Objects

A generic game engine
by Darryl Park

Introduction

What this is: This is a generic game engine designed to run lots of different things without tying itself too particularly to any one genre. It attempts to be light on the rules because me (the writer) wants to make it as simple as possible to play. It attempts to give advice on how to model things using the mechanics. It also likes to work on the basis of a unified mechanic (non-modular mechanics need not apply).

What this is not: This is not a game where you will find sections on what an RPG is; I assume you know what an RPG is, how they generally work, and that you need somebody to run the game (called a Game Moderator or GM for short). This is not something that says "**YOUR FAVORITE GAME SUCKS!**" because that's just rude and won't win friends. This is not something that inherently supports one playing-style over the other (at least it wasn't designed to be).

Chapter I: Dice Basics

Dice

This game engine is designed to use plain old six-sided dice (known as 'd6's by us gaming geeks). You get them with games like Monopoly and Risk (which are both excellent games, by the way). I think Bicycle (the playing card company) puts out a pack with poker chips and five dice. Since this system uses dice pools, you'll probably want a lot of dice. This is especially true if your GM likes playing high-powered games.

Rolling Dice

When you are asked to roll some dice (typically to resolve some sort of chancy task), you're told which stuff on your character sheet applies. Then you grab a number of dice based on the number associated with the thing on the character sheet and roll them. Each die that comes up as the target number or better is a success. By default, you have a dice pool of six-sided dice and are trying to get 5 or 6 on them. Typically an action will have a difficulty assigned to it, which means you have to have a certain number of successes to succeed. A difficulty of 1 success is a trivial task; most people can do this easily if they're able to work unimpeded, and fairly easily even when they are. The more successes required, the harder it is to do what you're attempting. There may be times when the number of successes require is more than you have dice in your dice pool. That's okay, you just need to roll successes on every dice in your dice pool in those situations.

Whenever the relevant skill or trait is 0 or not possessed, you can still roll. You can only roll a dicepool equal to half the relevant attribute. This also applies if you are targeting somebody and the rules say you have to have a number of successes equal to a certain Skill or Trait and the target does not possess it; the target uses a relevant attribute that's cut in half.

The format for what is used to determine your dice pool size can be one of the following: Relevant Attribute + Another Relevant Attribute (Attribute Roll), Relevant Attribute + Relevant Skill (skill roll), Relevant Attribute + Relevant Trait (Trait Roll), Relevant Attribute + Relevant Skill + Relevant Trait (Skill or Trait roll).

Altering Chances of Success

There are several ways in which the chances of success are altered. The most common way is altering the number of dice in your dice pool. This represents altering the character's ability to function. Stuff like trying to shoot somebody while it's pouring down rain would give you a penalty to how many dice you roll (it's hard to see when water keeps getting in your eyes). Now if this person was wearing bright red clothing when you're trying to shoot them, you might get additional dice to your dice pool. Really, adding or subtracting dice from a dice pool is just for hindering circumstances.

That said, there is another way of messing with the chances of success that make it much easier or much more difficult to succeed; Modify the target number. Modifying the target number so that it is a higher number will dramatically reduce the chances of success overall. Lowering the target number will greatly increases the overall chances of succeeding. Since modifying the target number on a d6 dramatically alters the chances of success (about 16% for each number up and down), I recommend you don't do it unless the thing the character is attempting is either so easy that anyone can do it (like... kicking a wall) or so hard that only an expert would have even a chance of comprehending it (like reverse-engineering Windows XP and modifying the source code so it doesn't break all the time).

Chapter II: Character Basics

The Attributes

There are a number of key attributes that have been time tested in the RPG hobby, and so I'm going to stick with them. The names may be different from game to game, but they're pretty much the bare essentials. Typically, attributes range from 1-6 (they can go higher). Game Moderators may add attributes based on the kind of game they're running or the rules modules they're using.

Strength: Physical might, meaning how hard you hit, how much you lift, how much you can carry, etc.

Dexterity: How quick you are, your manual dexterity, your reflexes, etc. Gunfighters like to have high hand-eye coordination, which is a part of dexterity.

Stamina: This represents how resistant you are to physical hardship. Diseases, poison, alcohol tolerance, that sort of thing you know. Marathon runners will have a good Stamina score.

Intelligence: Intelligence isn't how smart you are (that would be judgmental and harsh), it represents how well you comprehend new experiences and learn from them. Problem solving is also covered by this.

Wisdom: Some people call it intuition. Either way, wisdom represents your ability to sense things out of place, or to suddenly realize something you had been missing before.

Charisma: Have you ever met somebody who is simply so charming or persuasive they captivate you? They have high charisma. People who seemingly have no personality of their own have low charisma. Basically, charisma represents your force of personality, your ability to schmooze and socialize.

The Statistics

There are a number of things that aren't attributes, but fundamental to the game. These are called statistics, and are typically derived from your attributes. Fortunately, most of those are optional rules, so I'm not going to worry about it yet. The one absolutely necessary thing is knowing how much punishment you can take before you die. It's called "Health". Simply enough, you can take an amount of damage equal to twice your stamina rating. Now, the GM can add on dice penalties for various stages of being wounded if he wishes, but that's beyond the scope of this document. Other statistics will covered in future rules modules.

Skills

Skills are a measure of a character's knowledge in a particular area. They range from 1-6 and are typically added to an appropriate attribute to form your basic dice pool. The value associated with a skill is called a skill rating.

Traits

Traits are special abilities that are a part of the character. That is, if you can breathe fire, you're going to have a Breath Fire trait somewhere. Traits usually have some sort of rules associated with each one and have a value associate with them that usually ranges from 1-6. You can have traits that are a hindrance to the character. The value associated with a trait is called a trait rating.

You do not need to pick any traits if you do not wish to.

Equipment

This covers any items the character possesses. Equipment includes mecha, guns, swords, magical doodads and gewgaws, clothing, big sticks, and pretty much anything else that isn't attached to the character (if it's attached, it's a trait). It's generally a good idea to have notes about what each piece of equipment does so you don't have to go hunting for them later.

Chapter III: Character Creation

This is just the default way of making a character. There are probably a lot more ways to do it, I'm just not going to deal with them right now.

Step 1: Character Concept (a.k.a. What the hell do I want to play?)

Figure out what kind of character you want to play. You want to choose something that is both interesting to play and won't give your GM or fellow players reason to murder your character. Usually you want to chat with your GM and fellow players about what kind of stuff will be happening in the game. The GM can, of course, veto any concept that doesn't fit what he has in mind.

Step 2: Determine Your Attributes (a.k.a. Roll for the sky!)

Roll 6d6 and add up the total. This is how many attribute points you have to assign to your six attributes. Attributes cannot be assigned more than 6 points.

Your GM may have other attributes that you must deal with, and if they are player-controlled (meaning they don't start at a preset number), then add 1d6 attribute points for each player-controlled attribute you have.

Step 3: Calculate Statistics (a.k.a. Did I carry the one?)

Figure out your statistics. There may be a variety of them, so you want to make sure you ask your GM which ones he's using, and how to calculate them. This is where you calculate your health (twice your stamina, remember?).

Step 4: Select Skills (a.k.a. Mad Skillz)

You start out with a number of points to assign to skills equal to the sum of your intelligence, wisdom, and charisma. You cannot assign more than 6 points to a skill. See Chapter 4 for a not-very-comprehensive list of skills.

Step 5: Select Traits (a.k.a. So you want to breathe fire...)

You start out with 6 points to assign to traits. You cannot assign more than 6 points to any one trait. Each trait that has a negative value adds its value to the number of points you have to assign to traits. The GM must approve all traits. Some example traits are provided.

You have the option of not picking any positive traits whatsoever and simply using the points that would have gone to traits for buying skills instead.

Step 6: Your Equipment (a.k.a Guns, lots of guns)

Generally, your GM will figure out what you start out with, or let you request your starting gear. Be reasonable. Would you expect, in a hard-boiled detective story, for your gumshoe to have a tank?

Step 7: Play!

Start playing the game!

Chapter IV: Skills

Here are some skills. Note that most of these are used in these rules. GMs are free to make up their own or break down existing skills into further skills. Mostly because this isn't anywhere near complete.

Boating

Some people don't realize the ways in which boats are different from cars. The effect of wakes while traveling, paths of least resistance, tides, lack of brakes, etc. It makes for a very different experience than driving a car. This skill covers the operation of boats and other watercraft.

Dodge

Generally, people try to avoid getting hit by things in a fight. This helps out by making it harder to hit you. It's also good for diving out of the way of an on-coming semi-truck or similar situations where dodging would be useful for avoiding bodily harm.

Driving

In a large portion of the industrialized world, people drive vehicles to carry themselves to various destinations. Thus, it helps to have some knowledge of driving. All land vehicles fall under this category.

Explosives

You know how to make explosives, the science behind explosives, and how to defuse them. Also helps in setting explosives. A successful roll may allow you to identify the kind of explosive used in an explosive device.

Mechanics

People with a rating of 1 or more in mechanics know how to fix machines, repair them, and build them.

Melee

If you want to attack somebody with your fists, baseball bat, chainsaw, computer monitor, or your really big stick; this is the skill for you.

Piloting

A skill which requires many hours of training (and likely nerves of steel), piloting covers aircraft of all sorts.

Ranged

Archery, throwing rocks, shooting things with a gun, these are covered by the ranged weapons skill.

Swimming

Swimming is useful to have if you like to hang out around the water. It can also save your life in some circumstances. By default, characters are assumed to be air breathers and can only hold their breath underwater for a number of turns equal to their Stamina + Swimming before they start drowning.

Chapter V: Example Traits

The following traits are provided as an example only (I promise it'll be short). The kind of trait (positive or negative) is right after the trait name. Note that some effects will grant traits temporarily, and that you can earn negative traits during the course of play without compensation.

Aquatic (Positive Trait)

Your native environment is an aquatic one. You breathe water, not air, and you add your Aquatic trait rating to anything involving having to swim. Additionally, since you breathe water and not air, you have to hold your breath when out of water, and can do so for a number of turns equal to your Stamina + Swimming (you do not include your Aquatic trait rating for this).

Diminished Sense (Negative Trait)

One of your senses is not very good or missing all together. Pick a sense (sight, smell, touch, taste, or hearing). Reduce any dice pool that requires that sense by this trait rating.

You can take this trait multiple times. It applies to a different sense each time.

Fire Breathing (Positive Trait)

You can breathe fire. When you want to do so, just say you are and make a Dexterity + Ranged + Fire Breathing roll to see if you hit what you're trying to hit. The damage dealt is the trait rating of Fire Breathing. Keep in mind that you'll burn stuff that burns and suffer the consequences of the burning stuff. There are lots of chemicals that explode when burned, so be careful with this one.

Extra Limbs (Positive Trait)

You have a number of extra limbs, whether they be tentacles, arms, legs, a prehensile tail, a nose like an elephant, or a very long tongue. I don't know what mechanical benefits this would give you yet, but its here if you need it. You have a number of extra limbs equal to your Extra Limbs trait rating.

Fireproof (Positive Trait)

You're kind of hard to burn. Subtract your Fireproof trait rating from any damage dealt by fire or other sources of heat.

Missing Limb (Negative Trait)

You're missing a limb such as a hand, forearm, or arm, and it makes it really hard to do a lot of physical things. A single arm or leg can net up to a trait rating of 3, depending on what part was lost. Losing half your limbs can be up to a trait rating of 6 (again depending on which parts were lost). Missing all your limbs is automatically a rating of 6 in this trait and you may want to consider making a new character.

You suffer a penalty to all dice pools involving Strength or Dexterity equal to your Missing Limb trait rating. If you're missing all your limbs, all dice pools involving Strength or Dexterity are automatically reduced to 0 and the action simply cannot be performed by your character.

This trait cannot be taken in conjunction with Extra Limbs without a good explanation. You can buy this trait off with experience if your GM allows it.

Phobia (Negative Trait)

You have an irrational fear of something. Pick a trigger. When you encounter your trigger, you must get a number of successes equal to your Phobia trait rating on a Wisdom + Intelligence roll or run in terror from your trigger until you cannot see or hear it. Should you be unable to run from the trigger, you will get as far away as you can from it. Should you actually be forced to come into contact with your trigger, you must get a number of successes equal to your Phobia trait rating on a Stamina + Wisdom roll or pass out.

This trait overrides any effects that normally grant immunity to fear. This trait can be taken multiple times; it applies to a different trigger each time.

Rage (Negative Trait)

There are some things that just set you off. You pick a number of triggers equal to your Rage trait rating. When you encounter one of your triggers, you fly into a rage, screaming and yelling at the trigger. Your GM is in control of the character until the rage subsides. The rage subsides when you get a number of successes equal to your Rage trait rating on a Wisdom + Intelligence roll. You can only make this roll if another character actually

tries to calm you down.

Chapter VI: Combat

The only reason why combat gets a chapter to itself is because combat is always problematic. I remember playing Cops and Robbers as a kid and arguing about who shot who and when. This, hopefully, helps you avoid those nasty little arguments. The chapter is written in terms of the order you do things in combat in. First you determine initiative for the round, then you do something when it's your turn.

Initiative

You roll Dexterity + Dodge and count the successes. That's your initiative. Initiative goes in the order of highest to lowest. In case of ties, go in order of highest Dexterity to lowest Dexterity. If they have the same Dexterity rating, go in order of highest Wisdom to lowest Wisdom. If you're STILL tied, I'm sorry, but you and whoever you tied with go at the same time.

Actions

You may be waiting for a bit while your turn rolls around, but it'll be worth it because then you can do something. Here are the basic things you can do (future rule modules may add onto this). Generally anything you can do in about 3 seconds can be done in a round.

Move: You can move up to three times your dexterity in feet or up to your Dexterity in meters.

Attack: You can attack something, whether it is up close in melee or at a distance with a ranged weapon. For melee, you roll Dexterity + Melee. For ranged, you roll Dexterity + Ranged. In either case, you have to score a number of successes equal to your target's Dodge rating (or half their Dexterity if they have a 0 in Dodge). Damage is covered a bit later.

Defend: You can attempt to protect yourself from getting hit. Whenever somebody successfully hits you, you can roll Dexterity + Dodge. You need to get a number of successes equal to the skill rating of the skill used to attack you to successfully dodge.

Damage

Most people in a fight aim to injure other people. Here are the rules for dealing damage.

When you hit somebody and they haven't dodged, then they are going to be hurting. For melee weapons, you roll Strength + Weapon's Damage rating, hoping to score successes equal to or greater than their Stamina + Armor. For ranged weapons, you roll Dexterity + Weapon's Damage rating and hope you get a number of successes equal to or greater than their Stamina + Armor.

In either case, you deal 1 damage if you get a number of successes equal to their Stamina + Armor. You deal 1 damage per success above that.

There are two kinds of damage; lethal and non-lethal. Non-lethal is relatively temporary compared to lethal damage, and may result in severe bruising, but nothing you can't shake off in a day or two. If you are reduce to 0 health by non-lethal damage, then you're on the ground helpless and in pain. When you reach negative health equal to your Stamina in non-lethal damage, then you're unconscious and all further damage done to you is lethal.

If you are reduced to 0 health by lethal damage, you're probably bleeding severely and incapable of helping yourself. When you reach a negative level of health in lethal damage equal to your Stamina rating, then you die.

Chapter VII: Equipment

Equipment does a lot of different things, let's face it. They can modify a skill roll, give you a trait, cover your butt, or let you do horrendous amounts of damage to things.

Although there is a vast array of categories one could categorize equipment into, I will start with three. There are tools, weapons, and protection. Sometimes a piece of equipment will fall into more than one category.

Tools exist because they are useful to have when doing some task or benefit you in some way. Your typical tool gives you a bonus from 1 to 3 on an associated skill roll. Sometimes a tool will give you a trait for a period of time. These are the properties of a tool.

A weapon is something that can be directly used to hurt somebody. A potion of fire-breathing is not a weapon because you don't generally bash somebody over the head with the potion itself. You drink it, *then* breathe fire at somebody. By contrast, a sword is pretty straight forward. A sword's primary purpose is use as a weapon. Weapons have a Damage rating associated with them.

Armor keeps you from getting hurt. More specifically, it makes it harder for damage to get through to you. Armor has an Armor rating associated with it.

Sample Equipment

.22 Caliber Rifle: A rifle that uses .22 caliber rounds. It typically holds 20 rounds in a cylindrical magazine. It has a lethal Damage rating of 1.

.38 Special Revolver: A small revolver with six rounds in the cylinder. It has a lethal Damage rating of 2.

Armor Piercing Bullets: Designed to penetrate modern armor, you can purchase these type of bullets for just about any kind of gun. They are usually illegal for civilians to purchase. Guns with this kind of bullet reduce the target's effective Stamina + Armor by the Damage rating of the gun used.

Buster Sword: It's a really freaking big sword. In fact, you have to have Strength 3 or more to use the thing properly (-2 penalty to melee attacks made with the sword for each point of Strength under 3). The weight of the thing is also enough to make light armor pretty useless, reducing the effective Armor rating of the target by 3. A buster sword has a lethal Damage rating of 10.

Colt M1911A .45 Caliber Semi-Automatic Pistol: A John Browning design that has proven its reliability as a firearm so well that many countries have copied the design illegally and produced their own variants. It has a clip of 8 rounds plus 1 in the chamber, and has a lethal Damage rating of 3.

Dagger: A blade approximately four to six inches long. It has a lethal Damage rating of 1.

Double Barreled Shotgun: A 10 or 12 gauge shotgun with two rounds in chamber. Shotguns do not fare well against armored targets, but packs a wallop against unarmored targets. Double the Armor rating of the target when this weapon is used. This weapon has a lethal Damage rating of 5. You cannot purchase Armor Piercing Bullets for this weapon.

Long Sword: A blade that is about three to four feet long and is used in melee combat. It has a lethal Damage rating of 5.

M16 Assault Rifle: A weapon used by the military as a standard issue rifle. Because it has an autofire setting, it is less accurate, but makes it harder for the target to dodge. When you make a successful attack against an opponent who is making a defense action, reduce their Dexterity + Dodge roll by the number of successes you made on the attack. This weapon has a lethal Damage rating of 3.

Mechanic's Toolbox: A mechanic's toolbox gives you a +1 modifier to Mechanics skill rolls as long as it's complete.

Potion of Fire-Breathing: Whoever drinks this gains the Fire-Breathing trait for a number of minutes equal to the brewer's number of successes in making the item or the Stamina of the drinker, whichever is more convenient for the GM. The rating for the Fire-Breathing trait provided by this piece of equipment is 3.

Sap: A sack of sand or gravel designed to knock somebody out rather than killing them. A successful melee attack with a sap deals nonlethal damage to the target equal to your Strength.

Short Sword: A blade that can be one to two feet long used in melee combat. It has a lethal Damage rating of 3.

Wrench: A part of a mechanic's toolbox, a wrench is a good improvised melee weapon. It has a lethal Damage rating of 1.

Chapter VIII: Miscellaneous

This chapter covers miscellaneous stuff that doesn't really belong anywhere else.

Advancement

Your GM should give you 1 experience point per session (unless he is feeling generous). You can spend experience points to improve existing stuff or buy new ones. To improve an attribute, skill, or trait, you must spend a number of experience points equal to the square of the number you are improving it to. You cannot jump from one number to a number higher, you must pay for the intervening numbers.

For instance, to go from 3 to 4 in Intelligence, you have to pay 16 experience points (4 x 4 = 16). To go from 3 to 5, however, would cost 41 experience points (4 x 4 + 5 x 5).

New traits cost 6 experience points. New skills cost 4 experience points.

Healing

Non-lethal damage is healed at a rate of your Stamina rating per day. This assumes light activity (such as a desk job or staying at home and recuperating).

Lethal damage is healed at a rate of half your Stamina rating (rounded down) per week. This assumes light activity. If you are at 0 or lower Health from lethal damage, you must be hospitalized or otherwise taken care of in order to heal. You do not need to be taken care of when you reach 1 health.

Appendix A: Questions and Answer Section

Question: Why 'Objects'?

Answer: My major is computer programming, so I used a term that's important in my field. Each element

of the game system revolves around objects with properties. These objects in turn make up larger objects, which in turn make up the game engine. You're supposed to be able to remove the larger objects (which are really systems of describing objects and their properties in the game) from the game engine, replace them with something else that tackles the same problem, and not miss a beat.

Question: Why six-sided dice?

Answer: Because you can get them in regular stores without too much hassle. You could use dice with any number of sides if you wanted, you just have a 30% chance of getting a success on any one die. For convenience, here are the target numbers for various sides with the actual odds of getting a success on each die.

1d4- 4 (25%), 1d8- 7 (25%), 1d10- 8 (30%), 1d12- 9 (33%), 1d20- 15 (30%), 1d24- 17 (33%), 1d30- 21 (33%), 1d100- 70 (30%).

Just remember that if you're going to use a different die than the default, then -everybody- at the table should use that kind of die since the odds of success are slightly different for each kind of die.

Question: Why a dice pool system?

Answer: I could give you a long drawn-out answer which involved explaining how the range of numbers on a six-sided die is really low and that I wanted something that could be easily scaled up. Or I could just say "Because I wanted to, dammit".

Question: Why did you do this?

Answer: I was bored. Extremely bored. The kind of boredom that can only be inspired by a college professor who drones endlessly on about things that don't relate to the subject he's supposed to be teaching.

Question: Has this been tested yet?

Answer: Uh, no. I'm looking for lab rats- er, I mean playtesters. Contact me at lrdjhiaxus@aol.com

Question: I like your system and want to make a setting or something, can I?

Answer: I don't care. Heck, I'll lend you a hand if you want some help with mechanics.

Question: I don't like how mechanic X, so I'm going to change it. Will you get mad?

Answer: No. I'd like to hear about houserules and stuff to see if they work better than what I currently have. Probably end up with a whole chapter regarding variants (or a whole document unto itself). The ground rule is that the mechanics you make should be modular (that is, you can take it out and there would be a minimal fuss involved in doing so) and use the task resolution presented. It should also strive to reflect a genre or create a set of mechanics that doesn't exist yet.

Question: What the heck is a 'rules module'?

Answer: It's shorthand for "I haven't written it yet/It'd make the core design too complex". Basically I plan to write up more stuff in the future, but didn't want to include it in the core engine design.