basic Foraging rules, and the Gamesmaster will set up the actual situations.

Of course, finding a community or even an individual or small group with food to spare can also feed the characters. Depending on their ethics, they

may try to take the supplies or they may engage in a Bartering session, either of which is played out on the spot, rather than being handled on a fixed doctrinal basis. Small groups of wanderers are not likely to trade food, nor are communities that have to scrounge it themselves. Farming communities, or groups with large stockpiles of preserved goods, may very well be into trading food for other goods, if the characters comport themselves properly.

OPTION Hunting Out an Area

The Gamesmaster may choose to decree that the area chosen for hunting operations will tend to get sparser if it is used constantly. For every day after their first that characters stay put in one locale, hunting, reduce the BCS used by 1D3. It will take a 10 km move to get into new territory, where the game has become less wary.

TYPES OF FOODSTUFFS

For purposes of calculating bulk, there are several broad classifications of edibles.

Natural Foods (1 BP/Ration): Enough to keep a man going for 1 day at full efficiency bulks 1 ENC. These are fresh (relatively) animal foods, grain or grain products, or vegetables.

Preserved Natural Foods (2 BP/Ration): Dried meat, vegetables, hard-breads (the jerky, gorp, and hardtack of the backpacker) run to .7 ENC per day's rations per man.

Packaged Foods (5 BP/ration): The standard food containers of the pre-Ruin. Canned or vacuum-packed goods. A day's rations bulks .5 ENC

Freeze-Dried Foods (10 BP/Ration): The LURPs of military issue, camper's foods, trail rations. Dried and packed in a vacuum at freezing temperatures, these will keep for up to 5 years with modern, imperfect packaging techniques. Picture their life span with the posited super-packaging systems we spoke of. Requiring water and sometimes heat to be reconstituted, these compact rations Encumber one .3 per day's eating.

Super-K Rations (15 BP/Ration): The ultimate in preserved nutrition. Developed from formulae used in the space program, these squeeze-tube-held pastes provide a full day's rations from a quantity bulking only .25 ENC. They are not the most appetizing meal in the world, but then things are rough all over.

All of the above are assumed to provide a sufficiently balanced diet to prevent rickets, beriberi, scurvy, etc., etc. Gamesmasters with a more rigorous background in dietetics may provide for deficiency diseases, but frankly, the world of *Aftermath!* is hostile enough without that.

STARVATION

A character can go on half rations for a number of days equal to twice his Healing Rate before it really starts to slow him down. He can go without food for a period equal to the Healing Rate on the same terms. After that, he will start to starve.

Starvation acts like a Disease in some ways. It has a base "Virulence" of 1 on the first day after the safe period is over if on half rations. It has twice that if fasting completely. Each subsequent day of half-starving will add 1 to the "Virulence Group." If the character is not eating at all, each day doubles the Group. Starvation advances up HLH. When the advance exceeds the Health CST, the victim is in a permanent state of Partial Fatigue. When the AST is exceeded, this becomes Full Fatigue. When the Health is exceeded, the character passes out. He will die in a number of hours equal to his Health Group Effect Die roll.

Getting a day's rations into the victim will arrest the process at any time. For each day of proper eating, the character will reduce the Advance by his Healing Rate. Once it is restored to a point past his Health AST, the episode is over, the rest of the Advance simply goes away, and if necessary the character could go on short rations again.

Going off full rations before reaching this point starts the Advance from the point reached in the healing process, at whatever initial "Virulence" is appropriate for the new level of intake (i.e., half rations or no food).

During the "Incubation" period before Starvation starts its advance, should the character go from half rations to no food, his safe period becomes his Healing Rate. Should he do the reverse, his safe period would become twice his Healing Rate. If he suffers the reduction in period after he has been on short rations for more days than his Healing Rate, he starts to starve at once. If, during this time, he eats half-rations, then that day's "Virulence Group" is increased by 1 over the previous day's. If he fasts the next day, then the Group doubles, based on the adjusted Group.

Frank, with a Health of 30 (Healing Rate of 4), has three days' Rations. Sensing that things are getting tight, he parcels this out to last for 6 days, going on half rations. He was right: there is nothing to be found that is even

remotely edible. On half rations, he can go for 8 days (2 x Healing Rate, which is 4). But on day 7 he can eat nothing (nothing is left), so he starts to starve then, as it exceeds his safe period of total fasting. Since he is eating nothing, he suffers a Group 2 effect, taking a D6 of Advance up his Health. A 2 is rolled, so Frank is still unaffected (but very hungry). Three days later he is doing very poorly. Day 8 gave the Starvation a Group of 4 (twice the previous day's Group, a 2). He took 2D6 of Advance, scoring 8 for a total of 10. The next day, a Group of 8 hit him. He rolls a 5, the minimum possible score on 2D10+3, which slams him over his Health CST, and totals 15 points against his Health. Any more loss will put him into Full Fatigue. But he catches a rat, providing half a day's rations. So on day 10, the Group is only 1 higher than on day 9, for a Group of 9. Rolling 2D10+4, he takes an Advance of 10, totaling 25. He is Fully Fatigued but not dead yet. Desperately plowing through a deserted, rubble-filled storefront, he finds a case of 12 packets of Packaged Food, each providing a day's ration. He starts eating again. He recovers 4 points of Advance per day, and will throw off the Starvation completely when he has reduced it past 10. This will take 4 days, since his Healing Rate is 4, and that takes the Advance back to 9 points, whereupon it goes away.

Close, but if the character can procure food, or be fed if he is unable to forage for himself, Starvation is quickly reduced.

Special medical preparations, using Advanced Medical Skill, can accelerate this process: a glucose drip bottle, feeding the character by intravenous needle, will add 1 to his Healing Rate when recovering from Starvation, and add 2 to it if the doctor makes his BCS in the Skill. High-energy foods will add 1 to the rate of recovery, as will certain drugs if they are used in conjunction with proper eating.

WATER

The need for Water is handled much like that for Food. At random, when characters state they are looking for water, the Gamesmaster may require that they spend an hour doing so. This requires no BCS or Saving Throw, but will allow them to find any local source of freely available water (or other liquid that will do the job). If this fails, there may yet be water available, but it is a Task requiring the use of the appropriate Survival Skill to find. The Gamesmaster will set the Task Points needed, and the Task Period is set by the terrain type. The chances of locating Water are given on the following Table.

Terrain Type	Water Findable by Survival Skill		No Water	Chance of Contamination
	Free Water	BCS		
City (Intact)	1-4	6-9	0	30%
City (Rubbled)	1-3	4-8	9-0	50%
Open Rural	1-6	7-0	—	05%
Forest, Woods, Hills	1-7	8-0	—	10%
Desert	1	2-6	7-0	10%
Swamp	1-0	—	—	80%

Free Water: Defined as a noticeable supply of apparently drinkable water.

Water Findable by Survival Skill: May require digging for a spring, locating an old cistern, finding a case of sealed water bottles, etc.

No Water: There is no water to find within a 5 km radius.

Contamination: Drunk without purification processes, the water will carry some disease. Boiling will allow a reroll of the Chance percentage. If the die roll is greater than half the original percentage, the water has been purified (although characters will not know this without some testing gear).

The "Super Halzone" tablets in the Equipment section will eliminate any contamination.

Obviously, if the characters are next to a river or stream on the Game Map, they do not need to worry about finding water. The Gamesmaster can apply his judgment in the matter. If it has been raining for two days, there will be plentiful water available.

Assume that an unlimited supply of water exists when it can be found at all.

THIRST

Anyone with a background that includes getting lost in the wild will tell you—thirst kills you faster than hunger.

The minimum daily ration of water is 1 liter (1 quart) per day. If fresh food is plentifully available, we can assume that about half of that will be obtained from the water content of fruits and vegetables, or animals' juices. The Safe Period for Thirst is equal to the Healing Rate on less than full rations. It is only 1 day if no water is available. Thirst kills just as Starvation does, but all values for its Advance are doubled. In effect, Thirst is Starvation with a WDM of 2!

However, if a character at any point in dying of Thirst can get a liter of water into him, all effects of the Thirst are wiped out immediately.

ABOUT CANNIBALISM

We might as well get this problem out in the open. It is highly likely that humans driven to the wall by hunger in the collapse of their civilization will turn to cannibalism. It has happened in less widespread disaster situations, and there is no logical reason to suppose it won't happen in the Aftermath.

Players and Gamesmasters must discuss such things until a mutually satisfactory answer is found. In Play testing, the universal response has been a preference for starvation. Several Players designed Characters who killed cannibals on sight, or upon first learning of their diet. The usual reason was a Character History that included losing loved ones to the roving "Ghoul" gangs, the slang nomenclature we used to designate cannibals.

Our own feeling is that the impact upon a human being who turns to eating his own kind for food will be such that he will tend to lose much of his humanity, becoming a predator by nature and a ravening threat to his fellows. The overall ethos of the survivor communes and wanderers in the play test Campaign was that Ghouls, as their nickname implied, had become a form of monster, set in eternal enmity with the rest of the race.

In the Bibliography, we recommend several novels that deal with the cannibal problem in an aftermath. It is a central plot element in *Lucifer's Hammer*, by Larry Niven and Jerry Pournelle, and also appears in such works as *Some Will Not Die* by Algis Budrys, *A Canticle for Liebowitz* by Walter Miller, and numerous works of Post-Holocaust fiction.

On the pragmatic side, we give the nutritive values of human flesh on the Tables in Book 3. We would like to point out that the closer a food animal is to our own cell structure, the more likely its meat is to carry germs or parasites which will infect us. Fish is quite safe for humans to eat raw: it is not at all like human tissue. Pork, a very close twin of our own structure, requires extensive cooking to eat safely. Therefore, human meat will be a risky dish for human consumption.

It is an ugly question, but it must be dealt with by each Campaign. Who goes Ghoul, and what does it cost him in mind and soul?

SURVIVAL SKILL

Whenever faced with a survival problem (this includes dead cities), the character can always be given a last-ditch solution by making his Survival Skill BCS. The Gamesmaster will be the final arbiter of what applications are permitted this Skill, but we offer these possibilities:

- Find 1 day's food of some sort.
- Find a liter of water somewhere.
- Survive the effects of exposure for 1 night.
- Get a fire started in 60 minutes—a Wit Group Effect Die roll.
- Get a compass bearing.
- Generate a signal visible/audible for a radius of kilometers equal to the Effect Die roll.

The ex-Boy Scouts or Green Berets among our readers will doubtless have other ideas along these lines. Only one attempt per day to accomplish one of these things is permitted, although each of them can be tried during that day. This is used when there has been no other means of doing the desired thing found: i.e., the Hunter who blows his Hunting BCS can still get enough to feed 1 man by making his Survival BCS. Whether he will share it with his buddies or gobble it down himself is up to the Player.

WEATHER

We do not deal with Weather much. Since the ideal **Aftermath!** campaign is in the Gamesmaster's home territory, he knows better than we what the climate is like. An all-embracing weather rule that fits the Middle Atlantic States, where we are writing this, will freeze characters in the ruins of Miami, but leave the survivors of the Fall of Toronto in shirtsleeve comfort.

Unless you are in Death Valley, great heat is not really a problem. The blanket rules for hot climate can be summed up as requiring a Survival BCS each day, or else the character needs twice as much water that day.

Cold weather will not bother characters warmly dressed (quilted cloth over half their bodies, and at least light cloth everywhere else). Gamesmasters setting an adventure in arctic conditions can require special clothes, likewise those having characters assault mountain peaks. Characters not dressed for winter will suffer from Exposure. They are always Partially Fatigued when in the cold for over 10 minutes times Healing Rate. If forced to spend the night exposed to the elements, they must use Survival Skill to protect themselves, or risk catching Pneumonia, which is described in the Gamesmaster's rulebook under Sample Diseases.

If Climate is a more central element of your Campaign, you will have to elaborate on these foundations for yourself.

PLAYER CHARACTERS AMONG THE RUINS

We have discussed the mechanics of designing a Player Character in some detail, and have directed general comment at less quantifiable aspects of such design: putting on the character's "mask," or "thinking with his head."

But what specific guidelines can we give you for running a character in **Aftermath!**, the game set in a world where all the old rules died with the civilization that spawned them. By now, it is probably crystal clear to most of you that an **Aftermath!** campaign can get pretty sickening, if you follow some of the implications of world collapse to their logical conclusions. How do you keep the campaign from degenerating into a mindless series of gunfights between ruthlessly amoral Player and Non-Player Characters?

It is all very well to say it is the Gamesmaster's job. But that poor jerk has an awful lot on his mind already, and in this area especially the full cooperation of the Players is necessary to keep things alive.

When the campaign is getting off the ground, perhaps after the first few scenarios, when people are getting comfortable with the rules, a session discussing the state of the world and looking at possible goals for Player Characters is in order. What is the known state of the country? Is Europe still alive, or Asia? Are the characters lone wolves, fighting just to survive, or are they part of a community, struggling to keep a spark of the old civilization burning, or to bring the seeds of a new tomorrow to fruition?

The answers to these questions provide the foundations for ongoing character motivation in the campaign. On a more personal level, Players should consider the following:

You were 24 years old when the Ruin fell, and slammed mankind back into a second Dark Age. Now you are going on 50. You used to think of yourself as a decent kind of person. Since things fell apart you have done some things to survive that don't bear thinking of. You face a giant dilemma every day you decide to stay alive: do you throw every ethic you ever held dear overboard, or is there some basic code of behavior that is going to keep you sane and human through all this?

We have seen "Oldsters," characters who were adult by the time of the Ruin, draw weapons on fellow Player Characters when confronted by some act their Players had decided was intolerable to the character.

Scene: A dark room, the inner chambers of a great museum, now a tomb dating back two and a half decades. A party of schoolchildren died here, caught by the disaster that killed a world. A group of people move carefully around the corner, holding makeshift torches. Two of the younger members see the tiny, half-mummified corpses. "Check 'em out for good stuff." The pair starts to move in. The snick of the safety catch seems awfully loud in the still, marble room. "I don't expect you fellas to understand this, but if you damn ghouls touch those kids, I'm going to kill you." The quiet conviction in the rasping, age-husky voice freezes the two in their tracks. "Aw, Chipper, you got some crazy ideas," complains one of them. But they back up, very slowly, and with their hands held well clear of their own holsters. They've seen the old man march a stream of slugs from that rifle up a man's chest and into his face, firing at 100 yards. He is barely 10 feet away. As the tension subsides, the party moves on. The glimmering torchlight fades, and the brief disturbance sinks into the uncomplaining forgetfulness that is the special hallmark of the dead.

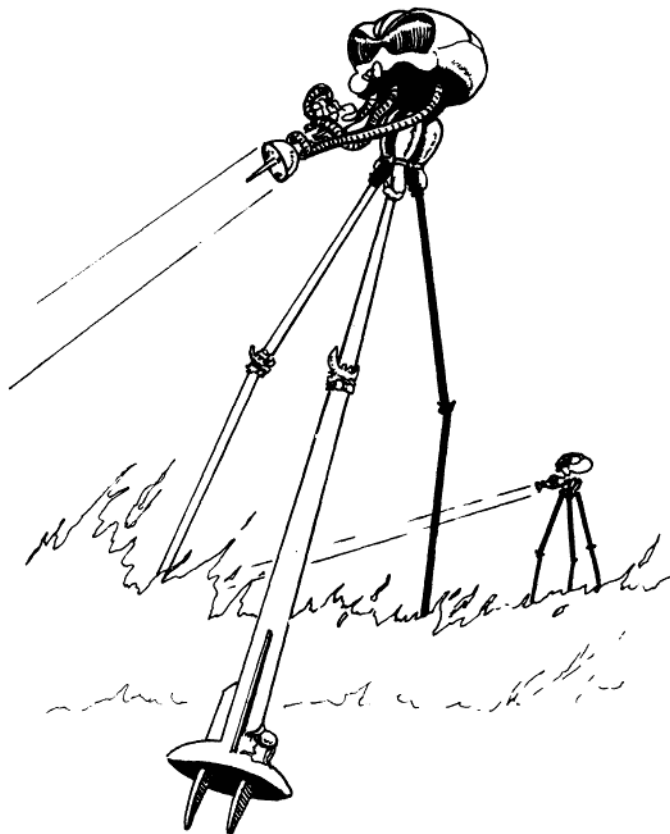
The Player who built Chip, or "Chipper" as his associates call him, has built a solid, righteous southerner, holding on to his humanity in the savage world of the Ruin by dint of a basic code of ethics. Rolling the bodies of dead children violates that code, to the disgust of the characters with less restraint.

On the flip side, an interesting juxtaposition exists in the play test campaign. One of Chip's current companions is Tater, who is a couple of years younger than the rifleman. Tater ran with the Pagans (an East Coast counterpart to Hell's Angels). He is a cycle freak, a graying biker in a world without cops. When things fell apart, we shudder to think of what Tater must have done. He is a vicious gangster. It is a safe bet that he lived by preying on those less lethal than himself. He appreciates the survival value of the group that operates about Chip, but our Gamesmaster suspicions see a showdown when the almost inevitable time comes that Tater tries to pull something that Chipper will not stand for.

These two cases sketch the process by which widely variant Player characters can evolve and interact in **Aftermath!** Initially, the Player who runs Chip decided to build a stereotypical redneck, charter member of the NRA, outdoorsman, aficionado of good homebrew. As Chip has developed through the scenarios, he has emerged as a rock solid survivor, staying alive as much by his cunning as by a tactician as by his accuracy with a rifle, and emerging

from the maelstrom of the Ruin with a deep-seated sense of decency that may get him killed but has saved an awful lot of lives along the way.

Tater has demonstrated a valuable lesson to the Players. He is an essentially sterile character, for all his ruthless survival talent, and the other Player characters, including some controlled by the same Player, trust him like lions trust jackals.



WHEN TIME IS OUT OF JOINT

While the main thrust of **Aftermath!** posits a campaign set 20-30 years after the Ruin, this is not a solid limit. We have experimented in the playtest with a "200 Years After" campaign. Lost is the sense of immediacy, and the simplicity of dealing with technological material when everyone is assumed to be moderately familiar with it. Some items, like firearms, will probably remain fairly common, although the Muzzle Loaders are likely to replace the modern weapons as they break down, and ammo runs out. But the products of industrial chemistry, the manufactured goods, and all the powered equipment, might slowly become the magic of the new primitives. While isolated enclaves may preserve the old knowledge, most communities will be in a state of neobarbarism, poised at the beginning of the climb back to civilization.

The characterizations in such campaigns may operate on a different level than those in the "First Generation" system.

You are Vinz of Twobomz Valley. The raid on the Horz People was a great success and Rik, Warchief of the Horned Riders, the finest warrior-clan in all the Bul people, called you "Brave Lance!" But in the midst of all the fighting, your foolish mind, that got you all those beatings from Rojur when he tried to pound the sagas into you, kept asking, "Why do we always fight the other tribes?"

"It is hard to ask such questions. All men know we fight to keep the land that is ours. We fight because all who are not of our blood, our lineage, are enemies. So has it always been, since the Blast came and made the World-As-It-Is. The Shaman say it, and they are wise and MUST be right!

"But when 'others' die, their blood is just the same as ours, although their skins are pale and mine is dark. Are they not then of our blood?"

"Why does my head hurt with asking things it cannot answer? I shall go upon a Traveling to the old, dead God-Cities, the places of Those-Who-Were-Before- The-Blast. Maybe there, I will find out why men must fight those who are strangers, and how it was in the Old Times. Surely THEY did not do such things."

"First Generation" campaigns lack something that is central to a setting in the farther future: legends.

The old legends are dead, buried in the rubble of the fallen civilization. The new legends are not yet formed, for the exploits of the Player-Characters are the proto-legends of the new world! This is the Age of Heroes which will fuel the campfire speech of the characters' great-grandchildren. Eminent scholars among their many-times-great-great-grandchildren will seek the truth behind their myth of Chi-per, the Bul People's God of Righteousness and Justice, He Who Strikes the Hearts and Eyes of the Evil Ones.

The potential richness of the campaign is so great in both types of setting that whatever decision the Gamesmaster makes, we feel that Players will find many and varied origins which they may ascribe to their characters, promoting a realistic diversity in the personalities in the campaign.

Vinz demonstrates one particular approach to what we have perceived as the most rewarding motivation in an *Aftermath!* campaign: the promise of new birth.

THE CHARACTERS & THE PROMISE

In most Role Playing Games, the Player Character is as much the misfit as he is the hero. He has forsaken growing old by his hearth for the life of one driven by some consuming desire; glory, an ideal or crusade, revenge, wealth, whatever. The classic definition of the hero includes the willing acceptance of "moiré," a Greek term roughly meaning "fate," "karma," or "doom." Young Achilles, offered a choice between a long, honorable, but uneventful life, and a short, glorious career, unhesitatingly chose the latter. In Homer's Iliad, he is the premier warrior of the Greeks, unstoppable in his rage, but foredoomed to die, his heroic invulnerability flawed at the "Achilles' Heel," where a poisoned arrow cuts short his glorious life.

The majority of Player Characters in *Aftermath!* have tended to undertake the heartbreaking task of supporting the rebuilding of a new civilization on the ashes of the old. Frail scientists have mastered fighting skills to preserve their knowledge for the young ones in their group. The "Kids" often show a superstitious awe of this "Old Knowledge," and the foundations for Vinz's "Shamen" are laid. Even if they die without fulfilling their dream, the Promise is passed on, to slumber in embryo, until a young warrior asks how "Others" can be so different if they bleed the same blood as he himself does.

There are the flawed heroes too, Player or Non-Player Characters who failed to learn the lesson of the Ruin. They husband the resources of technology to rule by force, by inspiring superstitious fear of the "magic" of science. Ruthlessly they turn their knowledge into new ways to destroy, rather than a means of rebuilding the results of their civilization's own propensity for such abuse.

Currently, these positions are held by Non-Player Characters in the campaign, usually at enmity with the Players. But given time and resources, there are Player Characters who would overthrow them only to replace them with tyrannies of their own.

Other types of campaign may pose their own obstacles to the Promise. It is not necessarily going to be by our own efforts that the Ruin strikes. We may have "help."

You are Bill Ericson. Once, ten years or ten lifetimes ago, you were a salesman with a wife, a daughter, a few dreams. But that was before the Martians came back, just as they did around the turn of the century, the way Wells' history tells it Only this time they won. The Earth is a shattered slave-planet, ruled by the octopoidal aliens and their human "Quislings." They took away all you had: a wife who burned in their heat ray three steps from the culvert that saved your life; a little girl who died asking for a drink of water that you didn't have, a little water to cool the fever born of the Mars-bred virus that was killing her. "If it is all I do before I join them, if there was any mercy left by God before he went away, just let me hurt the damned monsters once!" you cry.

There is nothing uplifting about Ericson's pain, It will torment the character as long as he cares to keep on living. But it is a driving force that can impel him to rise above the normal limits of human endeavor to drive the Martians from the planet, and echoed in the agony of spirit of a legion of those whose lives were blasted by the invasion, it welds a bond of action that is more frightening than all the polished drill of more conventional armies.

On the other side of the coin, imagine the potentials in playing a party of Quislings, out to extend the rule of their extraterrestrial masters. As with the despicable Tater, this choice may lead to things the Players might have preferred to leave undone. But again, the motivations and reactions of such characters provide a fascinating contrast for gainers who tire of the "Me Good Hero/Rotten Villain" roles that can stultify a Role Playing Game.

No matter what "period" of the Aftermath is chosen, and no matter what particular kind of Ruin caused it, the character's relationship to the Promise is

a central pole of his personality. He may embrace it, oppose it, even twist it to his own ends, but he cannot ignore it.

PRACTICAL CONSIDERATIONS

We think enough grist has been provided for the mill in terms of things to consider in building the character's personality. Now how about playing the game?

The general caveats to gainers in Book 1 speak to the overall task. Familiarize yourself with the rules enough to be able to flow in a fight, or any other common situation, without constant hesitation or rule-questioning. If the Players find something really unplayable, offensive, or just loathsome for indefinable reasons, they should let the Gamesmaster know it. If they want to expand on some ideas, the same applies.

Remember several things:

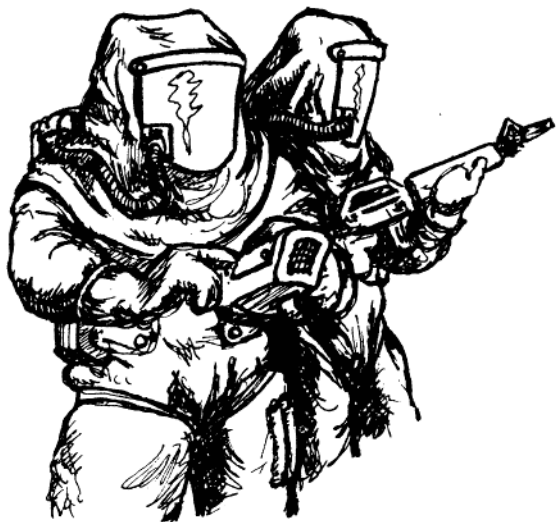
- Nobody is an expert in everything. It is blatantly unfair and rude to snarl at the Gamesmaster or another Player because he makes a slip in working with some area you have expertise in. Expect the same courtesy from them that you give.
- Likewise, no simulation can cover every detail of a complex process, or foresee all the eventualities of a situation. The rules here are our approach to the problem. Our system is designed to allow the maximum flexibility in adapting the probabilities to fit the vicissitudes of real life. Take advantage of this by really playing the role, thinking terms of real actions, rather than trying to break everything down into the abstract math of scores and points. If you want to be a hero (and in this hobby, who doesn't?) then, by the glory, be a hero! Take risks, accept the challenge of the short life but the glorious one. You may not die in bed, but really, did you want to?
- A good test of the quality of play in a campaign is this: if you wrote out a log of an adventure in decent narrative form, would it make good adventure fiction? In some scenarios, admittedly, everything seems to go stale. The encounters fall into a rut, nobody can seem to stay in character, rules get blown, tempers fray, nothing happens or everything happens wrong. Take a deep breath and chalk it up to experience. When it all goes right, just ask yourself this: how worried was I? When that last sword blow knocked me to within a hair of death, and then I had to beat that guard to the draw, did the gooseflesh rise, did the back of the neck chill at the vicarious breath of the dark angel? If you can say yes, even if only for a moment, then you should be enjoying the blazes out of things!

For the first, the very first little old character you build in *Aftermath!*, try this on for size.

Assume civilization collapses tomorrow. Decide what you would do. What Attributes would you cultivate and what would you let go? What new Skills would you acquire and what old ones would you increase? Develop the basic character design along these lines. Then ask yourself how would you survive? What attitudes would you adopt? Do you just watch out for Number One, or are you willing to give your heart to the Promise? Could you go Ghoulish in a final extremity, or would you kill cannibals on sight? Can you trust anyone? Or is the world forever a hostile environment? Put yourself in the character's shoes and play your story in the *Aftermath!*

We think you will be surprised by the intensity of identification this idealized self-character will get from you. The immediacy and impact of play is immeasurably increased, And if and when your luck runs out, or you make your last mistake, the impact of the loss is as thrilling as it is poignant. It hurts, but the final question is put to you: did he die accepting his "moira?" Was the hero true to the last? And if you have put yourself into the play wholeheartedly, then the answer you get back makes it all worthwhile.

The Gamesmaster's Book contains the various facets of different types of campaigns. He will inform you of the basic assumptions of your particular system. But without a creative response to equal his own labors, the thing will not take off. Meet him halfway, and the hours of enjoyment can be endless.



APENDIX 1

CHARACTER GENERATION CHECKLIST

- 1 Determine Age Group and note information due to it on CRS.
- 2 Determine actual age.
- 3 Determine psychological profile.
- 4 Distribute 15 + 2D6 points among the Talents.
- 5 Distribute 75 points among the Attributes.
- 6 Determine which Skills the character has for initial scores.
- 7 Determine the initial scores and Off-Hand Dexterity.
- 8 Apply the effects of Age, "Changed" status and Attribute Increase points.
- 9 Determine the character's Physical Characteristics.
- 10 Determine base clothing.
- 11 Determine the character's armor.
- 12 Determine the character's equipment.
- 13 Calculate Encumbrance Total.
- 14 Calculate Abilities, Basic Chance of Success scores and base Recognition Factor.
- 15 Inform the Gamesmaster that you are ready to play.

APPENDIX 2

SKILLS LIST

- 1 May have initial equipment
- 2 Always requires tools or weapons
- 3 Sometimes requires or uses tools or weapons
- 4 Has an "averaging" function

SKILL	COS T	INITIAL SCORE	FOR M
COMBAT SKILLS, HTH ^{1 2}			
Brawling ³	1	STR + DFT + Combative	3
Fencing	1	SPD + DFT + Combative	3
Flexible weapon	1	DFT + STR + Combative	3
Knife	1	DFT + SPD + Combative	3
Longsword	1	STR + DFT + Combative	3
Nunchaku	1	DFT + STR + Combative	3
Polearm	1	STR + DFT + Combative	3
Sai	1	DFT + STR + Combative	3
Single Weapon	1	STR + DFT + Combative	3
Tonfa	1	DFT + STR + Combative	3
Two Weapon	1	STR + DFT + Combative	3
Unarmed Combat	1	DFT + SPD + Combative	3
Weapon and Shield	1	STR + DFT + Combative	3
COMBAT SKILLS, MUSCLE POWERED MISSILE WEAPONS ^{1 2}			
Archery	2	DFT + WT + Combative	3
Blowgun	2	HLH + WT + Combative	3
Bola	2	DFT + WT + Combative	3
Crossbow	2	DFT + WT + Combative	3
Sling	2	DFT + WT + Combative	3
Slingshot	2	DFT + WT + Combative	3
Throwing	2	DFT + WT + Combative	3
COMBAT SKILLS, SMALL ARMS ^{1 2}			
Pistol, Modern	3	DFT + WT + Combative	3
Pistol, Primitive	3	DFT + WT + Combative	3
Rifle, Modern	3	DFT + WT + Combative	3
Rifle, Primitive	3	DFT + WT + Combative	3
COMBAT SKILLS, SUPPORT WEAPONS ²			
Autoweapon ⁴	4	DFT + WT + Combative	1
Breech Loading Artillery	4	DFT + WT + Combative	1
Direct Fire Cannon	4	DFT + WT + Combative	1
Grenade Launcher ⁴	4	DFT + WT + Combative	1

SKILL	COS T	INITIAL SCORE	FOR M
Missile Launcher	4	DFT + WT + Combative	1
Mortar	4	DFT + WT + Combative	1
Muzzle Loading Artillery	4	DFT + WT + Combative	1
Primitive Siege Engines	4	DFT + WT + Combative	1
NON-TECHNICAL, PHYSICAL SKILLS			
Beast Riding ⁴	1	WL + DFT + Nature	1
Bicycle Riding ^{2 4}	1	DFT + STR + Mechanical	1
Boating ³	1	STR + WT + Natural	1
Climbing ³	1	STR + DFT + Natural	1
Fishing ³ (Trap/Hook)	1	DFT + WT + Natural	2
Gambling ^{1 3}	1	DFT + WT + Charismatic	1
Handicraft (specify) ³	1	DFT + WT + Talent	1
Seamanship ⁴	1	HLH + DFT + Natural	1
Survival (specify) ³	1	HLH + WL + Natural	1
Swimming ⁴	1	HLH + STR + Natural	1
Tracking (Urban/Rural)	1	WT + Natural + Natural	2
Hunting ³ (Trap/Shoot)	1	DFT + WT + Natural	2
Search (Urban/Rural)	1	WT + WT + Natural	2
Stealth (Urban/Rural)	1	DFT + WT + Natural	2
NON-TECHNICAL, KNOWLEDGES			
Advanced Farming ² (Dirt Farming)	2	WT + DFT + Natural	1
Bowyer ²	2	DFT + WT + Mechanical	1
Carpentry ²	1	DFT + WT + Mechanical	1
Commerce ⁴	2	WL + WT + Charismatic	1
Culture (Pre/Post Ruin)	0.5	WT + Communicative + Esthetic	2
Dirt Farming ²	1	HLH + DFT + Natural	1
Fermentation ²	2	WT + Natural + Natural	1
Foreign Language (specify) (Spoken)	1	WT + WL + Communicative	1
Interrogation ³	3	WL + WT + Charismatic	1
Leatherworking ²	2	DFT + WT + Esthetic	1
Literacy (specify)	1	WT + WT + Communicative	1
Masonry ³	1	DFT + DFT + Mechanical	1
Nutritionist	2	WT + Scientific + Natural	1
Repair, Muscle Powered Vehicles (Carpentry)	2	DFT + WT + Mechanical	1
Salvage Food (Nutritionist)	2	WT + DFT + Scientific	1
Tactics	2	WT + Combative + Comm	1
Tailor ²	1	DFT + DFT + Esthetic	1
Weaver/Spinner ²	1	DFT + WT + Esthetic	1
TECHNICAL, PHYSICAL SKILLS			
Automobile Driving ² (Technology Use)	2	DFT + WT + Mechanical	1
Basic Research ³	1	WT + WT + Scientific	1
Heavy Equipment Driving ² (Technology Use)	2	DFT + WT + Mechanical	1
Lab Technique ² (Technology Use)	1	DFT + WT + Mechanical	1
Lockpicking ^{1 2}	2	DFT + WT + Mechanical	1
Magnalock Penetration ^{1 2} (Technology Use)	2	DFT + WT + Mechanical	1
Motorcycle Driving ^{2 4} (Technology Use)	2	DFT + WT + Mechanical	1
Powerboat Pilot ² (Technology Use)	2	DFT + WT + Mechanical	1
Technology Use ²	1	DFT + WT + Mechanical	1
TECHNICAL, KNOWLEDGES			
Aerial Recon Interpretation ³ (Technology Use and Basic Research and Mathematics)	2	WT + Scientific + Esthetic	1
Advanced Medical ³ (Lab Technique and First Aid)	3	WT + DFT + Scientific	1
Architecture ³ (Technology Use and Basic Research and Mathematics)	3	WT + Scientific + Mechanical	1
Armorer ² (Blacksmithing for metal/Plastics for Forming plastic)	3	DFT + WT + Mechanical	1
Automobile Mechanic ² (Technology Use)	3	DFT + WT + Mechanical	1
Blacksmithing ² (Technology Use)	2	DFT + WT + Mechanical	1
Botany ³ (Pre-/Post-Ruin)	2	WT + Scientific + Natural	2
Chemistry ³	2	WT + Scientific + Mechanical	1
Computer Science ³ (Programming/ System Design) (Technology Use)	2	WT + Scientific + Mechanical	2
Decontamination ³ (Biological & Chemical/ Radioactive) (Lab Technique)	3	WT + DFT + Scientific	2
Defusing Explosives ^{3 4} (Technology Use)	2	DFT + WT + Mechanical	1
Demolitions ^{2 4} (Technology Use)	2	DFT + WT + Mechanical	1
Distillation ² (Technology Use)	2	WT + Mechanical + Scientific	1
Electrician ³ (Technology Use)	2	DFT + WT + Mechanical	1
Encryption (Basic Research)	2	WT + Scientific + Esthetic	1
Firearms Repair, Modern ²	1	DFT + WT + Mechanical	1

(Firearms Repair, Primitive & Machining)			
Firearms Repair, Primitive ² (Blacksmithing or Machining)	2	DFT + WT + Mechanical	1
First Aid ¹³	2	WT + DFT + Scientific	1
Handloading ² (Technology Use)	2	DFT + WT + Mechanical	1
Internal Combustion Engine ³ (Physics & Mathematics)	3	WT Scientific + Mechanical	1
Machining ² (Technology Use)	2	DFT + WT + Mechanical	1
Marine Mechanic ² (Technology Use)	2	DFT + WT + Mechanical	1
Mathematics ³	2	WT + Scientific + Comm	1
Mechanically Generated Power ³ (Technology Use & Physics)	2	WT + Mechanical + Scientific	1
Operational Command (Tactics)	2	WT + Combative + Comm	1

SKILL	COS	INITIAL SCORE	FOR
	T		M
Pathology ³ (Chemistry & Advanced Medical)	3	WT + WT + Scientific	1
Pharmacy ³ (Chemistry & Lab Technique)	3	WT + DFT + Scientific	1
Physics ³ (Mathematics)	2	WT Mechaical + Scientific	1
Plastics Forming ² (Technology Use)	2	DFT + WT + Mechanical	1
Radio Communications ³ (Technology Use)	2	WT + DFT + Mechanical	1
Simple Explosives ³ (Chemistry & Lab Technique)	2	WT + DFT + Mechanical	1
Strategic Command (Operational Command)	2	WT + Scientific + Combative	1
Telegraphy ³ (Technology Use)	2	DFT + WT + Mechanical	1
Telephone Communications ³ (Technology Use)	3	WT + DFT + Mechanical	1
Television Communications ³ (Electrician)	3	WT + DFT + Mechanical	1
Therapy ³ (Advanced Medical)	3	WT + DFT + Scientific	1
Weaponsmithing ² (Blacksmithing, Machining or Carpentry—according to material)	3	DFT + WT + Mechanical	1
Zoology ³ (Pre-/Post-Ruin)	2	WT + Scientific + Natural	2

HIGH TECHNOLOGY SKILLS²
(All require Technological Use)

HIGH TECHNOLOGY SKILLS, PHYSICAL SKILLS			
High Technology Use ³	1	DFT + Wt + Mechanical	1
Pilot, Fixed Wing	3	DFT + WT + Mechanical	1
Pilot, Submersible	3	DFT + WT + Mechanical	1
Pilot, Rotary Wind	3	DFT + WT + Mechanical	1
Pilot, Spacecraft (Zero G Training & High Technology Use)	4	DFT + WT + Mechanical	1
Pilot, Variable Wing	4	DFT + WT + Mechanical	1
Safecracking ¹³	2	DFT + WT + Mechanical	1
SCUBA Diving ⁴	2	DFT + WT + Mechanical	1
Zero G Training ⁴	3	SPD + DFT + Natural	1
Aviation Mechanic (High Technology Use)	3	DFT + WT + Mechanical	1

HIGH TECHNOLOGY SKILLS, KNOWLEDGES

Complex Explosives (Simple Explosives)	2	DFT + WT + Mechanical	1
Computer Design (Computer Science & Mathematics & High Technology Use)	4	WT + Scientific + Mechanical	1
ECM Operation ² (High Technology Use)	2	DFT + WT + Mechanical	1
Laser Technology (High Technology Use)	4	WT + Scientific + Mechanical	1
Plastic Synthesisization ² (Chemistry & Lab Technique)	3	WT + Scientific + Mechanical	1
Power Generation Electrical (Physics, Electrician & Mechanically Generated)	3	WT + Scientific + Mechanical	1
Power Generation Nuclear (PG., Electrical)	4	WT + Scientific + Mechanical	1
Power Generation Solar (Physics & High Technology Use)	3	WT + Scientific + Mechanical	1
Production of Fuel ² Hydride (Chemistry & Lab Technique)	4	WT + Scientific + Mechanical	1
Production of Fuel ² Petroleum (Chemistry & Lab Technique)	4	WT + Scientific + Mechanical	1

APPENDIX 3

ARMOR MATERIALS LIST

MATERIAL	CODE	FORMA	ENC	ARMO	BARTER
PLASTIC		T	/	R	VALUE
			LOC	VALU	PER
				E	LOCATIO
					N
Plasteel	PS	R	.04	15	30
Armorplast	AM	R	.036	13	26
Plated Plasteel	LP-PS	SR	.052	13	26
Densiplast	DP	R	.03	11	22
Plated Armorplast	LP-AM	SR	.046	11	22
Mesh Plasteel	M-PS	FH	.06	11	22
Macroplast	MP	R	.024	9	14
Plated Densiplast	LP-DP	SR	.04	9	14
Mesh Armorplast	M-AM	FH	.054	9	14
Plated Macroplast	LP-MP	SR	.032	8	12
Mesh Densiplast	M-DP	FH	.046	8	12
Plastex	PX	FQ	.02	6	9
Mesh Macroplast	M-MP	FH	.036	6	9
Synthiplast	SY	EQ	.01	5	5
Plastihide	PH	EQ	.002	4	4
Plasticloth	PC	EQ	.001	3	3
Heavy Plasticsheet	HP	EQ	.001	2	2
Light Plasticsheet	LP	EQ	.000	1	1
			5		
NON-METTALLIC					
Natural Armor Leather	AL	FH	.02	5	3
Hardened Heavy Leather	H-HL	FH	.008	5	3
Heavy Leather	HL	FS	.008	4	2
Scaled Leather	SL	FH	.008	4	2
Natural Armor Hide	AH	FS	.02	4	2
Light Leather	LL	FS	.004	3	2
Heavy Hide	HH	FS	.008	3	2
Scaled Hide	SH	FS	.008	3	2
Heavy Cloth	HC	FQ	.001	2	1
Light Hide	LH	FS	.004	2	1
Light Cloth	LC	FQ	.000	1	0.5
			5		
METALLIC					
Carballoy	CA	R	.072	14	21
Plated Carballoy	LP-CA	SR	.08	13	20
Macrosteel	MS	R	.07	12	18
Mesh Carballoy	M-CA	FH	.09	11	17
High Quality Steel	QS	R	.07	10	15
Plated Macrosteel	LP-MS	SR	.092	10	15
Steel	SP	R	.07	9	9
Plated High Quality Steel	LP-QS	SR	.092	9	9
Mesh Macrosteel	M-MS	FH	.104	9	9
Light Ferrous Metal	EP	R	.06	8	8
Plated Steel	LP-SP	SR	.092	8	8
Aluminum Alloy	AA	R	.04	7	7
Plated Eerrous Metal	LP-EP	SR	.078	7	7
Mesh High Quality Steel	M-QS	FH	.104	7	7
Bronze	BP	R	.06	6	6
Plated Aluminum Alloy	LP-AA	SR	.052	6	6
Mesh Steel	M-SP	FH	.104	6	6
Mesh Eerrous Metal	M-EP	FH	.09	6	6
Plated Bronze	LP-BP	SR	.078	5	5
Mesh Aluminum Alloy	M-AA	FH	.06	5	5
Mesh Bronze	M-BP	FH	.09	4	4

Ballistic Cloth

This material presents an effective barrier to bullets but still does not perform as well against hand held weapons. To determine the Ballistic Cloth's Armor Value when struck by a hand-held weapon, divide the Barrier Factor by 10 and round to the nearest whole number. If the character struck is wearing other armor that has a higher Armor Value than the Cloth, this other armor will be used to subtract from the Damage Potential.

MATERIAL	CODE	FORMAT	ENC/LOC	ARMOR	BARTER
				VALUE/	VALUE
				BARRIER	PER
				FACTOR	LOCATION
Empilon	BCS	FQ	.001	1/5	10
Fabulon	BC10	FQ	.002	1/10	15
Armorlon	BC20	FH	.01	2/20	25
Hercuweave	BC35	FH	.025	4/35	50

APPENDIX 4 WEAPONS LISTING

Each of the weapons listed is presented in an abbreviated format to save space. The meaning of each statistic and the abbreviations used are noted below. Some weapons will have additional notes regarding their nature or use. These will have footnotes to be found at the end of the listing.

Weapon: The name of the weapon is listed here.

Skills: The Skill(s) for using the weapon. Any weapon usable by Single Weapon Combat Skill may be used with Two Weapon or Weapon and Shield Combat Skills. Abbreviations used are:

Single Weapon - SW	Longsword - LS
Knife - Kn	Brawling - Br
Throwing - Th	Nunchaku - Na
Polearm - PI	Unarmed Combat - UC
Flexible Weapon - EW	

Utility: This is the utility number value of the weapon.

STR: This is the Strength Rating of the weapon.

Hand: This is the number of hands normally used to control the weapon. 1 is a weapon used in one hand, 2 is a weapon requiring two hands to use properly, and 1½ is a weapon that may be used with one or two hands.

Sec.: This is an indication of whether the weapon allows a second strike or a secondary attack. N means none is allowed, S means a secondary attack is

allowed under the usual rules for such, and T means a second attack is allowed in a Single Action.

Surv.: This is the survival value of the weapon if the "Clash of weapons" Option is in use.

Format: This details whether or not the weapon may be used to thrust. T means thrust only, S means a normal striking attack, and E means an Entangle attack allowed.

Length: This is the length category of the weapon. It will affect the Zone of Influence, the Strength Group used for the Effect Die and other things as described in Detailed Action Time.

S-Short
A-Average
L-Long
XL-Extra Long

ENC: This is the Encumbrance value of the weapon.

WDM: This is the Weapon Damage Multiplier of the weapon. It is followed by a letter indicating the kind of damage done.

L is all Lethal
C is 75% Subdual and 25% Lethal
D is 50% Subdual and 50% Lethal

WEAPON	SKILLS	UTILITY	STR	HAND	SEC.	SURV.	FORMAT	LENGTH	ENC	WDM	BARTER VALUE
Ax, fire ⁵	SW, PI	2	3	1½	S	6	S	L	1	1.8L	5
Ax, hatchet ^{5,6}	SW, Th	1	1	1	N	4	S	S	.4	1.1L	
Ax, hand ^{5,13}	SW	2	2	1	N	5	S	A	.6	1.3L	4
Ax, lumber ⁶	PI	2	4	2	N	7	S	XL	1.1	1.8L	
Baseball bat ⁵	SW, PI	1	2	1½	N	4	S	A	0.9	1.3C	-
Bat with nails ⁵	SW, PI	1	2	1½	N	4	S	A	1	1.5B	-
Bayonet, short ^{4,13}	Kn	2	1	1	S	9	T	S	0.3	1.3L	7
Bayonet, long ⁴	Kn	2	2	1	N	10	S, T	A	0.4	1.5L	B
Belt Buckle ^{5,12}	EW	1	1	1	N	3	E, S	A	-	1.1B	-
Brass Knuckles ^{5,13}	Br	3	1	1	-	6	S	S	0.1	1.3B	2
Chain ^{6,13}	EW	2	3	1	N	10	S, E	A	1	1.5B	
Club ^{5,13}	SW, Th	1	1	1	S	3	S	S	0.5	1.1(1)C	
Cudgel ^{5,13}	SW	2	2	1½	N	5	A	S	0.7	2C	
Hammer ^{5,13}	SW	1	2	1	N	4	S	S	0.5	1.2C	2
Knife, belt ^{5,12}	Kn, Th	1	1	1	S	B	S, T	S	0.3	1L	2
Knife, bowie ^{5,13}	Kn, Th	2	2	1	S	9	S, T	S	0.3	1.3(1.5)L	5
Knife, jack ^{5,12}	Kn, Th	0	1	1	T	7	S, T	S	0.1	1L	1
Knife, Kukri ^{5,13}	Kn, Th	2	2	1	S	9	S	S	0.3	1.5(1.3)L	5
Knife, switchblade ^{5,12}	Kn, Th	1	1	1	T	7	S, T	S	0.2	1.2L	3
Knife, throwing ^{5,13}	Th	2	1	1	-	-	-	-	0.2	1.5L	5
Knife, trench ^{3,6,7,13}	Kn	3	2	1	S	9	ST	S	0.4	1.4L	6
Knife-spear ^{5,13}	PI	2	1	2	S	2	S	T	XL	1.1	1.5L
Nunchaku, wood ⁵	Na, Fw	3	2	1	S	3	S	S	0.4	1.5C	3
Nunchaku, metal ⁶	Na, Fw	4	3	1	S	B	S	S	0.6	2C	5
Pipe, Light ⁵	SW	1	2	1	N	7	S	A	1	1.6C	1
Pipe, heavy ⁶	PI	1	3	2	S	8	S	L	1.5	2C	2
Pick ax ⁶	SW	2	3	1	N	9	S	A	1.5	2C	2
Pistol butt	PI	2	4	2	S	10	S	L	1.7	2.3C	3
Pitchfork ^{5,13}	PI	2	2	2	N	5	T	L	1.1	1.5L	5
Rifle butt	Br, SW	-	2	1	N	-	S	S	-	1+(ENC of Gun)C	
Rope											
Sai ⁸	Sai	3	3	1	S	9	S, T	S	0.4	1.7C/1.2L	5
Sap	Special	1	2	1	N	2	S	S	0.3	special	
Shuriken ^{6,10}	Th	3	2	1	-	-	-	-	0.2	1.6L	B
Sledge hammer ⁵	SW, PI	2	3	1½	N	6	S	L	1.5	2B	4
Staff, crude ^{5,13}	PI	1	3	2	S	3	S	XL	1	1.8C	
Staff, hardened ^{5,13}	PI	2	3	2	S	4	S, T	XL	1	2C	2
Straight razor ^{5,12}	Kn	1	1	1	T	3	S	S	0.2	1.2L	1
Sword, ceremonial ^{3,5,13}	SW	2	2	1	N	B	S, T	A	0.6	1.7L	9
Sword, machete ⁶	SW	2	2	1	N	10	S	A	1	1.8L	9
Sword, saber ³	SW	3	2	1	N	10	S, T	A	0.9	1.8L	9
Sword, trench ^{3,6,7}	SW	3	2	1	N	10	S, T	A	0.8	1.7L	9
Tonfa ⁶	Tonfa	4	2	1	S	3	S	S	0.6	1.3C	6
Whips, Rope, hemp	FW	1	2	"2"	N	6	9	E	XL	1	-
Whips, Rope, nylon	FW	2	2	"2"	N	10	9	E	XL	0.8	-
Whips, Rope, cable	FW	3	3	"2"	N	15	9	S,E	L	1.2	0.8
Whips, Rope, weighted version	FW	+1	+1	"2"	N	-	+S	-	+0.3	+1	+1
Whip, leather ¹²	FW	2	2	1	N	4	S, E	XL	0.6	1.2	4
Whip, steel tip version ¹³	FW	3	2	1	N	4	S, E	XL	0.6	1.5	5
Whip, cable ¹²	FW	3	3	1	N	10	S, E	L	0.8	1.7	6

WEAPON	SKILLS	UTILITY	STR	HAND	SEC.	SURV.	FORMAT	LENGTH	ENC	WDM	BARTER VALUE	
IMPROVISED WEAPONS (Any improvised weapons may be thrown)												
Bottle, whole ^{5 12}	Br	1	1	1	N	1	S	S	0.4	1.2	1	
Bottle, broken ^{5 12}	Kn, Br	1	1	1	S	1	ST	S	0.3	1L	-	
Chair, small ⁵	Br	-	2	2	N	3	S	A	2	2C	-	
Chair, medium ⁶	Br	-	3	2	N	4	S	A	3	2.3C	-	
Chair, large ⁶	Br	-	4	2	N	5	S	L	4.5	3C	-	
Table, very small ⁵	Br	-	2	2	N	3	S	A	2	2C	-	
Table, small ⁶	Br	-	4	2	N	5	S	XL	4	2C	-	
Table, medium ⁶	Br	-	6	2	N	8	S	XL	7	2.5C	-	
Table, large ⁸	Br	-	7	2	N	S	XL	15	3C	-	-	
REPRODUCTION WEAPONS												
Ax, Battle	Sw, PI	2	4	1½	Si	8	S,T	L	1.2	2L	10	
Dagger ^{6 13}	Kn	2	2	1	N	9	S,T	S	0.5	1.4L	7	
Main Gauche ^{6 13}	Kn	3	2	1	N	9	S,T	S	0.7	1.4L	8	
Flail, Wood ^{5 3}	Fw	3	3	2	N	6	S	XL	1.2	2.2C	4	
Flail, Metal	FW	3	4	2	N	11	S	XL	1.5	2.4C	6	
Mace, Ball	Sw	2	2	1	N	8	S	A	0.9	1.7C	4	
Mace, Spiked	Sw	2	2	1	N	8	S	A	0.9	1.9B	6	
Maul, Ball	Sw, PI	2	3	1½	S	19	S	L	1.4	2C	4	
Maul, Spiked	SW, PI	2	3	1½	S	19	S	L	1.4	2.2B	6	
Polearm, Halberd	PI	3	4	2	S	9	S,T	XL	1.6	2.5L	8	
Polearm, Glaive	PI	3	4	2	S	9	S	XL	1.5	2.5L	7	
Spear, Boar	PI	2	2	2	S	S	8	T	XL	1.2	1.5L	5
Spear, Trident ¹³	PI	2	3	2	S	S	8	T	1.3	1.5L	11	8
Spear, Yari	PI	2	3	2	S	S	8	S,T	XL	1.2	1.6L	6
Sword, Broad	SW	2	3	1	N	10	S,T	A	1	2L	10	
Sword, Great	LS	3	5	2	N	12	S,T	XL	2	3L	15	
Sword, Katana	LS, SW	3	3	1½	S	11	S,T	L	1.2	2.5L	14	
Sword, Long	LS, SW	2	4	1½	S	11	ST	L	1.5	2.5L	12	
Sword, Rapier	SW	2	1	1	N	90	S,T	A	0.9	1.7L	9	
Sword, Tulwar	SW	2	2	1	N	10	ST 8	A	0.9	1.9L	10	

¹ Second strike is only available when using Polearm Skill.

² May also be used with a shield but no second strike is allowed.

³ Has a hand guard with AV = 4, SR.

⁴ used on rifle will add .3 to WDM but will not add to ENC of rifle. Polearm Skill required.

⁵ Weapon must check for breaking if used against Rigid armor greater than Av6 or Semi-rigid or Flexible, Hard armor greater than Av8. A die roll greater than or equal to the Survival Value on 1D20 indicates that the weapon has broken. Any damage done by that attack will be halved, as the final adjustment to the Damage Potential.

⁶ As note 5 but armor Values requiring check are 8 and 10 respectively.

⁷ Hand guard functions as Brass Knuckles.

⁸ Weapon subtracts .5 from its WDM when thrusting.

⁹ Survival Value is the Barrier which must be cut to destroy weapon.

¹⁰ characters may throw more than one at a time. Maximum number is equal to the character's Deftness Group. Each one thrown will receive a negative modification to the BCS equal to the number being thrown if it is more than 1. Each is rolled for separately.

¹² Maximum Armor Value that the weapon can penetrate is 2 times user's Strength Group.

¹³ Maximum Armor Value that the weapon can penetrate is 4 times user's Strength Group.

APPENDIX 5 SHIELDS

Shields may be made out of almost any material that a man can get his hands on. For convenience we list a variety of shields in the table below. FACINGS may be added to wooden shields. They add to the Barrier Effect (minimum and overall), ENC value and Barter Point value. If a player or the Gamesmaster finds he wishes to have a character who uses a shield not on the list, it may be constructed.

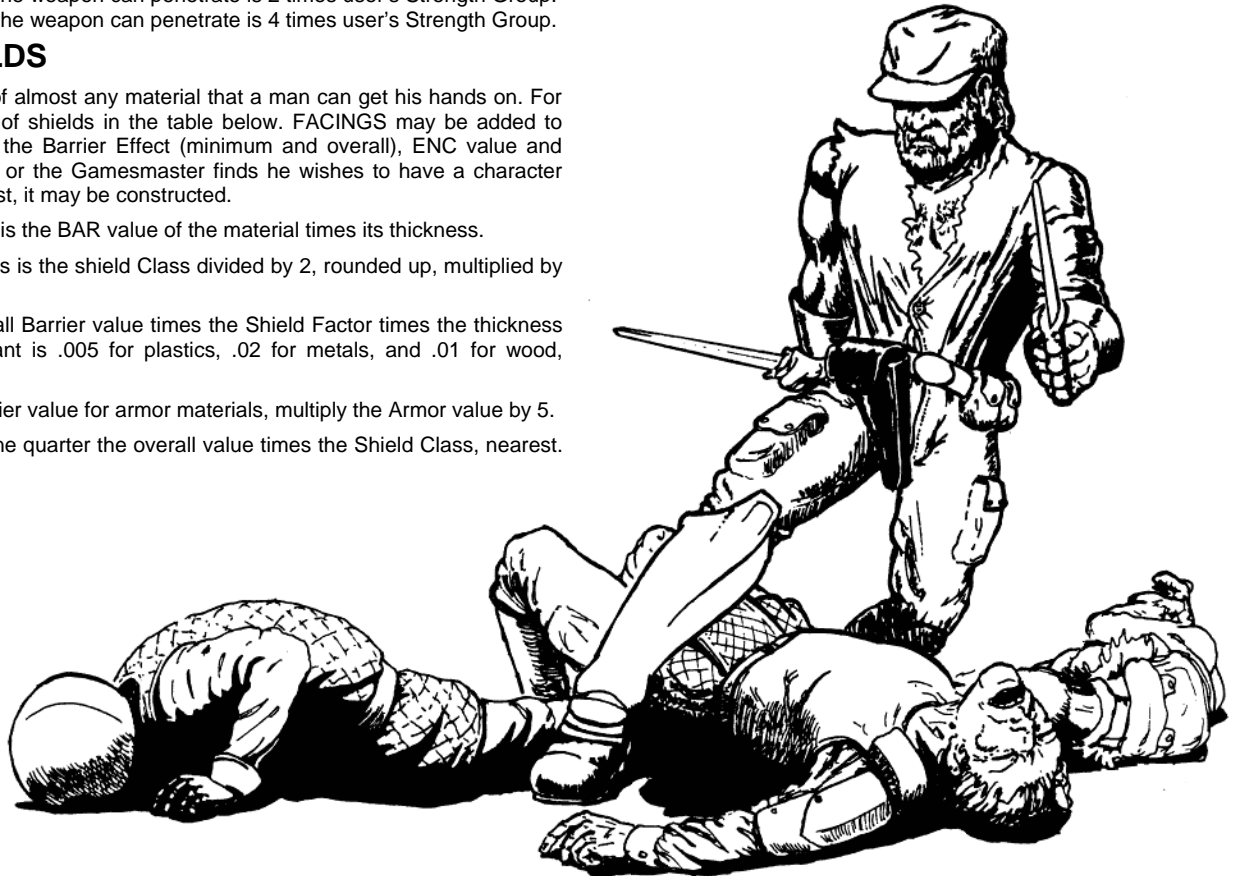
The minimum Barrier value is the BAR value of the material times its thickness.

The overall Barrier thickness is the shield Class divided by 2, rounded up, multiplied by the minimum Barrier value.

The ENC value is the overall Barrier value times the Shield Factor times the thickness times a constant. This constant is .005 for plastics, .02 for metals, and .01 for wood, wicker and leather.

To get an approximate Barrier value for armor materials, multiply the Armor value by 5.

The Barter Point value is one quarter the overall value times the Shield Class, nearest. Plastics are doubled, Wicker is halved.



MATERIAL	CLASS	OVERALL BARRIER	ENC	BARRIER POINT VALUE
½" Wicker	1	7	0.16	1
½" Wicker	2	7	0.4	2
½" Wicker	3	10	0.76	4
½" Wicker	4	10	1.12	5
½" Wicker	5	15	1.88	10
¼" Plywood ²	1	5	0.06	1
¼" Plywood	2	5	0.12	3
¼" Plywood	3	10	0.50	8
¼" Plywood	4	10	1.76	10
¼" Plywood	5	15	1.88	14
½" Plywood ²	1	10	0.2	2
½" Plywood	2	10	0.26	5
½" Plywood	3	20	1.00	15
½" Plywood	4	20	3.00	20
½" Plywood	5	30	5.50	38
¾" Plywood ²	1	15	0.46	4
¾" Plywood	2	15	1.12	8
¾" Plywood	3	30	2.26	23
¾" Plywood	4	30	3.38	30
¾" Plywood	5	45	5.62	56
¼" Bronze	1	8	0.16	2
¼" Bronze	2	8	0.40	4
¼" Bronze	3	16	1.60	12
¼" Bronze	4	16	2.40	16
¼" Iron 1	1	10	0.20	3
¼" Iron 2	2	10	0.50	5
¼" Iron 3	20	2.00	15	
Plastic Police Shield 4	2	11	0.14	11
	4	22	0.82	44
Streetsign	2	6	0.18	3
	3	12	0.80	9
Trash can lid				
Metal	2	4	0.1	2
Plastic	2	3	0.02	3
Furniture	varies	varies	varies	by piece
Small table as class 3 ¾" Plywood				
Stool as Class 2 ½" Plywood				
Small chair as Class 2 ¾" Plywood				
FACINGS ²				
¼" Leather	1	5	0.08	1
¼" Leather	2	5	0.12	3
¼" Leather	3	10	0.50	8
¼" Leather	4	10	0.76	10
¼" Leather	5	15	1.88	19
1/10" Bronze	1	3	0.2	1
1/10" Bronze	2	3	0.6	2
1/10" Bronze	3	6	0.24	5
1/10" Bronze	4	6	0.36	6
1/10" Bronze	5	9	0.9	11
1/10" Iron	1	4	0.4	2
1/10" Iron	2	4	0.08	2
1/10" Iron	3	8	0.32	6
1/10" Iron	4	8	0.48	8
1/10" Iron	5	12	1.20	15

¹ wicker will ignite if the Strength Rating of the fire or less is rolled on 1D6.

² wood will ignite if the Strength Rating of the fire or less is rolled on 1D10.

Leather will ignite if the Strength Rating of the fire or less is rolled on 1D20. These may be totally (60% chance) or partially clear.

APPENDIX 6 FIREARM FEATURES

In the firearm rules and the Gun List we have discussed Features here and there. When a Feature potentially affected a specific rule, it was spelled out on the spot. But the immense creativity of firearms designers has spawned numerous remarkable devices and processes in their search for increased lethality. There are some that require a section of their own.

About Sights

If I can see it, I can hit it. This boast is often true for the shooter who has a decent set of sights on his gun. There are two kinds of sights: Iron Sights, referring to non-magnifying sights, used to indicate the precise direction of the gun's line-of-fire, and Telescopic Sights. There are also special sights permitting fire in the dark by enhancing low light levels (Starlight Scopes) or by using invisible frequencies in the spectrum, the Infrared Scope.

Iron Sights: As the name indicates, these are metal sights, usually an open notch at the back of the gun, and a corresponding bead, barleycorn, or other convex form at the front of the barrel. Ordinary Iron Sights are always present on a gun unless specifically noted otherwise in its Spec Sheet. They permit Sighted Fire as described in the firearms rules (Sighting Modifier).

Click Sights: Guns can be fitted with adjustable "Click" sights, set with a micrometer knob to compensate for windage and elevation. Such sights add +1 to the firer's BCS when using Sighted Fire.

Peep Sights: These sights use a small bead centered in the sighting aperture, to be lined up on the target's body. This will increase the Aim of the shot (Hit Location alteration) by +1, even if the firer has no Aim normally.

Match Sights: These precision instruments combine the features of Click and Peep Sights, allowing +1 to the BCS and to Aim when in Sighted Fire.

LED Sights: These can be used as normal Iron Sights during the day, and in light levels of Dim or better. If the light level is Poor or Dark, they have another effect. The sight consists of a small LED (Light Emitting Diode) serving as the sight element on the front of the gun barrel. When firing from Full Stance in Poor Light the user is only penalized as if for Dim Light. In Full Darkness, he is only penalized as if for Poor Light. If he wishes, he may assume normal. Sighted Fire and receives all the benefits normally accruing to such an Action. This is not permitted to Characters in bad light with normal Iron Sights. The LED Sight is powered for 1 year by an E-1.

Laser Sight: This device is an oblong box, about 3 wide by 8" long by 1" thick (75mm x 200mm x 25mm). It will operate for 10 "shots" on 1 Charge of electricity. It can be charged with either an E-1 or E-5 and has an ENC value of .5. The Laser Sight projects a low power laser beam which appears as a bright red dot when it hits a solid object, and this dot is visible at ranges of up to 1500 meters.

Used with a non-automatic weapon it allows, in essence, two BCS rolls for the first shot in the firer's Action. The basis of aiming of the Laser Sight is the DFT AST of the firer, subject to no modifiers of any kind. If this is made the 1st shot fired will automatically hit. If firing an automatic weapon with the Laser Sight, the first burst will hit if the AST is made. The firer must declare that he is using the Sight at the beginning of this Action, and will resolve the DFT AST when he resolved his first shot. If the Sight misses (i.e. AST fails) he still can fire normally at the target if he wishes.

The laser dot is not visible in Good Light unless the user is wearing special goggles. It is also not as useful in thick smoke or fog, its effective range being cut to 500 meters.

Starlight Scope: These are Telescopic Sights with an extra bonus. They can utilize the lowest light levels to allow the user to see without difficulty, unless the firer is in pitch blackness (say a completely lightless cave or basement) he will have no penalty to sighted fire using this device.

Infrared scope: Similar to the Starlight Scope, but this sight uses the invisible frequency of the infrared spectrum (heat waves) to "see," boosting them electronically into visible images. These are tricky to adjudicate. Any contrasting heat fields will stand out in high contrast: a man against the sky, or a building, for instance. On the other hand, a few meters of forest cover will effectively jam the scope's pickup. As a rule of thumb, I-R can locate living targets in a non-vegetable background no matter what the light level is. A fire or hot spotlight will tend to be as distracting to the I-R scope as it is to the naked eye, if the target is backed by it.

In general, think of objects emitting light in proportion to their body heat. If they are cold (concrete at night, for example) they are very dark. If animal life, they are slightly luminous. If very hot, they are very bright. Compare this image to the background of the target, and if they contrast by very much, then a clear sighting has been obtained.

As long as these conditions are satisfied, fire using an I-R scope is pretty much exempt from penalties for less-than-Good Light.

Telescopic Sights: These are thoroughly described in the Firearms rules and the text at the end of the Gun List.

Features Described In the Firearm Rules

In order of appearance:

Match Weapons: Add 50% to the distance of their Range Steps.

Hair Trigger: Allow an addition of 1 Shot/Action to maximum allowable Rate of Fire. Unless this is on a gun with an adjustable trigger, the presence of a Hair Trigger is always in force. The Gamesmaster should enforce a SPD AST upon Characters with Hair Trigger weapons who start to set up a shot and then try to abort it. If they miss the AST they must fire.

Auto-extractor: weapons with an Auto-extractor level will clear jams at the end of the firing Action in which they occurred. A separate Action to clear the jam is not required.

Recoil Reduction: Ranging from a recoil pad on the buttplate of a Long Gun to fancy venting systems and brakes, Recoil Reduction systems reduce the penalty (if any) due to Recoil by their rated factor. A Recoil Pad always has Recoil Reduction of 1. Other systems are given a Rating in the Feature notes on their Spec Sheets.

Tunable Guns: These firearms permit the user to adjust them to his personal anatomical and behavioral needs as a shooter. It requires 1 week of practice as if studying the Firearm, expending the minimum amount of ammo needed to learn without a Hindrance, to tune the gun. No skill points are acquired when this is done. At the end of that week, the gun will increase the user's BCS by +1, and reduce any other user's by 2, unless re-tuned to him.

Handed Guns: In the rules, we refer only to Pistols but there are also "handed" Long Guns. Using a handed weapon in the correct hand gives +1 to BCS using a handed gun in the other reduces BCS by 2. If the gun is also tunable, it must be of the same "handedness" as the user.

If a handed gun is found there is a 60% chance it will be a right hander's weapon and a 40% chance of a southpaw's shooting iron.

Swivel Swing: This allows a Long Gun to be braced using the sling strap in the same Action the Firer assumes Stance. Normally, this requires a separate Action.

Hi-Power Firearms: Or more formally, High Power Firearms. These weapons can fire High Power cartridges without risking the increased chance of a Critical Miss prescribed by the Firearms rules.

Rifled Barrels: This is only a feature in dealing with Muzzle Loading weapons, as ALL modern guns are rifled. The use of rifling in a gun barrel will increase the weapon's Range Steps by 50%, just as Match weapons do in the more advanced weapons.

Features NOT In the Firearm Rules

Some of these are given in the Features entries on the Gun List. Others are not all that common, but may be included at the Gamesmaster's option.

357 Magnum Cross Load: Most 357 Magnum weapons can also use 38 Special.

44 Magnum Cross Load: Most 44 Magnum weapons can also use 44 Special.

High Security Safety: when the safety catch is engaged, the gun CANNOT fire. Use it as a hammer or to crack nuts: it will not go off.

Pistol Forearm Braces: Lock the gun into the most favorable position for proper aim. If only 1 Shot per Action is fired from a gun so provided, it receives the same benefit as the Squeeze Off option gives: the firer adds his DFT to his weapon Skill score. If this brings his Aim past 5 then so be it.

Rotary Magazine: This extremely sturdy magazine is almost failure proof. Add +3 to the Control BCS against Critical Misses when using weapons with this type of magazine.

No Iron Sights: Or, no sights built into the gun. This is the case with many rifles. They cannot use sighted fire until Iron or other sights are installed on them.

Changeable Chokes: Many shotguns may be provided with inset and changeable tubes which can be used to alter Choke without changing barrels.

Variable Choke: A device is mounted on the end of the barrel which allows the Choke setting to be selected at will in 1 Action, This is usually a rotating sleeve.

Bipods: These usually go on Military Issue weapons. A Prone firer assuming Full Stance (yes, it does sound odd) may assume the Rest weapon modifier in the same Action.

Winter Triggers: Outsize triggers, snapped on over the normal one, which protrude well below the trigger guard or snap down trigger guards. This allows fire in mittens or bulky fingered gloves.

That about wraps up the main ones. Several unique Features are in the Gun List, but they are specific to the weapons involved, not something one could apply widely.

Adding Features

A skilled Gunsmith can modify firearms to include features they did not have when they came from the plant: Changed BBL, Recoil Reduction, re-mounted Iron Sights or a Scope Mount where one was not before, etc. The Gamesmaster must assign a base Task value to such jobs.

A rule of thumb is 10 points per point of BCS or other advantage gained by the Feature for the firer (use maximum possible values). The Task Period is based on the gun's DUR. Assume a base Period of 20 Hours, divided by the weapon's Durability score.

The workman must have the necessary parts and tools. One can hardly mount a Click Sight which one does not have on a gun when one has no tools with which to work.

Aftermath! VEHICLE RECORD SHEET

Vehicle _____

Classification _____ Soft/Hard Target

Base Safe Speed _____

Fuel System _____ Mileage _____ Capacity _____

Structure _____ Area _____

Damage Resistance _____ Current Durability _____

Maximum Speed _____ Current Max. Speed _____

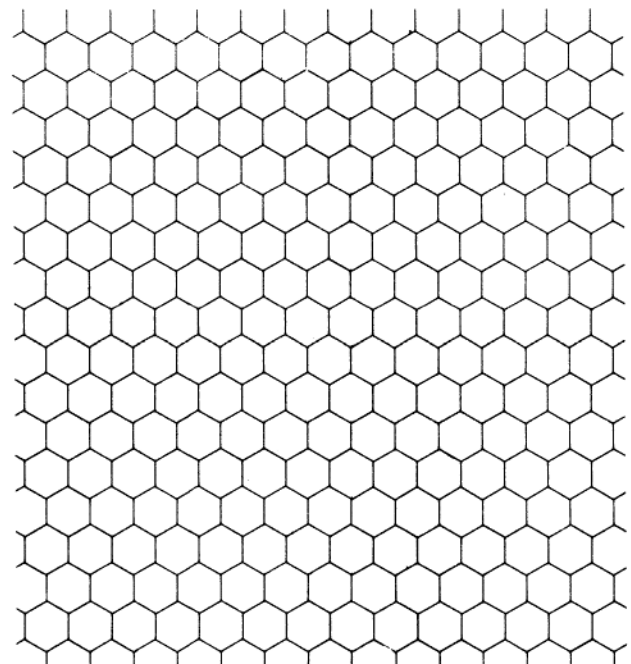
Damage taken not yet accounting for a Durability loss _____

Safety Devices _____

Notes on Barrier Effects _____

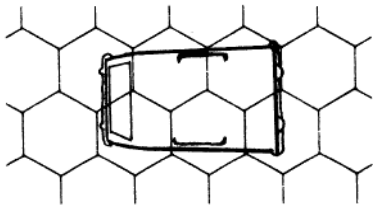
Special Features _____

Block out Areas of the Vehicle

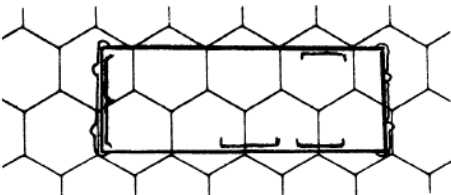


APPENDIX 7 SAMPLE VEHICLES

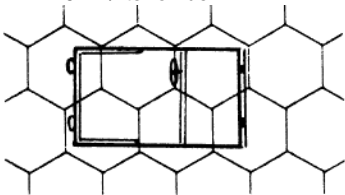
The vehicles included in this appendix are not intended to be the only versions of the prototype vehicles that can be used in the game. Different versions or models will have varying statistics. These can be determined using the rules in the chapter on vehicles. Each vehicle in the appendix is given with the pertinent data. Following the list is a sample Vehicle Record Sheet which may be photocopied for use in your campaign.



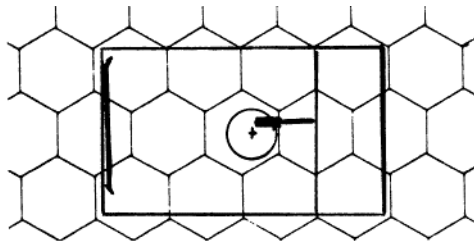
Vehicle: Compact Car (1986)
 Classification: On-road Car Soft Target
 Base Safe Speed: 80
 Fuel System: Gas
 Mileage: 20km/L
 Capacity: 60 L
 Structure: 1
 Area: $2 \times 3 = 6$
 Damage Resistance: 3
 Maximum Speed: 100 kph
 Safety Devices: Seat Belts; Crash Bags
 Notes on Barrier Effects: Window: 10; Body: 20
 Special Features: Carries 5 passengers (inc. driver); has a trunk (ENC Cap 15, up to Large)



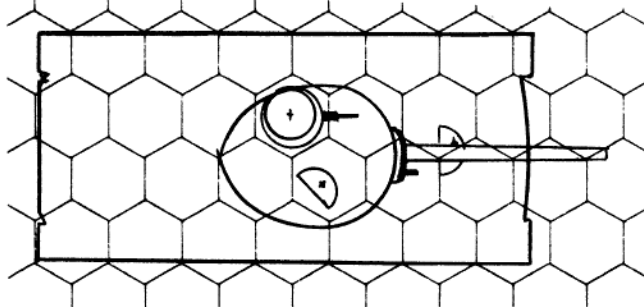
Vehicle: Van (1990)
 Classification: On-road Truck Soft Target
 Base Safe Speed: 90 kph
 Fuel System: Elec.
 Mileage: 4 km/char.
 Capacity: Ev-50
 Structure: 1.5
 Area: $2 \times 4 = 8$
 Damage Resistance: 6
 Maximum Speed: 58 kph
 Safety Devices: Seat Belts for driver and passenger in front seats
 Notes on Barrier Effects: Window 10; Body: 25
 Special Features: Cargo area (ENC Cap 70, up to Huge 1) or 6 people, seated. This is based on a gasoline-powered van with a top speed of 144 kph that gets 7.6 km/liter of fuel.



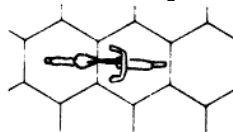
Vehicle: Jeep (military 1/4 ton truck)
 Classification: Off-road Car Soft Target
 Base Safe Speed: 80 kph
 Fuel System: Gas
 Mileage 6.9 km/L
 Capacity: 50 L
 Structure: 2
 Area: $2 \times 3 = 6$
 Damage Resistance: 3
 Maximum Speed: 88 kph
 Notes on Barrier Effects: Body: 25
 Special Features: Carries driver, co-driver and 3 passengers of a cargo load (ENC Cap 33).



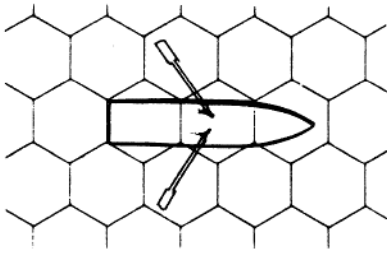
Vehicle: M-113 Armored Personnel Carrier
 Classification: Heavy Combat
 Base Safe Speed: 120 kph Hard Target
 Fuel System: Diesel
 Mileage: 5 km/L
 Capacity: 960 L
 Structure: 4
 Area: $3 \times 4 = 12$
 Damage Resistance: 24
 Maximum Speed: 67 kph
 Safety Devices: None
 Notes on Barrier Effects: Vehicle Armor Value: 7; Barrier Value: 70
 Special Features: Carries 13 troops (inc. driver); Standard armament is 2 Browning M2 .50 caliber machine guns; Carries up to 2000 rounds for the MGs; Military quality radio; can be sealed against biochemical agents.



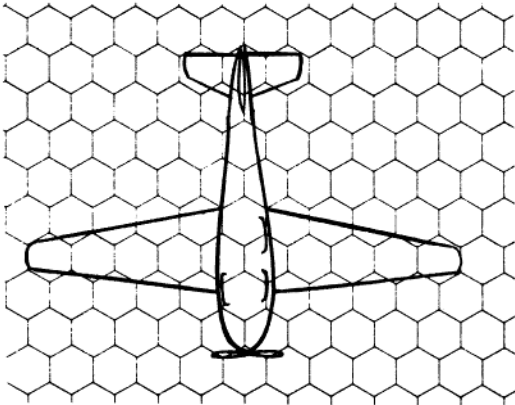
Vehicle: M60A3 Main Battle Tank
 Classification: Heavy Combat Hard Target
 Base Safe Speed: 120 kph
 Fuel System: Diesel
 Mileage: .3 km/L
 Capacity: 1400 L
 Structure: 5
 Area: $4 \times 7 = 28$
 Damage Resistance: 70
 Maximum Speed: 48 kph
 Notes on Barrier Effects: Vehicle Armor Value: 10; impervious to small arms fire
 Special Features: Crew of 4 (driver, gunner, loader and commander); 105mm Direct Fire Canon; Carries 63 rounds for main gun (APDS, HEAT, HE or WP); Coaxial 7.62mm MG (M60 MG equivalent); Carries 5.950 rounds for coaxial MG; One .50 caliber Browning M2 machine gun in commander's turret; Carries 900 rounds for commander's MG; R main gun sight (effective to 2,000 meters); Turret turns at 120 degrees per Combat Turn (electrically powered); Military quality radio; Can be sealed against biochemical agents.



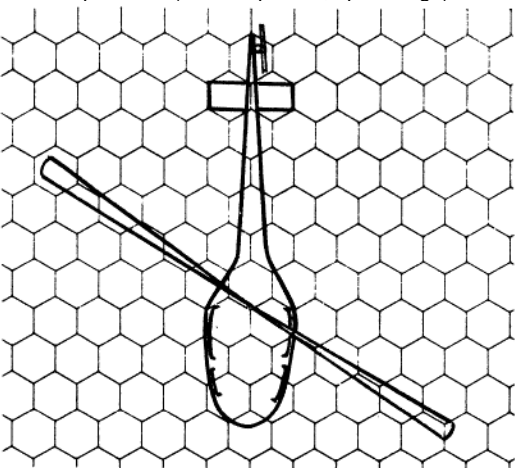
Vehicle: Bicycle
 Classification: On-road Bicycle Soft Target
 Base Safe Speed: 8
 Fuel System: Muscle
 Structure: 1
 Area: $.5 \times 2 = 1$
 Damage Resistance: .5
 Notes on Barrier Effects: None
 Special Features: Maximum Speed is equal to one half the user's Speed in kph, It is able to be used for a number of Combat Turns equal to user's Strength Group times 2. Normal speed is equal to one quarter of the user's Speed in kph, It is able to be used for a number of hours equal to the user's Strength Group times 2. For each two hours spent pedaling the user will have his Speed reduced by 5. Speed is recovered by resting at the rate of 5 points per hour. This reduction is only in effect if the character moves at all in a turn.



Vehicle: Rowboat
 Classification: Boat Soft Target
 Fuel System: Muscle
 Structure: 2
 Area: $1 \times 3 = 3$
 Damage Resistance: 3
 Notes on Barrier Effects: Wood: 5
 Special Features: Carries 3 persons; maximum ENC carried before sinking is 20
 Moving: Maximum speed is equal to one half the rower's Strength in kph, It is able to be used for a number of Combat Turns equal to the rower's Strength Group. Normal speed is equal to one quarter of the rower's Strength in kph. It is able to be used for a number of hours equal to the rower's Strength Group. The rower will have his Strength reduced by 5 for each hour or fraction spent at rowing. This loss is recovered at the rate of 5 points per hour of rest.



Vehicle: Single Engine Passenger Airplane
 Classification: Aircraft Soft Target
 Base Safe Speed (taxi): 100 kph
 Fuels System: Aviation fuel
 Mileage 3 km/L
 Capacity: 500 L
 Structure: 3
 Area: $(1 \times 8) + (1 \times 10) = 18$
 Damage Resistance: 27
 Maximum Speed: 315 kph
 Minimum air speed: 50 kph
 Safety Devices: Seat belts
 Notes on Barrier Effects: Window: 10; Body: 16
 Special Features: Carries 6 passengers (inc. pilot); Has a baggage compartment (ENC Cap of 39, up to Large)



Vehicle: Industrial Passenger Helicopter

Classification: Aircraft Soft Target
 Fuel System: Aviation fuel
 Mileage: .5 km/L
 Capacity: 400 L
 Structure: 3
 Area: $(2 \times 3) + 7 = 13$
 Damage Resistance: 20
 Maximum Speed: 219 kph
 Safety Devices: Seat Belts
 Notes on Barrier Effects: Window: 10; Body: 16
 Special Features: Carries six passengers (inc. pilot); Has a baggage compartment (ENC Cap of 8.5, up to Large; Can take an optional external cargo sling allowing it to lift up to 49 ENC mote, up to Huge 1.

APPENDIX 8 GLOSSARY

- A:** Code letter for a Disease, Poison, or other form of contaminant with an Aerosol vector. See Vector.
- AFV:** Armored Fighting Vehicle. Generic term for any armored combat vehicle such as a tank, armored car, personnel carrier, etc.
- AP:** See Action Phase.
- AP 0:** Action Phase 0. The final Action Phase in a Combat turn. No character Actions or movement take place in AP 0. It is used for such bookkeeping as is needed in the campaign at that time (effects of drugs, acid, fire, etc.).
- APC:** Armored Personnel Carrier. A specific type of AFV.
- AST:** See Attribute Saving Throw.
- ATGM:** Standard military abbreviation for Anti-Tank Guided Missile. A projectile guided by radar, laser-display, wire, or other control, designed to be effective vs. hard targets (qv).
- ATV:** All Terrain Vehicle. A class of vehicle designed for use on or off the road in a variety of terrains and conditions. This class includes tracked vehicles, 4-wheel drive vehicles, and such advanced devices as Ground Effect vehicles, which use a cushion of compressed air as a means of locomotion.
- AV:** See Armor Value.
- Ability:** A score representing some physical or mental characteristic, directly derived from an Attribute or Attributes.
- Action:** Some option or action performed by a character. It requires a number of Action Phases equal to PCA to perform a simple Action.
- Action Phase:** A segment of a Combat Turn (qv). There is an indefinite number of Action Phases in each Combat Turn.
- Action Zone:** The Front facing hexes of a character on the Detailed Action Time Display. May vary in size according to the Length of the character's weapon.
- Adjusted BCS:** This number is derived by applying all relevant modifiers to a character's BCS. This is the score which is applied to the die roll to see if the action attempted succeeds or fails. If the score rolled is less than or equal to the Adjusted BCS, the attempt has been successful.
- Advance:** A measurement of the progress of a drug, disease, or other progressively worsening state or condition. Such Advances may be Up an Attribute or other score, achieving effects as they match given proportions of the total score, or Down, in which case the Advance represents a reduction of the score in question.
- Allocated Attribute Score:** The value of the Attributes as originally designed by the player.
- Armor Value:** A measure of the ability of a given material to stop harmful force from blows, missiles, heat, electrical current, etc. The Armor Value is subtracted from the Damage Potential (qv) of an attack striking the character on the Location covered by that armoring material.
- Attribute:** A number greater than 1, measuring a character's physical and mental capabilities. The usual range for human Attributes is from 1 to 40.
- Attribute Saving Throw:** (Abbr. AST) A Saving Throw calculated by dividing the relevant Attribute score by 2, round down. See Saving Throw.
- Autoloader:** A form of Gun Action, automatically ejecting spent cartridges and chambering new ones for firing. Also called semiautomatic.
- Average Armor Value:** An abstract figure representing the overall armor protection for a character. Calculate as follows: Total the best Armor Values on each Location of the Character and divide by 30, round nearest.
- Average BCS:** (maximum score possible/10) to derive this BCS. It is then subject to normal modifiers to derive the effective BCS for the Skill use in question. Average BCS is generally used in cases where the attempted task is more than usually difficult.
- B:** Code Letter (short for Both). Refers to weapons or attacks doing 500% Lethal and 50% Subdual Damage.
- BAP:** See Base Action Phase.
- BAR:** See Barrier Value.
- BBL:** Abbreviation of Barrel. Refers to the length of gun barrels.
- BCS:** See Basic Chance of Success.
- BDG:** See Bullet Damage Group.

BMA: See Base Movement Allowance.

BP: See Barter Point.

Barrier Value: A measurement of the resistance of materials to damage or force. This can be expressed as a figure per inch of thickness, as when calculating the Barrier's resistance to missiles, or a figure representing Task Points needed to force passage past the Barrier (a lock, bolted door, gate, cave-in, etc.).

Barter Point: A rough estimate of the trade value of some item or commodity. Barter Point values fluctuate according to the acumen of the traders, the condition of the goods, and the utility of the item for the would-be purchaser.

Base Action Phase: The number of the first Action Phase in a Combat Turn on which a character may initiate movement or Actions. It is equal to effective Speed/2, down.

Base Movement Allowance: The number of meters a character can move in one Action Phase at a Walking pace. For normal Humans, this is one.

Base Safe Speed: The maximum safe speed for a particular vehicle. The effective figure is modified by the terrain, weather, light, etc.

Basic Chance of Success: Abbreviated as BCS. This is determined by dividing the score in a Skill by 5, round down. It can never exceed 20 (but see also Effective BCS).

Blast: A measurement of the concussive force of an explosion.

Bookkeeping Phase: see APO

Bullet Damage Group: Measure the Damage Potential (qv) of firearm projectiles (i.e. bullets), This is equal to 1D10 per BDG/10, up, plus 1 point x BDG/10, nearest.

Also determines the percent chance of Missile Special Effects resulting from a bullet hit.

C: Code letter short for Crush. Refers to weapon or attack doing 25% Lethal and 75% Subdual Damage.

CDA: See Combat Dodge Ability.

CRS: See Character Record Sheet.

CST: See Critical Saving Throw.

Carbine: A Gun barrel length, applicable to Pistols or Long Guns. It denotes a BBL of more than twelve inches and less than twenty.

Character: Any being encountered in the game: humans, animals, monsters, robots, you name it. See Player-Character, Non-Player Character, Personality Non-Player Character.

Character Record Sheet: Annotated log sheet containing information on a character. It should include physical characteristics. Skills and other abilities, and a list of equipment. The Character Record Sheet (CAS) should be on hand for easy reference during play.

Charge (Electric): A measurement of electrical power, usually stored power equal to 100 watt-hours.

Combat Dodge Ability: Governs ability to evade attack (reducing attacker's BCS). Equal to effective (Speed plus Deftness)/20, nearest.

Combat Turn: The basic unit used to measure time in Detailed Action Time scale. 1 Combat Turn equals approx. 6 seconds. It does not necessarily involve actual fighting.

Combative Talent: One of the Talents, governing will-to-win and general aptitudes combat situations.

Control BCS: Some Skills, notably the Hand-to-Hand and Small Arms Skills, have a Control BCS derived from scores about 100 points. All Skills of Format 3 allow such BCS rolls in the event of a Critical Miss.

Countdown: The sequence of Action Phases in a Combat Turn, as called by the Gamesmaster. It begins with the number of the BAP of the character with the highest score in that Ability and proceeds down from that number to 0.

Critical Effect: The special effects, if any, suffered by a character who has taken damage from a Critical Hit. These are rolled for on the Critical Effects table.

Critical Hit: Occurs when a BCS, Saving Throw, or similar die roll on 1D20 scores a natural roll of one. Indicates that the action being attempted has achieved a more than ordinary degree of success. In a combat situation, the Damage Potential of the attack is increased and the target may suffer special effects (see Critical Effects).

Critical Miss: Occurs when a BCS, Saving Throw, etc. scores a die roll of a Natural 20. Indicates a more than usually inept failure, possibly with severe consequences. Some Skills allow a Control BCS attempt (qv).

Critical Saving Throw: A Saving Throw (qv) derived from an Attribute by the following formula: effective Attribute/3, nearest. Its use is similar to the AST, but is reserved for situations of greater peril or difficulty than normal.

Current Attribute Score: The value of an Attribute at a given point in the campaign, allowing for changes in the Allocated value due to Self Improvement, Age, etc.

DAT: See Detailed Action Time.

DFT: Standard abbreviation of the Deftness Attribute.

DP: See Damage Potential.

DRT: See Damage Resistance Total.

Damage: A figure generated by weapon blows, natural hazards, high falls, and other dangers to life and limb. There are several types of Damage: Lethal, Subdual, and Critical.

Damage Dice: Alternate term for the Effect Die of a character's Strength Group. See Group.

Damage Potential: Damage Potential measures the total damaging effect of a hit or other hazard before any of the target's defenses can reduce the damage that the target will actually suffer to his DRT. In hand-to-hand and muscle powered missile attacks, the Damage Potential equals the score rolled on the Damage Dice (qv) times the Weapon Damage Multiplier (qv) of the weapon used.

Damage Resistance Total: The amount of Damage (Lethal or Subdual) which a character can suffer before dying or losing consciousness. The DRT is the sum of the character's Health plus half his Strength plus half his Will in most cases, although some Non-Player-Characters have special formulae for determining DRT.

Detailed Action Time: A Time Scale used to keep track of action in *Aftermath!* Time in DAT is measured in six second Combat Turns (qv) and distance is measured on a 1 meter hexagonal grid display, call the DAT Display. DAT is invoked by the Games-master in all situations in the campaign where activity must be kept track of in minute detail. The usual situations in question include combat, triggering traps, encounters, etc. It is not restricted to violent situations.

Durability: An abstract measure of the condition of an artifact (vehicle, tool, weapon). When Durability is below the normal value for an item, its functions are impaired. When the Durability is reduced below 1, the item ceases to function (Disrepair) and may be irreparably damaged (Junked).

Effective Attribute Score: The Current Attribute Score (qv) allowing for temporary alterations due to wounds, Encumbrance, diseases, poisons, etc. Used for calculating all Saving Throws or other Attributes based values at a given moment.

Encumbrance: A system measuring both the weight and bulk of objects for purposes of calculating carrying capacities in the campaign. These values are measured in ENC.

Encumbrance capacity: Encumbrance Capacity measures a character's load bearing ability, The ENC CAP equals (2 + character's Strength Group) plus his Deftness Group. This is the maximum amount of Encumbrance he may carry.

Encumbrance Total: Also called Encumbrance Status. This is the amount of Encumbrance currently being carried by a character.

Engaged Status: A character who is in the Active Zone of a foe who is able to cause him harm. Generally refers to being in the range of a hand-to-hand attack by a conscious enemy. Engaged Status limits the movement of the character.

Fatigued: A condition applying to characters who have suffered an overexertion or debilitating disease or poison effect. Two levels of Fatigue exist: Partial and Full.

Freely Improvable Skills: The maximum number of Skills in which the character may study without a Hindrance (qv). The number of Freely Improvable Skills equals the sum of the Current Wit and Will.

Full Fatigue: A condition in which the sufferer's Effective values in Deftness and Speed are reduced by 50% and all BCS and Saving Throw scores receive a penalty of minus 2.

Fully Encumbered: A character with an Encumbrance Total exceeding 75% of his Encumbrance Capacity is Fully Encumbered. His Effective Deftness and Speed are reduced by 50% and all BCS and Saving Throw scores receive a penalty of minus 2.

GEV: Abbreviation of Ground Effect Vehicle. See ATV.

GPMG: Abbreviation of General Purpose Machine Gun. An intermediate level of weapon between Light and Heavy Machine Guns.

Gamesmaster: The campaign's referee. The final arbiter of all game matters.

Governing Attribute: An Attribute which comprises part of the Initial Score in a Skill, it is designated as the Governing Attribute, which has certain effects in Self Improvement.

Governing Talent: A Talent which comprises part of the initial score in a Skill, it is designated as the Governing Talent, which has certain effects on Self Improvement. The raw score in a Governing Talent may also, at the Gamesmaster's Discretion, be used as a score in any Skill it governs, in the absence of any character trained in that Skill.

Group: A central concept in the game mechanic! A Group is a figure generated from any number (usually an Attribute). The Group figure may be used itself to determine some event, or an Effect Die roll may be generated from it. The breakdown of numbers into Groups is:

Number 0 1-4 5-14 15-24 25-34 35-44

Group 0 1 2 3 4 5

Effect Die None 1D3 1D6 1D10 2D6 2D10

A Group can be calculated by dividing the number by 10, adding one, and rounding to the nearest whole number. For Groups higher than 5, the Effect Die is 2D10 plus a figure equal to the Group minus 5. E.g., for a

value of 77, the Group would be 9 and the Effect Die would therefore be 2D10 plus (9-5), or plus 4.

Gun Action: Generic term for the operating mechanism of a firearm. The Gun Action specifically controls the rate of fire, that is the number of shots a character can fire in a single Action during a Combat Turn.

HE: Standard abbreviation for High Explosive.

HEAP: Standard abbreviation for High Explosive Anti-Personnel, referring to explosive weapons designed for use against human (or at least living) targets.

HEAT: Standard abbreviation for High Explosive Anti-Tank, referring to Rifle Grenades and other man-portable weapons designed for use vs. AFVs.

HLH: Standard abbreviation of the Health Attribute.

HMG: Heavy Machine Gun.

HTH: Hand-to-Hand. May refer to a form of weapon or style of combat.

Hard Target: used in determining the effects of Vehicular Combat. Refers to an armored vehicle.

Healing Rate: The base figure governing the recovery of lost DRT of the reduction of other forms of damage. It is equal to the character's Health Group.

ICBM: For Inter-Continental Ballistic Missile. The most useful form of delivery for large tactical or strategic nuclear weapons. Not man-portable.

Incubation Period: The length of time between exposure to an infection, drug, or other poison or pathogen and the first onset of its effects.

L: A weapon or form of attack doing 100% of its damage as Lethal Damage.

LAW: For Light Anti-Tank Weapon. Refers to man-portable, single shot, disposable missile launchers, firing powerful HEAT rounds.

LMG: Standard abbreviation for Light Machine Gun.

LOC: Also spelled as Loc. See Location.

Lb.P.: See Pound Pull.

Learning Rate: The base figure governing the rate at which the character will gain Skill points in a period of study (usually measured in points per week). It is equal to the character's Wit Group.

Location: A portion of a character's body, designated on a Hit Location chart. Alternatively, the number of such parts that may be covered by some form of protection, clothing, or armor.

Long Gun: A firearm used with both hands, usually fired from the shoulder.

MNA: Standard abbreviation of Maximum Number of Actions.

Maximum Number of Actions: The greatest number of Actions a character may perform in a single Combat turn. The MNA is equal to the character's Deftness Group.

NPC: See Non-Player-Character.

Non-Player-Character: A character in the campaign controlled by the Gamesmaster. An NPC need not be a human being. As a rule, all characters not created and controlled by Players are Non-Player-Characters.

ODA: See Overall Defense Ability.

Overall Defense Ability: The total defensive ability of a character under attack. It is the sum of his CDA and WDA (if applicable). The ODA is subtracted from the attacker's BCS to hit the target.

PC: See Player-Character.

PCA: See Phases Consumed in Action.

PNPC: See Personality Non-Player-Character.

Partial Fatigue: A condition in which the sufferer's Effective values in Deftness and Speed are reduced by 25% and all BCS and Saving Throw scores receive a penalty of minus one

Partially Encumbered: A character with an Encumbrance Total between 50-75% of his Encumbrance Capacity is Partially Encumbered. His Effective Deftness and Speed are reduced by 25% and all BCS and Saving Throw scores receive a penalty of minus one.

Passive Zone: Refers to a character's Side and Rear hexes of the DAT display.

Personality Non-Player-Character: A Non-Player-Character with a fully designed history, psychology, motivation, etc. The major NPCs in the

campaign. They may be of major status (known widely in the game world) or important only in a given scenario. They are not necessarily hostile to Player-Characters.

Phases Consumed in Action: The number of Action Phases it takes for a Character to perform an Action. The PCA equals BAP/MNA, down.

Pistol: A handgun. Specifically refers to firearms used with one hand.

Player-Character: A character designed and/or controlled by a Player. The Player-Characters are (at least theoretically) the "stars" of the campaign.

Pound Pull: A term indicating the spring-strength of a bow. The higher the Pound Pull, the greater the range potential of the weapon, but the higher the Strength needed to use it effectively.

RPG: Standard abbreviation for Role Playing Game.

Range Factor: A figure used in archery. It is equal to the Pound Pull/10, nearest.

Rep: A system for determining the reputation enjoyed by a given character in the campaign at large, and how likely he is to be recognized by strangers as a result of his deeds.

Reputation Zone: Area in which a character's Rep is generally known.

Restriction Zone: The area within which a character is subject to Restrictions in combat, based on the DAT Display.

Rifle: A Long Gun with a BBL of greater than twenty inches.

S: Code for weapon or attack doing 100% Subdual Damage. Such Damage is non-lethal except in large amounts, and is usually quickly healed.

SCUBA: Standard term for underwater breathing gear. Stands for Self Contained Underwater Breathing Apparatus.

SMG: Standard abbreviation for Sub-Machine Gun.

SPD: Standard abbreviation of the Speed Attribute.

STOL: Standard abbreviation for Short Take-Off and Landing. Refers to aircraft which require minimal runway space for taxiing for take off or braking after landing.

STR: Standard abbreviation of the Strength Attribute.

Shotgun: Usually a Long Gun. It fires a mass of small pellets (Shot) rather than a single bullet. Can also fire single, large caliber Slugs.

Soft Target: Used in determining the effects of Vehicular Combat. Refers to an unarmored vehicle.

Structural Stability: An abstract value applied to buildings and other structures. It measures their general condition and the danger of violent action while inside. The figure also serves to determine random accidents while traversing such buildings.

Talent: A score measuring the inherent capability of the character in some general area. The maximum score in a Talent for a normal human is 20. Scores above 10 represent significant Talent in that area.

Task: An activity or task to produce some product or change some condition. The Gamesmaster assigns a value in Task Points to the job and when the character(s) involved have generated that number of points, the Task is completed. A Task Period is also assigned, which governs how often they may generate more points on that Task.

Treacherous Ground: Any surface which does not provide sure footing for characters in motion upon it: ice, rubble, mud, etc. Movement above a given rate on Treacherous Ground may cause the character to fall down.

Unencumbered: A character whose Encumbrance Status is less than or equal to 50% of his ENC CAP is unencumbered, unaffected by the burdens he is carrying.

Unengaged Status: A character who does not satisfy the requirements for Engaged Status is Unengaged.

Utility Number: An abstract figure used as a guide to assigning a value and level of usefulness to items found, bought, or otherwise obtained during the campaign. The higher the Utility Number, the more valuable or useful the item is.

VTOL: Standard abbreviation for Vertical Take-Off and Landing. Refers to aircraft which can take off in a straight-up line, without taxiing.

WDA: See Weapon Defense Ability.

WDM: See Weapon Damage Multiplier.

WL: Standard abbreviation of the Wit Attribute.

Weapon Damage Multiplier: The value assigned a hand weapon, or mechanical or muscle powered missile weapon, by which the character using it will multiply his damage die roll to determine his damage potential.

Weapon Defense Ability: Represents the ability to parry and dodge in HTH combat using a given Combat Skill. WDA is equal to the first 100 points of the Skill in use, divided by 20, nearest.



