GTA:O

Grand Theft Auto: Online
Design Document

v.1.20

Last Updated May 31st, 2001

Introduction & Glossary of Terms

Grand Theft Auto: Online will seek to move the action-based world of *Grand Theft Auto* into a sustained on-line environment where players will carve out their own fame and power in a *GTA* world shared by thousands of other players. *GTA:O* will create a complex urban environment that will use concepts like "turf" in order to foster a sense of identity and loyalty in players who log on to join a certain faction and commit crimes in the grand style created by previous *GTA* games.

This is a list of terms and opposite concept terms. More terms will be added as the project moves forward. At this stage, some of these terms refer to design strategies and concepts that might be discarded in favor of other strategies and concepts, and thus will be removed.

• **World** / The collection of game zone (or zones) that are part of the same reality. One multiplayer game of Cataclysm is a "world" for all intents and purposes. Whatever information or actions come into existence during gameplay are unique to that World.

• **Zone** / A discrete chunk of a World with limited access portals to other **Zones**. NOT a section that only has, say, one road into it but a completely separate entity that must be loaded up in order for a player to enter it. Think of Zones as levels in a shooter game. While limited information can be passed from zone to zone to zone in a World, the client only loads the state of the zone as opposed to the entire world.

• **Server** / A **World** definition that includes the concept of how many people are in that **World**. This is the popular usage of the term in the Massive Multiplayer continuity. While **Server** and **World** are almost interchangeable, you should use World when just discussing the real estate and Server when discussing the entire concept of players, terrain, etc.

• **Mirror Server** / Refers to an amateur version of the world created on a customers home PC. It will mirror the state of the "official" Rockstar servers. This concept is probably only viable with a **Big World / Free Floating** game model

• **Machine** / The physical device which stores and runs a **Server**. A **Machine** may run many servers or vice versa, depending on what design strategy is decided upon.

• **Big World** / Refers to the design strategy of one huge game world without discrete zones of any kind. The opposite of **Big World** is **Zone World**.

• **Zone World** / Refers to the design strategy based on a series of connected, discrete zones.

• **Free Floating** / This is the design philosophy where the player is free to log onto any server with any character and play with the stuff and experience that character has accumulated. Think of Counter Strike where you can save your character at the end of the night and log him onto another server altogether the next time you play. The design opposite of **Free Floating** is **Lock Down**.

• **Lock Down** / This means the player's characters are directly linked to individual servers. When a player creates a character it is on a specific server and can only be accessed in the future by logging onto the same server. This is the *Everquest* system and it makes each **Server** a community but restricts adaptability.

• **Faction** / An organization within the game to which player characters are aligned.

• **Reputation** / Players has a reputation with each faction in the game, a positive one with their chosen faction and negative reputation with the other factions.

• **Stats Check** / A 1D20 check against a player's stats attributes (strength, intelligence, etc.) These stats can never be over 20.

• **Skill Check** / A percentile check against the value of a player's skill.

Game Overview

Game Features

• **Full Immersion Into The Unique GTA World** / While *GTA:O* will offer a whole new world of on-line play, it will still look and feel like a GTA game and players who have faithfully followed the series will find all their favorite things while exploring a host of new options that only on-line play can bring.

• **Fully Fleshed Out Characters** / Players will be able to create a vast array of character types by taking one of several base "types" and modifying their initial statistics and skills. After this players will be able to choose a variety of clothing and accessories that will make their characters as interesting on the outside as they are from the inside.

• **In Depth Skill System** / Players will be able pick and develop skills over the course of a game that suit their style of play. Skills will improve in proportion to how often a player successfully uses them. By venturing out in to the world and attempting missions, players will help their characters grow. It's also a good way to prepare for the one time things go very wrong and a character will need all their skills to escape arrest or injury.

• **Limited Interior Locations** / Players will be able to enter relatively small interiors in order to meet other players, commit crimes or store items/victims. Player's will only be able to enter certain buildings. The interior of these buildings are in essence a pocket world created separate from the main world so that we do not have to pay the poly cost for interiors at all times.

• **Reflexive Random Mission Generator** / The random mission Generator in *GTA:O* will not only generate sensible varied tasks for players to perform but will also be capable of generating missions in reaction to the players success or failure. For example, if it generates a mission for one player to kidnap the daughter of another faction leader it may then generate a mission within the target faction to guard the same girl.

• **Infamous Criminal Factions** / Players will be able to join up with criminal gangs they are familiar with from Hollywood crime movies (the Mob, the Yakuza, motorcycle gangs, etc.). While players can operate directly on behalf of their faction, the fact they will be doing this in conjunction with other players will create a dynamic world filled with criminal politics, alliances, double-crosses, treachery, and outright street war.

• **Faction Advantages and Disadvantages** / Factions will have distinct attributes that will help to distinguish them from each other. For example, a player who joins the Mafia will have an easier time selling off stolen cars, but is more likely to be harassed by police units while driving around. A Triad player may have easier access to exotic weaponry but may be called into dangerous internal squabbles more often.

• **The Police as a playable Faction** / While almost all the police functions in *GTA:O* will be automated AI routines, we believe it would act an extra level of player interaction and enjoyment if we allow them to play as patrol officers as well. As a cop the player will patrol the city looking to stop and arrest other players as a type of no-holds barred "Dirty Harry" type. The faction can be balanced so that while a cop has great power as well as access to free weapons and vehicles, he must function under a strict set of rules and should he be caught violating them he will be demoted or fired and forced to become a free-agent criminal. This aspect opens up a world of player options, from undercover work to police corruption. And with the use of the instant

messaging system, criminal players can leak information on crimes to police players in order to put the kibosh on their rival's plans or gain favor with a cop in return for looking the other way sometime in the future.

• **Instant Messaging** / While not playing the game directly, players will be able to stay connected, at least loosely, to the *GTA:O* by using an instant messaging system that will allow them to send messages to and receive messages from other players. This can be handled in a variety of fashions. One option will be to create a tiny, stand alone application that connects to the *GTA:O* message server and allow player to communicate with other players just as they would in game. Another option would be to allow players to piggyback common messaging applications, like ICQ or AOL Instant Messenger, whichever the player preferers. The result is the same; players can contact other players while not in the game itself. This will serve to keep the game immersive even while the game is off and give a constant edge to the player's game persona that just isn't available in the current RPG market.

• **Individual Voice Broadcasting** / With *GTA:O* being an action oriented game, it will often be difficult for players to stop and type messages to one another. Depending on bandwidth considerations, using the standard PC microphone plugged into a soundcard, players will be able to transmit short, verbal messages to one another. A simple facial motion (i.e. mouth movement) will accompany the messages from the player character that is speaking to help other players identify who is speaking. These messages, besides adding an easier way for players to communicate, also introduce a new level of interactivity, as players will now have to be careful about what they say out loud around players they don't know (and who might belong to a rival faction). However, a massively multiplayer, persistent, online world is a big consideration on it's own. If bandwidth becomes a serious issue, this system will likely have to be scaled back and either replaced of supplemented by the ubiquitous text system and a system of canned phrases.

• **Pirate Radio** / *GTA:O* will feature pirate radio like the one found in the movie *The Warriors* that will provide information and rumors to players online. This radio, using the MP3 format (possibly streaming, but more likely as small files quickly loaded when a player first enters a server), will be easily accessible to the player so that it can be used to feature faction or server news or just play music preferred by the server owner. Visiting players can of course turn it off.

• **Clothing** / While other on-line games using 3-D characters have a very limited number of "skins" available for players to use, *GTA:O* should play to consumers needs to work out their crime movie fantasies and not only provide a large variety of faces and body types models but also allow players to change their clothes. We can all think of movies where a tuxedo was right for one crime but the next day garbage man coveralls were needed. *GTA:O* should accommodate this kind of stylish play in order to keep the experience fresh for players.

• **Meeting Places** / To foster that gangland feel, players should be able to meet in set faction areas straight out of the movies. Mafia players meet in the back of a certain restaurant while Yakuza members meet in an office building. It is these places that will allow players to join in small groups and plan jobs. A billboard or computer screen in the room can act as a notice for jobs that are being offered by other players. A high-ranking faction AI character can be clicked on in order to see if there are any rumors or faction jobs available to a player. A simple to use drag and click map / blackboard system can be implemented as a kind of player "close chat" system where plans can be made and drawings made on maps so that player can plan intricate crimes and make it clear to other players who should do what and when they should do it.

1. Game Flow

Introduction

Grand Theft Auto: Online will take the successful *GTA* franchise and turn it into a perpetual, online world, where players can create cops and robbers as they wish, and then play out their Hollywood crime film fantasies with hundreds of other gamers.

The core design philosophy of *GTA:O* will be to strike a balance between the action series on which it's based and the character development gameplay features found in today's MMORPGs. Games where player's can wield guns and run around and shoot indiscriminately already exist. The focus of *GTA:O* will be to present players with missions of various complexities that they resolve using a character they have a personal involvement in from training and improving that character. These missions, when carried out will be a mix of action (both gunplay and driving), roleplaying and character building.

Character Growth

GTA:O is a game based on a realistic, albeit over-the-top, world. Therefore we believe that traditional RPG elements like "Levels" for characters will actually detract from the experience of trying to be a criminal mastermind. Instead of contrived experience levels, *GTA:O* will offer the real-life perks of success to players - Getting better at your job, more money, more stuff and more respect.

Player's skills will slowly increase over time allowing them to do more in the game and do it with more style. Picking the digital lock of an armored car on the fly is something to brag about, far better than the new guy who can only pick a car door. This game will offer a large number of useful skills so that characters will evolve towards what the player wants instead of being constricted inside artificial classes.

Money and goods will also be much more relevant in this game. We will provide the items of increasing expense so that rich and powerful players will feel that way. And more importantly these items will be as fragile as they are in the real world. That beautiful high-speed car you bought could be destroyed tomorrow, but that is what makes it so precious and cool today.

This will be a game of highs AND lows and that is the hook that no other MMOG offers right now. You can only go up in other games, which is fun but eventually boring. In *GTA:O* your fortunes will rise and fall and every day will be an exciting fight to keep what you have and gain more.

Rising within the Factions

A player's ranking within a Faction will be dynamic as well and will reflect their fortunes. While they may gain enough reputation to be called a Lieutenant that is not permanent. The faction systems will be weighted to only allow so many players to be of a certain rank. If someone rises farther, the lowest of that ranked will be bumped down. Competition and even betrayal should run rampant and keep things fresh.

The benefits of rank within a faction will be two-fold. The first will be in the quality of missions offered, especially steal missions that will offer bigger and bigger rumors of targets as players move up the ranks. Of course, the risk of these missions will increase as well. The other benefit is getting access to more sophisticated and powerful equipment and weapons. All gangs have a fairly steady flow of heavy weapons and powerful thieving equipment but they are hardly likely to sell precious M-60 heavy machine guns to some new punks off the street. The experienced criminal gets the best tools and can hand these out to player characters that work for him as he sees fit. In this way, what has come to be called "Twinking" in fantasy RPGs, becomes a viable part of the economy and a very real way for players to express their power and position in a useful way. Overpowering low-level characters is less of a risk in the long run, as inevitable arrest results in the confiscation of weapons and contraband.

Difficulty Progression

The *GTA:O* Mission Generator will take into account the "level" of a character and will tailor mission requests accordingly. A new character will not be offered a job that requires 5 advanced players with powerful weapons and elite skills. Similarly, advanced players won't be offered small jobs, like running out and stealing a single car, or sticking up a liquor store.

However, the game is relatively wide open for player interaction. If a new character wants to undertake a crime spree of their own (like stealing all the sports cars they can find) they can. As well, advanced characters can accept young characters into their group to carry out a mission, providing them with equipment and people to watch their backs. In this way, young characters can get a taste of the big leagues, even when just starting out.

Mission Location Balance

Location plays a factor in the game, as the success of a certain faction dictates the size of their territory. The closer a player is to the heart of an enemy faction's territory, the greater the risk to them (from faction soldiers, high concentration of enemy faction player characters, etc.). The mission generator will not send new characters to whack the Mob's don in the heart of Little Italy, trying to send them to neutral territory or the outskirts of faction territory. As player's advance, missions will be weighed to send them into riskier and riskier places.

2. Playing the Game

Registration, Login and Accounts

Fig. 2.1 – Front End screen flow
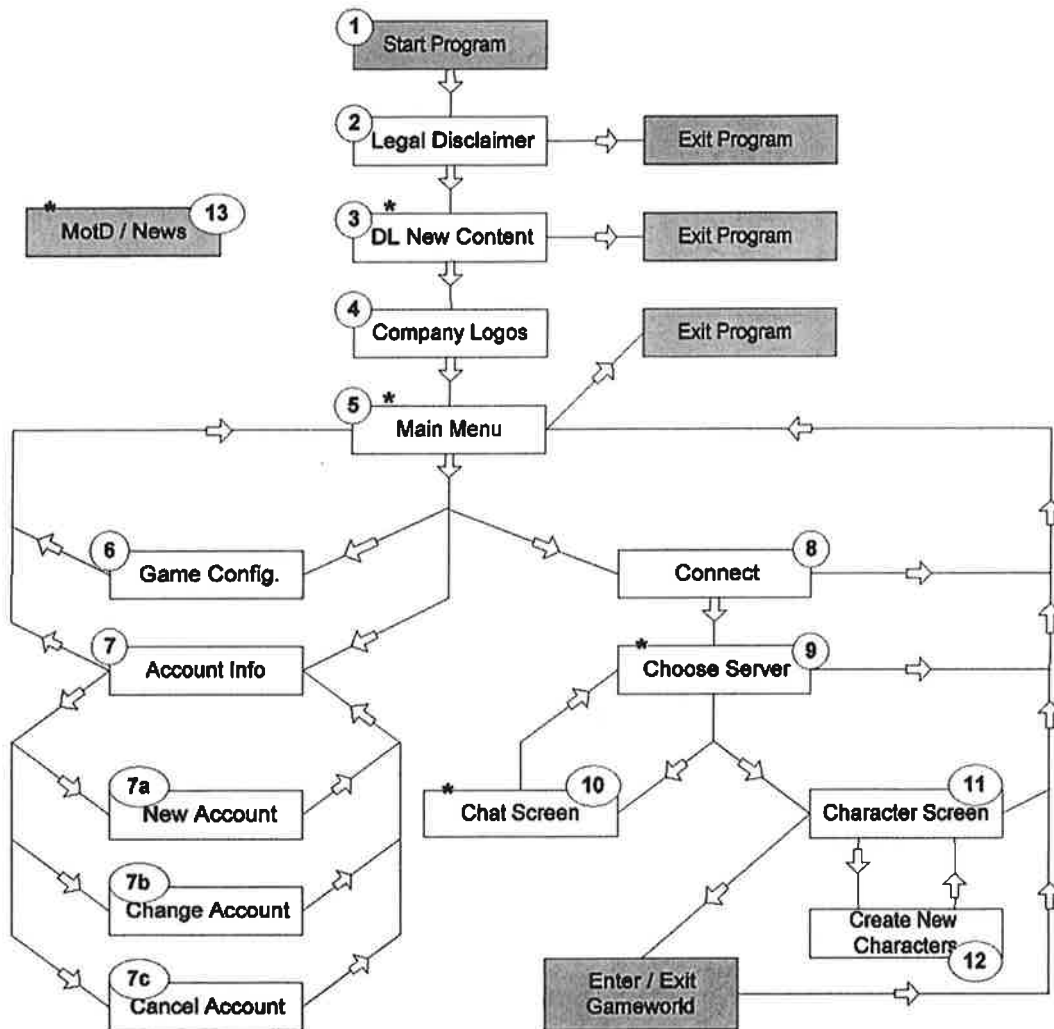
1) Player has installed game and runs the program.

2) Window opens, outlining the agreement of legal terms regarding submission of account information, payment information, and matters concerning use of software and the possible installment of new content / code / art in the next step. Players can choose to not except the terms and close the program at this point. Provided by Rockstar.

3) A window opens, allowing players to begin downloading any new auto-patches with code or content. The window will outline the changes, if any, and provide any other pertinent information (like messages of the day, rumor pieces, etc.) Receive system information / message of the day, etc. Players can close program at this point.

4) Pertinent company logos are shown here.

5) Main screen, from which the player has a number of choices. Players can close program at this point. Other options, such as credits, etc., might be added here at a later time. The other principal options are as follows;

6) Player's can make adjustments to game settings, such as display, controls, etc. This will be outlined in greater detail later.

7) From here, players can access three options regarding game accounts. They can create new accounts, make adjustments to existing accounts (change payment method, length of account payment, etc.), and cancel existing accounts.

7a) Players set up new account, submitting their registration information (name, address, etc.), choose payment options (with credit card – monthly, six months, etc.), and set up their account information (login and password). Players can set up more than one account. The information is submitted and saved with the Rockstar servers.

7b) Players can change account information. The information is submitted and saved with the Rockstar servers.

7c) Players can cancel accounts. The information is submitted and saved with the Rockstar servers.

8) Players login, submitting the login and password for the account they'd like to use.

9) Players choose a server. The screen will provide a list of servers, whether they're up or down, how many people are on them, etc. Perhaps it will outline the strength of the factions there.

10) Players can be taken to a chat server interface. This chat server may be a shared system that can also be accessed through web browsers, peripheral applications, and portable systems. The chat server should have rooms covering general discussion and technical support, with the capability for players to start their own rooms. Rooms devoted to particular factions is also a possibility, but similar chat rooms in other games appear to be all but ignored.
Another possibility might be to tie the chat server into the faction headquarters within the game itself, so that players within the game can talk to players not yet in the game world.

11) Players will be able to create up to 4 characters per server (the character information will be saved on each server). The characters are listed here. Players can choose an existing character and enter the game. They can also enter the character management screen and create or delete characters.

12) Players can create a new character, provided one of the 4 slots are open. If they'd like, they can also delete a character as well. Character Creation will be outlined in detail elsewhere.

13) A Message of the Day, which provides players with pertinent information regarding events, system maintenance, and new content / code changes, may need to be accessible from a number of screens leading into the game and possibly within the game itself (say, at a player's faction HQ). Where access to this news should be placed will rely on the final navigational layout of the game screens, but these are the likely places.

Logging Out and Character Saving

Players will leave the game world in one of two ways. They will either choose to leave the game or their connection will fail (either through net congestion, or application failure, cat pulls the cord out of the wall, etc.)

When a player chooses to log-out of the game, they need to head to a "camping point", a designated point wherein they can log out of their character. The world of *GTA:O* requires a certain amount of realism in the way characters interact with the world, so it is fitting that a player should have to go to their faction HQ, bars / clubs, safe houses, or park benches to log out, rather than sit down on the street and disappear.

Whenever a player leaves the game, it takes 30 seconds. This includes when a player's connection is lost on purpose or accidentally.

In the event that a player loses their connection, legitimately or otherwise, the next time they log in, their character will appear at the nearest camping point.

Besides realism, there is also a practical reason for making players use designated camping points and that's to keep them from using camping as a way to circumnavigate barriers that they'd otherwise need to use skills to overcome (i.e. A player accepts a mission to crack a bank safe during the night). The player enters the bank during business hours, camps or aborts their connection, then logs back into the game after the bank is closed. They are now inside the bank without having to deal with the locked bank doors and the security alarm hooked up to them.

It will be important to keep track of the items and stats a player accrues throughout a game, so that in the event that they log-out or crash, they will restart the game without any loss of items or experience. The best way to limit lost character information to negligible levels is to "save" the character attributes, etc., every time they change. If everyone were leveling, gaining experience, and adding / subtracting items like crazy, then the amount of information being saved would probably be too much for the character server to handle, but this will never happen.

Places where a player can log out are;

Faction HQ – The most logical place to save a character and log out is at the safest place in the game for a player, their faction's HQ.

"Owned" Properties – Just as logical is for players to logout in places they are renting, such as apartments, brownstones, warehouses, etc.

Park Bench – Scattered throughout the level are park benches. All a player has to do is to sit in them and they can begin logging out. These are not safe zones though. During the 30 seconds logout time, the player may still come under attack.

All-Night Bars / Clubs – While every establishment in the game world, from banks to clubs to grocery stores are fair game for missions (robbery, hits, etc.) there is one class of establishment that cannot be robbed. Bars / Clubs with All-Night signs will be open all the time and are places where players can log-out of the game. Most mission types can be carried out in these bars (hits, kidnappings, meeting NPCs, etc.), with the exception of actually interfering with the bar or the bars employees. These bars cannot be robbed and the bartender cannot be messed with, without consequence.

Skill Resolution, Time, and the Option to Logout

Certain skills can be used to carry out certain tasks that take a considerable amount of game time (anything over a half an hour). These tasks, like repainting a stolen car or performing plastic surgery, will give the player the option to begin the task, then logout. This is so that players can leave one character to carry out the task and login with another character. If the first character completes the task and the player has logged out, that character will then leave the game. For the period of time they are completing the task, they are unable to undertake other tasks. This is to avoid players from using this opportunity to hand items between characters.

Character Creation

When a player selects an empty slot on the **Character Screen**, it will take them into the first character generation screen (Fig. 2.2). This screen allows players to name their character, shuffle their base attribute points as they wish (in the prototype game and the figure below, the base number of attribute points is 60. No attribute can be dropped lower than 5). The Melee and Range Attack attributes are calculated from the other attributes (the basic prototype formula is outlined in the Character Attributes section).

Players can also choose from one of the factions. Depending on the faction they choose, the base skills section will reflect the free skills awarded characters in that faction. For example, a member of the OMGs will have the Driving skill for motorcycles, whereas a member of the Mob will have Pistol or something.

Once players have completed these three easy steps (name, attributes, faction), they can proceed to one of the two remaining character creation screens. One is **Additional Skills** (Fig. 2.3) – here players are allowed to choose a certain number of additional skills (depending on what they think they'd like to do in the game (crack safes, assassinate, etc.). The final screen is **Character Style** (Fig. 2.4) – this screen allows players to personalize the look of their character. They can tweak body type, distinguishing features, and clothes (clothes make the man).

When the character is the way the player wants it, they click the finish button and they're returned to the Character Screen. They can click on the new character or any previously generated characters, launching them into the game. These characters, once the player clicks the finish button on the Character Generation screen, cannot be altered, except through their actions in the game. Skill and attributes can be improved and altered, new clothing purchased, faction reputation improved or ruined to the point that a player may change factions. Players have the option of deleting any of the characters if they want to use that slot to generate a new character.

Fig. 2.2 – Approximate Character Stats Screen (first page)

NAME MONTY CRABAPPLE

YOU HAVE [0] ATTRIBUTE POINTS.
RIGHT CLICKING AN ATTRIBUTE WILL ADD AND
LEFT CLICKING WILL SUBTRACT A POINT

STRENGTH [8]   PRESENCE [14]
AGILITY [12]   INTELLIGENCE [8]
DEXTERITY [10]   PERCEPTION [8]

MELEE ATTACK [10]   THESE ARE
RANGE ATTACK [9]   AUTOMATICALLY
                      GENERATED

FACTION   THE YAKUZA   ▲▼

BASE SKILLS

BRAWLING: 10
PISTOL: 8
JUMPING: 9
CLIMBING: 12

PICK CHARACTER STATS FOR ME!

BACK   NEXT

CANCEL

Fig. 2.3 – Approximate Additional Skills Screen (second page)

YOU HAVE [30] SKILL POINTS.
RIGHT CLICKING A SKILL WILL ADD AND
LEFT CLICKING WILL SUBTRACT A POINT

ADDITIONAL SKILLS

APPRAISAL: 0
BUGGING: 0
BRAWLING: 10
CARRY: 0
CHEMISTRY: 0
CITY SENSE: 0
CLIMBING: 12
CONCEALMENT: 0
DEMOLITION: 0
DODGE: 0
DRIVING CLASS A: 0
DRIVING CLASS B: 0
DRIVING CLASS M: 0
DRIVING CLASS W: 0
DISGUISE: 0
ELECTRONICS: 0
JUMPING: 9
PISTOL: 8

PICK ADDITIONAL SKILLS FOR ME!

BACK   NEXT

CANCEL

Fig. 2.4 – Approximate Character Style Screen (third page)
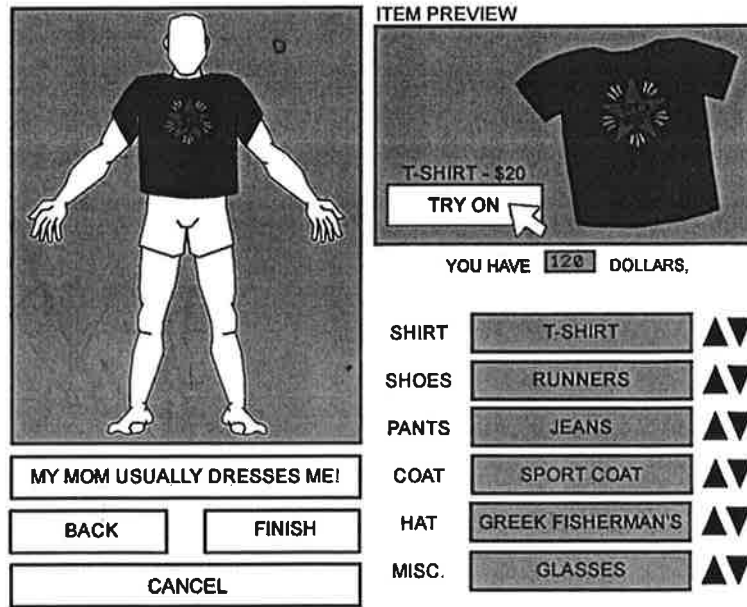
Character Attributes

As we get deeper into a character's stats and skills, there are two terms that should be noted before you continue, as they are similar, but used in two entirely different contexts. A **Stats Check** is a 1D20 check against a player's stats attributes (strength, intelligence, etc.) These stats max at 20. The higher the stat, the easier it is to roll under the stat on a 1D20. A **Skill Check** is a percentile check against the value of a player's skill. Skills, in general, go to 100 (it is possible to go up to 200, but it's very very difficult). Again, the better the skill, the easier it is to roll a percentile under that skill value.

Player characters have 8 attributes that are used to calculate everything a player does in the game world. In some cases they are used to dictate an automatic skill (like running). Most times they are used (possibly in conjunction with other attributes) to calculate certain special skills.

Strength – This attribute is the raw power a player character has. It determines the amount (in pounds) of items a player can carry without becoming encumbered and the amount of force a player brings to bear against the world around him / her (struggling with another character, destroying a mailbox with a bat, lifting a corpse, etc.)

Dexterity – Covers all skills that require nimble fingers and steady hands.

Agility – This attribute dictates a character's physical skills, like how fast an unencumbered player can run. It also dictates the height to which a player can jump and climb over objects (like fences, etc.) and how likely and how well a player can dodge attacks.

Charisma – This attribute dictates a character's ability to interact with NPC characters. This is not the same as reputation, which only applies to characters in opposing factions.

Intelligence – This attribute covers a character's ability to undertake complex problems within the game. A good example is hotwiring a car. Parked cars don't have their keys in them, meaning a player will have to take the time to hotwire the car. How successful and how quickly a player is at this task is resolved using Intelligence v. the difficulty of the task.

Perception – This attribute covers a character's ability to look for details in the world that aren't apparent to casual observers.

Range Attack – This attribute covers a character's ability to use firearms, missile launchers, and any other ranged weapon. The value of a person's Range Attack ability is calculated using their Dexterity and Perception attributes. The value, though the final calculation will likely change, is:

$$Dex. + Per. / 2 = Range Attack$$

Melee Attack – This attribute covers a character's ability to fight at close range. The value of a person's Melee Attack ability is calculated using their Strength and Agility attributes. The value, though the final calculation will likely change, is:

$$Str. + Agi. / 2 = Melee Attack$$

Specialized Skills

As we get deeper into a character's stats and skills, there are two terms that should be noted before you continue, as they are similar, but used in two entirely different contexts. A **Stats Check** is a 1D20 check against a player's stats attributes (strength, intelligence, etc.) These stats max at 20. The higher the stat, the easier it is to roll under the stat on a 1D20. A **Skill Check** is a percentile check against the value of a player's skill. Skills, in general, go to 100 (it is possible to go up to 200, but it's very, very difficult). Again, the better the skill, the easier it is to roll a percentile under that skill value.

The level at which a player can employ a skill is typically, though not always, calculated using a couple of attributes. However, each skill is attached to a primary attribute. To make listing and outlining these skills simple, they are listed according to their primary attribute. A number of these skills won't be available to members of the police faction. Conversely, certain skills will only be available to police characters.

Certain skills are universal to everyone in the game, meaning that everyone will start with some ability in those areas. In addition to that, each faction has skill bonuses, meaning that every character in that faction will have additional ability in certain skills. Every other skill has to be chosen by the player when they are creating their character or at certain points in the game when they have the opportunity to improve their character (those opportunities are infrequent). The faction skill bonuses are listed in the .

Some skills come at face value. Climbing for example, or jumping – these skills are very straight forward in what they dictate. Others have many subsets within the skill that the player acquires as that skill improves. The fighting skills are a good example. A player that has the boxing skill will begin with jab attacks, but as they progress they will gain new attacks, such as uppercuts and round houses. These subsets have different attributes of their own. A jab is fast, but low damage. A roundhouse does more damage but isn't as fast to use. Another example would be counterfeiting. In the beginning, a player will be able to examine money to determine if

it's fake, but they won't be able to make counterfeit money of their own until the skill improves a great deal.

Skill Staging

Many of the skills outlined here will be staged, meaning that as the player improves that skill, new tasks in that skill will become available. In the following list of skills, certain staging has been listed (like Surgery in the Medical skill), but the list is by no means complete.

The idea behind staging is two-fold. Firstly, it's to make skills more interesting to players by allowing them to do a variety of things just in that one skill. Secondly, in order to access these sub-skills, players will have to actually use the skill, offering goals for role-playing.

This staging will be quite simple for certain skills (Running, etc.), offering changes throughout the improvement life-span of the skill, which in turn leads to more options. For example, the Electronics skill has a base ability to Hotwire cars. Later, as the skill improves, it will have the ability Build Device added, allowing players to create a variety items, each with their own difficulty rating to successfully build). Lastly, some skills offer a great deal of variety, such as the Melee Attacks, like Martial Arts and Boxing, which will have a number of new "moves" (high kick, upper cut, round house, axe kick, etc.). In the end, the list of a couple dozen skills turns into hundreds of possibilities for players to choose from (i.e. using the fast, but weak rabbit punch, or the slow but powerful left hook).

Base Skills

Skill	Starting Value	Linked Attributes
Climbing	Strength + Agility	Strength / Agility
Concealment	5	Intelligence / Perception
City Sense	10	Intelligence / Perception
Dodge	Agility x 2	Dexterity / Agility
Driving Class A	30	Dexterity
Driving Class B	10	Dexterity
Driving Class M	20	Dexterity / Agility
Driving Class W	30	Dexterity
Evasion	5	Intelligence / Perception
First Aid	15	Intelligence
Gambling	5	Intelligence / Perception
Hotwire	15	Dexterity / Intelligence
Jumping	25	Strength / Agility
Language - English	100	Intelligence
Legal	5	Intelligence / Charisma
Lock Picking	5	Dexterity / Intelligence
Medical	15	Intelligence / Dexterity
Melee Att. Brawling	25	Strength / Agility
Melee Att. Grapple	20	Strength / Agility
Melee Att. Bludgeon	20	Strength / Agility
Melee Att. Long Blade	5	Strength / Agility
Melee Att. Short Blade	10	Strength / Agility
Melee Att. Chop Blade	10	Strength / Agility
Pickpocket	15	Dexterity / Intelligence
Range Att. Rifle	15	Agility / Dexterity
Range Att. Pistol	20	Agility / Dexterity
Range Att. SMG	15	Agility / Dexterity
Running	(Strength X 2) + Agility	Strength / Agility
Swimming	(Strength + Agility) x 1.5	Strength / Agility
Tailing	5	Perception
Throw	Dexterity x 2	Dexterity / Strength

Additional Skills

Skill	Starting Value	Linked Attributes
Appraisal	0	Intelligence / Perception
Bribery	0	Charisma
Bugging	0	Intelligence / Perception
Chemistry	0	Intelligence
Counterfeiting	0	Intelligence / Dexterity
Demolition	0	Intelligence / Dexterity
Disguise	0	Dexterity / Perception
Electronics	0	Intelligence / Dexterity
Forgery	0	Intelligence / Dexterity
Fast Draw	0	Agility / Dexterity
Fencing	0	Charisma / Intelligence
Gunsmithing	0	Intelligence / Dexterity
Hacking	0	Intelligence
Intimidation	0	Charisma
Interrogation	0	Charisma / Perception
Language - Italian	0	Intelligence
Language - Japanese	0	Intelligence
Language - Chinese	0	Intelligence
Language - Russian	0	Intelligence
Language - French	0	Intelligence
Melee Att. Boxing	0	Strength / Agility
Melee Att. Martial Arts	0	Agility
Mechanic	0	Intelligence / Dexterity
Pharmacology	0	Intelligence
Range Att. Missile	0	Dexterity
Range Att. Artillery	0	Dexterity

Skill Definitions and Explanations

Appraisal – The ability to gauge an item's worth and provide a description of the item. For example, someone might appraise a diamond necklace. If successful they could be provided with a better description (when it was made, who made it, etc.) and its approximate value. The better a person's appraisal skill, the more accurate their appraisal will be.

To appraise the item the system performs a skill check using the player's appraisal skill. If the check fails the player is informed he has no idea what an item may cost. Should the check succeed the system then calculates how "good" a guess it was by seeing how much under the skill level the skill check was. From this the appraised value will be determined using the actual value as a baseline for a plus minus calculation.

Items' Actual Value = AV
Value rolled during skill check = R
PC's appraisal skill = PS

Variance = $((.5*AV) + ((1- R/PS) * (.5*AV))) - AV$

Appraisal = AV (+ or –) Variance.........+ or – to be determined by 50/50 chance.

Bribery – When dealing with NPC characters, sometimes it takes a little something to grease the wheels. How much it takes depends on the mission. Typically, a mission will set a number value representing the asking amount for the bribe. A player then uses the skill to attempt to carry off the bribe. If unsuccessful, the asking value increases, but the player can try their luck again. Some missions may limit the number of times a player may try to bribe again (depending on the nature of the NPC character), but it's also possible, if the player is willing to put up the money, for them to try as often as it takes or until they run out of money (whichever comes first).

Bugging – This skill is required to build and place listening devices. A number of factors are involved, depending on a player's skill level. What is the device attached to (a fixed location, another player, a payphone, another player's cel phone, etc.)

Climbing – Throughout the city are obstacles, from cars, walls, trash bins, crates, etc. Anything over a certain height will be too high to jump over or onto, so players will have to climb up onto them.

As a player climbs, every ten feet a skill check is made using the PC's climbing skill. Failure results in a fall. Different surfaces are rated for different difficulty ratings expressed as a percentage to be subtracted from the PC's climb skill before the check is made.

Climbing Check Value = PC's Climbing skill – Climb Rating of surface

Concealment – This skill works to help conceal items and weapons against other player's perception checks as well as spot weapons on other characters or items hidden in an area.

Whenever a player puts an item into a clothing storage slot like a pocket or a location with a hidden storage point like a couch, it is assumed the player wishes to conceal the item and so their conceal skill is consulted when determining the concealment value of the item in that

position. This value will be expressed as a percentage to be used against a spotting player's Conceal skill.

Concealment value of Item= Item's Concealment rating + Conceal Modifier of item location + Player's Conceal Skill.

To spot an item on another figure or in a storage point, the PC gives the examine command and a check is made using the PC's conceal skill and perception attribute. If successful a red glowing outline of the weapon or item will appear on the examined figure or storage area.

Spot check Value = (PC's Conceal skill + PC Perception Skill) – (Item Concealment value + (1/foot between PC and target item))

Counterfeiting – The ability to create counterfeit money as well as distinguish funny money from real money.

City Sense – The ability to find your way around the city. Once every 30 seconds a player will be able to activate their city sense skill. This option will bring up a type field where the player can enter an address or just a street name. The system will then make a skill check based on the player's city sense skill. If it succeeds a arrow will appear on the HUD pointing to the most direct path to that location or street intersection. The arrow will last as long as the player's City Sense Skill in seconds.

Chemistry – The ability to create relatively simple chemical compounds, such as explosives, poisons, etc. In order to create chemical compounds like pharmaceuticals or explosives, a player will need to purchase Chemical Lab kits of various sizes and complexity, as well as ingredients. More complex and useful compounds will be more difficult to make and so have a difficulty rating that is subtracted from the players Chemistry skill. Any time a player makes a chemistry roll a disaster check is made as well using the compound's disaster rating and the player's chemistry skill to counter it. For example, nitroglycerine will have a very high disaster rating while aspirin will have a very low one.

Players trying to combine random chemicals will often get inert compounds but will occasionally stumble across the correct formula for a poison or drug. An analysis roll, which is a simple chemistry check, will tell them what they have made but if they fail they will have no choice but to test it on himself or herself or another player.

Chemistry Check Value = Players Chemistry skill – compound difficulty rating

If the disaster check succeeds a chemical explosion has occurred with the size and damage of the blast derived from the disaster rating of the compound.

Disaster check Value = Disaster rating of compound – Players Chemistry skill

Demolition – The ability to place charges for explosive damage, including blowing doors, destroying buildings, and bombing areas or objects. This skill also covers the building of timed devices.

The demolition skill is checked both for the creation of an explosive device and the placement of it. As in chemistry, explosive components and materials have difficulty and disaster ratings. Failure in creating a device means it is useless. The disaster check is then consulted. When placing a demolition device a simple Demolition skill check is made. Success means it has the desired effect, failure means it does too little damage and the object is unharmed. A disaster check after failure to place properly will result in an immediate explosion.

Demolition device Construction Value =
Player's Demolition skill – component difficulty

Disaster check Value = Disaster rating of explosive – Players Demolition skill

Dodge – When someone swings their fists, knife, or cudgel at a player, the dodge skill allows them the opportunity to avoid or limit the damage inflicted on them.

Driving – Every character in the game can drive a car and other vehicles, but these vehicles all have handling attributes. The driving skill, and especially specializations in certain types of vehicles, make the vehicles more forgiving. Cars with slow pick up (like what happens when a player has to change the car into reverse), pick up speed a little bit better, handle better, etc.

A PC's driving skill is checked against the difficulty of a car once every time a PC gets into and attempts to drive that car. If they get out and get back in again, the skill is checked again.

Class A – Cars, vans, pickups, and other vehicles.
Class B – Oversized vehicles, such as buses, fire trucks, and other heavy equipment.
Class M – Two-wheeled vehicles, such as motorcycles and mopeds.
Class W – Small engine watercraft.

Disguise– If you can't afford surgery, disguise yourself. For a limited time, a player can affect their level of recognition through the use of a disguise. Again, the level of the skill dictates how extensive a disguise it is.

Electronics – By silencing an alarm, players attract less attention while they hotwire a vehicle, break into a building, etc. At the skill's lowest level, PC's can attempt to hotwire cars (but building electronic bugs, etc. will only become available later in the skill). While cars that are 'jacked will have their engine running, parked cars won't. In that instance the player will have to hotwire the car. Hotwiring a car takes time and effort, which increases the chance that the player may be caught or encounter resistance (from the owner for instance). This goes double if the car has an alarm. The faster a player can make their get-away, the better for them. The hotwire skill decreases the time it takes to hotwire a vehicle.

Evasion– The ability to lose a pursuer, either police or someone using the Tailing Skill to chase or follow the player.

Fast Draw – As weapons can be concealed in clothes, the time it takes to draw a weapon is a factor. This skill allows a player to have a faster draw time on concealed or holstered weapons.

Forgery – The ability to create fake documents and papers. Certain documents, like forged permits or what-have-you, will require a player to gather the blank permit and a completed example, then apply the skill to create the forged document.

Fencing – The ability to sell stolen items off to a fence / pawn shop.

First Aid – In contrast to the Medical skill, First Aid is meant for use in the field and serves one function – to patch players up and restore health. Players, when injured, will "bleed out", meaning that when damage is done the function of that area will slowly decrease. First Aid will stop the health loss (until damaged again) and return a small amount of health points. However, to completely repair the injured area a player must seek Medical assistance (either from an Ambulance, the hospital, or someone with the Medical Skill).

Gambling – A handy skill that allows a player to gamble with NPC characters, which is a great way to win more money and items.

Gunsmithing – The ability to alter the specifications of a weapon, such as building and attaching a silencer to sawing the barrel off a shotgun. Also covers repair and maintenance of weapons.

Hacking – The ability to access and alter information systems, such as the police mainframe, and message boards for other factions.

Interrogation – Similar to Intimidation, in that it allows a player to attempt to get information from an NPC character. Unlike Intimidation, it doesn't act as a deterrent to the attention of possibly hostile NPC characters.

Intimidation – Certain missions will require players to interact with NPC characters to get information or items, etc. Players with an intimidation skill will be able to try and gain cooperation / avoid hassle with these character without resorting to violence, which can be useful if you don't want to attract extra police attention or suffer a reputation hit with other factions. It can also offset bad reputation with other faction, lowering the chances that enemy faction soldiers will attack a player.

Jumping – Certain objects in the world can be jumped over. This skill dictates how high, how far, and from how high up a player can leap (i.e. how much damage is mitigated when jumping from heights). These three factors outline how well a player can make certain maneuvers, like jumping from building to building, up onto cars, and down from single story rooftops, etc.

Jumping modifies both the distance a character can jump and the damage they take falling.

Vertical Jump Distance in cm = 80 + Jump Skill

Falling Damage in hit points =
1d4//every 10 ft fallen – (character's jump skill/10) + ((Distance Fallen/10 –1) * 3)

Languages – There are a variety of languages in the game. In order to understand a given language, a player must have some skill in that language. These languages aren't real languages, but part of the text interface. A player who knows how to speak Italian can opt to "talk" in Italian. In such a case, anything they type will appear as gibberish to players who don't have any skill in that language. Some of the languages found in the game are;

Italian (The Mob)
Japanese (The Yakuza)
French (Dogheart Massive)
Chinese

Russian

Legal – This skill affects interaction with the police and the time in which a player is in jail (as in the short period of time a player is in the slammer when caught, not the sizable, but temporary ban to unruly and disruptive players as discussed elsewhere). For instance, arrest might be avoided if a player is chased and caught, but isn't carrying anything incriminating. This is balanced against a player's Recognition.

Lock picking – Getting into things you're not supposed to often means working around a lock. While brute force is an option, it's not always the best way, as force attracts attention. If a player can pick a lock, they are less likely to be caught in the act.

Mechanic – Covers all matters of working on a vehicle, from improving it's engine performance and speed, to altering the car to withstand an attack. Also includes the ability to repaint cars. While players have the option of using re-spray operations throughout the city, doing so leaves a trail for police and other players to follow. Altering the color of a car in complete secrecy requires the repaint skill. As the skill improves, the time it takes to repaint the car decreases.
(see Skill Resolution, Time, and the Option to Logout)

Medical – The Medical skill is similar to First Aid in that it repairs wounds and restores health. However, the Medical skill results in greater health recovery and permanent wound repairs (unlike First Aid, which is more of a stop-gap skill). The downside to the Medical Skill is that it takes a matter of minutes to carry out, meaning it's dangerous, if not outright useless to use in the middle of a firefight. The Medical skill is best used in a safe location, such as a PCs rented apartment or what-have-you.

This skill also includes Surgery. Surgery is not about healing, but about alteration. The surgery skill allows players to alter another player's face through plastic surgery. How extensive the changes are depends on the skill of the player. At low levels, only small aspects of person's face can be changed (eyes, nose, etc.). As the skill improves, larger changes can be made, like changing an entire face. Depending on the size of the change, the level of recognition a player has for any outstanding crimes will change accordingly. However, surgery is time consuming, so as player's won't undertake it on a whim, but only as a last resort.
(see Skill Resolution, Time, and the Option to Logout)

(Melee Attack) Boxing – Pure fisticuff fighting. Throwing punches is relatively slow, but the power involved in a solid hit is much greater compared to other martial arts.

(Melee Attack) Brawling – A balance between the fast and furious, all limbs fighting of martial arts and the by-any-means brutality of boxing.

(Melee Attack) Martial Arts – Using all body parts and targeting anywhere on an opponent, martial arts score lots of hits, but the power isn't as great as a solid punch, certainly not at the basic level.

(Melee Attack) Grapple – Grappling is the ability to manhandle someone against their will. This skill is used to pull people from cars or to subdue a criminal (if the player is a police officer).

(Melee Attack) Bludgeon – Blackjacks, saps, pipes, baseball bats and socks filled with pennies all constitute as a bludgeon weapon.

(Melee Attack) Long Blade – A long blade weapon is any weapon over 12 inches, like a machete.

(Melee Attack) Short Blade – A short blade is anything under 12 inches, like a switchblade, ice pick, stiletto, etc.

(Melee Attack) Chop Blade – A certain number of blades are odd enough that they aren't used the same as a long or a short blade. An example would be a butcher's knife.

Pharmacology – The ability to create complex chemical compounds (i.e. drugs)

Pickpocket – With this skill, a player can lift an item off another character. The level of the skill covers two aspects of pick-pocketing; accuracy, meaning the ability to target and lift particular items, and technique, meaning how well you are able to lift an item without a target noticing. As a player's skill improves, so does their ability to carry out these two aspects. Initially a player will only be able to attempt blind pick-pocketing – lifting items at random without knowing what they're lifting. As the skill improves, they will have the added ability to target particular items (such as money, weapons, tools, etc.). Player's of any skill level will be able to target specific items provided they have been informed of the item by a mission ("Louis always carries the office keys in his pocket. We need 'em for a job. Go get 'em").

Though a player may have the ability to target a specific item, it alters their technique – as such, a player may opt to target blindly, so the chance of success will be higher, or more importantly, the chance they'll be caught will be lower.

(Range Attack) Rifle – Long barreled weapons. Useless at close range, but excellent at long distances

(Range Attack) Pistol – The opposite of rifles. Excellent at close range, lousy at long distances. This skill covers both revolvers and semi-automatic pistols.

(Range Attack) SMG – Sub machine guns. Like pistols, these smaller, fully automatic weapons are best used a close distances. Their rate of fire is greater than pistols, but as a result, accuracy is affected.

(Range Attack) Missile – Rocket launchers and bazookas.

(Range Attack) Artillery – Mortars.

Running – Every character can run, but this skill allows players to run that much faster. This skill offsets some of the negative effects of carrying stuff, but is best used when trying to escape from attackers / police or covering distances without a vehicle.

Swimming – The speed at which a player can move through water.

Tailing – The ability to follow a player, regardless of where they go. Depending on the level of the player's tailing skill, a variety of visual indicators (arrows, outlining glows) will, for a certain period of time, aid a player in following one selected target. Certain instances will break the tailing (such as a person target gets into a car), requiring the player to pick a new target (in this case, the car their original target got into).

Throw – The ability to toss an item. Will dictate how far a player can throw a given object.

Skill Improvements

Improving a skill is accomplished, basically, by successfully using that skill. However, improves aren't handed out every time a player successfully uses the skill, rather skill improves are awarded at the end of every day cycle (in game time – approx. every three hours real time). There are three steps to possibly gaining an improve on a skill:

1) Successfully use the skill at least once in one, full day in game time (midnight to midnight). Certain skill successes, and even some sub-skill tasks, are calculated differently, so for this example success is generalized. The success is noted in a player's character and carried until midnight. Subsequent successes in that skill aren't noted, but successes in other skills are. Once a skill has been marked as having been used successfully, subsequent successes won't affect a player's chances of improving (which is by design, as we'd rather players actually play the game rather than sitting around doing idiot tasks, attempting to run their skills up).

2) At midnight, a character's lists of successes are looked at. For each skill that has a success noted, a stats roll is made on the player's Intelligence attribute. If the stats roll is made, then it's on to step 3. If the roll isn't successful, then the next skill with a success is checked. This intelligence roll is made so that there is a balance between brains and brawn in the game. People who design strong characters, with obvious advantages in certain physical areas (running, jumping, damage caused in melee combat, etc.), will improve skills slowly. Conversely, really smart characters will learn faster (as the higher their intelligence stat is, the easier it is to roll under that number), but at the expense of not being physically proficient.

3) In order to gain a one point improve, an inverse skill check is made. This means that unlike a normal skill check, in which a percentile roll is attempted for under the skill value, the percentile roll must roll over the skill value. The idea behind this is that the closer you get to a skill value of 100, the tougher it is to improve, which is just as it is in real life. The basics of any subject can be learnt a lot faster than the mastery of the subject.

If the check is successful, the play gets one skill point added to that skill and the next skill is checked.

HUD

The in-game user interface for *GTA:O* has to cover a few things. The screen has to indicate the level of immediate police pursuit. This is not the same as Recognition. Pursuit means how heavily you're being chased at the moment. It's possible to elude pursuers, but still have a high level of Recognition, which in turn may spark more pursuit should a police officer spot the player.

The HUD should also have some indication of what a player has targeted. Part of this indication will come from a pop up window of possible, optional actions a player can carry out against a target, but it will also be displayed as part of the basic HUD.

The HUD should outline the physical status of the player. This includes three things; over all Health (how close a player is to death), Damage (where a player has been injured and how

badly), and Armor (certain body parts can be armored, deflecting or minimizing damage to the body underneath).

The HUD needs to indicate what items / weapons players have mapped to which hand. As well, some indication of how much ammunition that weapon has in it before it needs reloading is necessary (clicking on the rounds number will give the player the option to reload).

Finally, the HUD should have the chat window. While some of the interaction between players in the game can be handled using sound, it's not a fair assumption that everyone will be able to use this feature, so at the simplest level communication is handled through a chat window.

There are two other user screens that the player will need access to; the inventory screen, which will allow players to shuffle items and wearables, and the attributes screen, which details the players attributes and skills. Neither of these screens are of high enough priority to somehow represent them at the highest level of the user interface, and can be accessed using buttons (not indicated in the mock-up example below).

There will be certain interface screens that will be situational based, such as interacting with the faction mission boards, buying from vendors, etc.

Fig. 2.3 – Example HUD
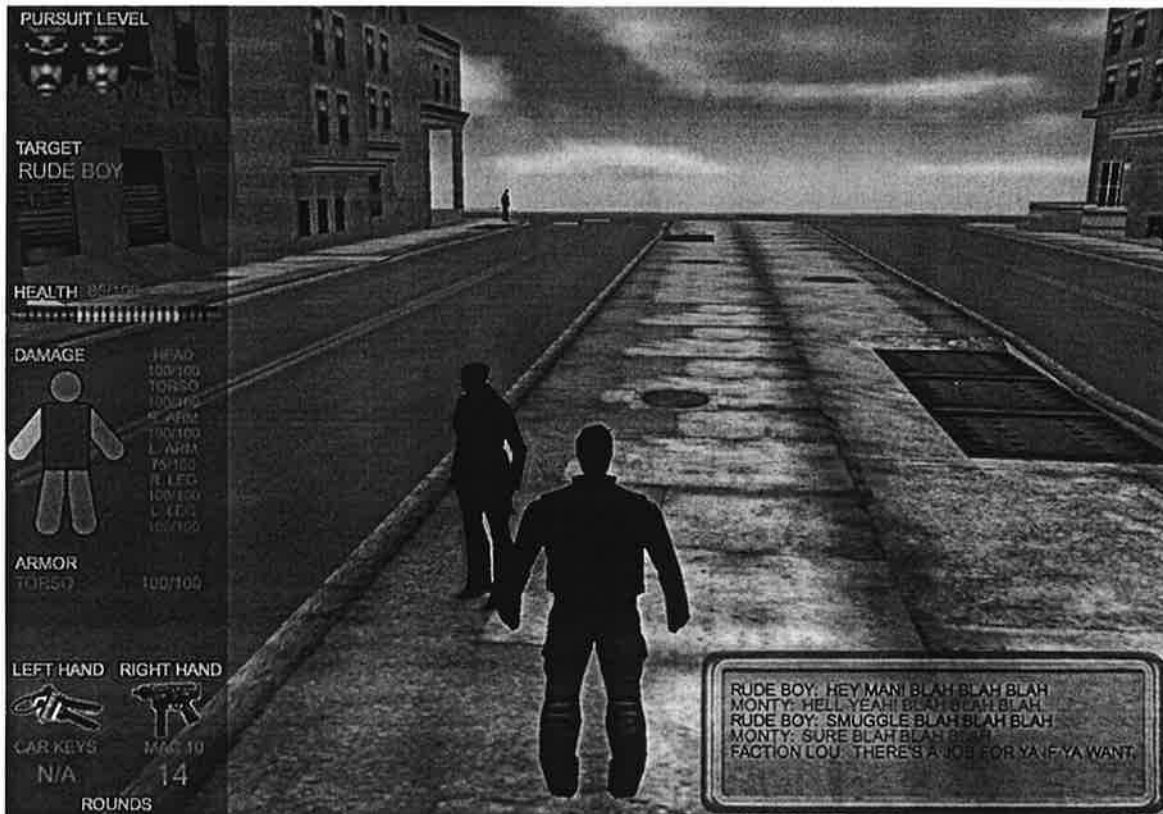
3. Factions and Reputation

Reputation is the core of the game. Each character a player creates is aligned with a certain **Faction**. These factions are mostly criminal in nature (such as The **Yakuza**, The **Mafia**, Motorcycle gangs, etc.), but players can also choose to play as a cop working for the **Police**.

Once a character is created and their alignment chosen, that character will be working for that particular Faction. When a player takes on a mission, success will give them greater reputation with that Faction and failure will take away reputation. As players progress through the game and increase their reputation, their access to new missions, information, items, equipment, etc. will also increase. Reputation however is a trade off. The more reputation you gain within your faction, the more benefits you get. When you complete a mission for your faction, it is at the expense of another faction, and so your reputation decreases with them, in the eyes of their faction AI you become more of a target.

Fig. 3.1 – Typical Mob Male and Female Characters

The Mob – Little needs to be said about La Cosa Nostra. These infamous crime families have become larger than life in the media, dark members of American folklore. And in the background, the mob continues to operate as it always has – everywhere and in everything.

They are established, connected and have the largest territory at the beginning of the game. Their strongest advantage is that they take care of their own, but the downside of their powerful organization is that it is very hard to rise up the ranks.

Territory: Downtown/Warehouses/Docks
Specialties:
Fencing
Protection Rackets
Counterfeiting
Gambling
Advantages:
Reduced Jail times for members
Large influence with corrupt cops
Large Territory
Well-defended territory

Disadvantages:
Hated by all other gangs
Very Slow rising through ranks
Skill Bonuses:
Fencing+15
Intimidation +15
Counterfeiting +10
Gambling +15
Italian +100

Fig. 3.2 – Typical Yakuza Male and Female Characters

The Yakuza – Born in the wake of World War Two and strengthened by Japan's prosperity through the end of the 20th Century, the Yakuza now participates in the Japanese economy at all levels. As such, it is difficult to distinguish the Yakuza from legitimate business. In fact, many of the Yakuza's holdings are for all intents and purposes, legitimate. When threatened, the Yakuza will send out their most ruthless businessmen, lawyers, and "associates".

The Yakuza is high crime with style. Tailored suits and 9mm pistols down to the samurai blades and throwing stars. The Yakuza rule the world of corporate crime, political assassination and large scale robbery. These are the secret bankers of the underworld and while the other criminal factions may hate or fear them, they all try and stay on the good side of the Yakuza.

Territory: Downtown Business District
Specialties:
High End Assassination
Bank Robbery
Money Laundering
Corporate Espionage
Designer Drugs
Advantages:
Favored by other Factions
Reduced Jail times for non-violent crimes
Access to High Technology items

Disadvantages:
Small Territory
Slow Rising through Ranks
High rep penalties for being captured by Cops
Skill Bonuses:
Legal +10
Electronics +10
Hacking +10
Martial Arts +15
Long Blade +10
Japanese +100

Fig. 3.3 – Typical Dogheart Massive Male and Female Characters

The Dogheart Massive – The youngest of the factions, The Massive originated in the Caribbean before expanding into North America and Europe. They make up for their lack of connections with sheer ferocity. The Dogheart Massive has deep connections with the international drug trade and makes much of its money from international smuggling both of contrabands and illegal immigrants. They are in a vicious war with the Mob over control of the docks and see The OMGs as a threat to their reputation as the most violent gang.

Territory: The Docks
Specialties:
Violence
Smuggling
Drug Trafficking
People Smuggling
Kidnapping
Advantages:
Better Access to Weapons
Rapid Reputation changes
Best-defended territory

Disadvantages:
Longest Jail Times
At War with The OMGs
Low access to High Crime
High Cop recognition factor
Skill Bonuses:
Concealment +15
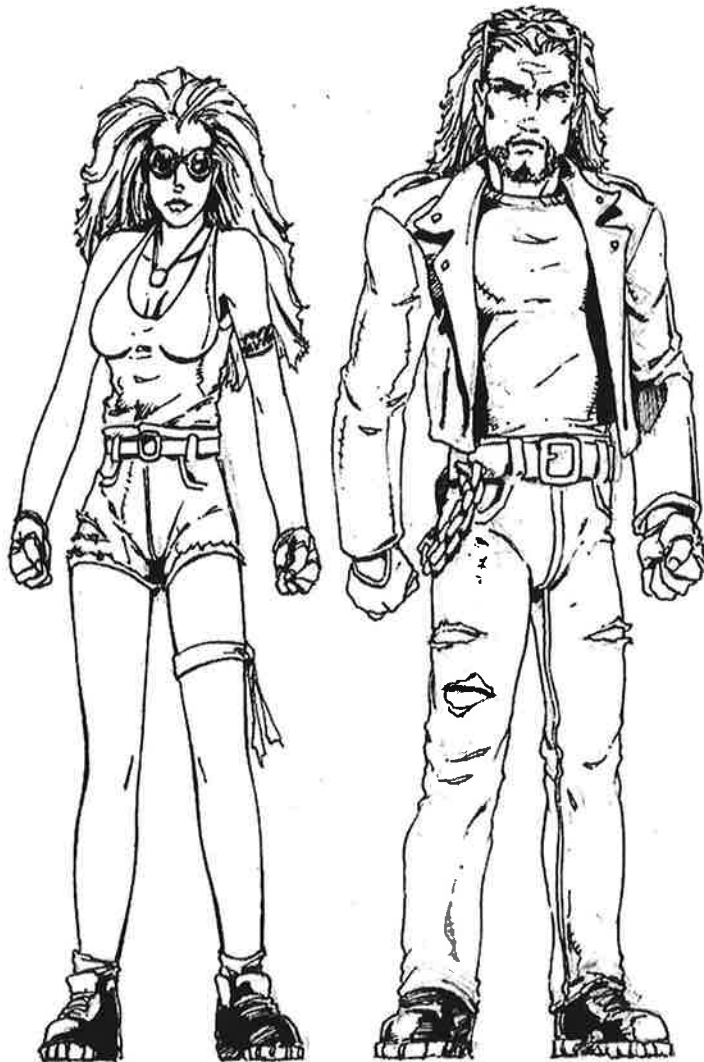Short Blade +15
Long Blade +10
Intimidation +15
French +100

Fig. 3.4 – Typical OMG Male and Female Characters

The OMGs – Overtly an international motorcycle club, The OMGs have chapters in every major city in North America, Europe, Australia / New Zealand, parts of South America, and even South Africa. These chapters are heavily involved in most every illegal activity there is. Their Harley and denim style leads one to suspect a lack of savvy, but The OMGs are quite capable and incredibly tough, squaring off against anybody who gets in their way.

The OMG are the least organized of all the criminal factions but use their dispersed structure to their advantage. The OMGs are the kings of national smuggling and petty crime. Biker gangs carry out quick, brutal strikes to gain territory or money and then quickly disappear into dozens of holes, like safe houses. The OMG despise the Mob who they see as blocking their path upwards in the criminal hierarchy.

Territory: A suburban block
Specialties:
Smuggling
Car theft
Chop Shops
Arson
Street Drugs
Thievery
Advantages:
Safe Houses scattered throughout city

Disadvantages:
Very Small Territory
High cop recognition factor
At war with Dogheart Massive
Skill Bonuses:
Brawling +15
Driving Class M +15
Demolition +5
Fencing +5
Concealment +10
Mechanical +10
Hotwire +10

Fig. 3.5 – Typical Cop Male and Female Characters

Law Enforcement – You can't have bad without good. In a city filled with warring criminal organizations there's always work for law enforcement.

Territory: City block on the edge of Downtown with HQ and motor pool
Specialties: N/A
Advantages:
Citywide support from other cops
Easy access to ammunition
Easy access to marked and unmarked police cars
Slow, but steady rep increases (decent bonus for success, mild for failure)
Disadvantages:
Bad reputation with all other factions
Extreme rep decrease for involvement in criminal acts (injury to civilians, etc.)

Skill Bonuses:
Tailing +15
Interrogation +10
City Sense +25
Legal +20
Driving Class A +10
Pistol +15

Faction Territory

Within the World, each Faction controls a certain amount of territory. There is a minimum size to each territory, a handful of city blocks that constitute a Faction's core neighborhood, and that territory can never be taken away. However, Factions can add to that core controlled territory through the completion of missions in uncontrolled territory or territory controlled by other Factions that is adjacent to their reputation territory. You can take control of the next block over, but you can't take control of a block on the other side of town. When a piece of territory is claimed, it is dictated by the success of the Faction. If The Mob players are doing very well and The Yakuza aren't, by the end of the week, their respective territories will reflect this success.

This flux in territory serves as an impetus to players to see their chosen Faction succeed. It's a matter of bragging rights. No one wants to be the little guy and everybody wants to take down the big guy.

Faction Headquarters

Each Faction within the game has a "headquarters" somewhere within their Reputation Territory, somewhere in the game World. These headquarters reflect the faction they represent.

The Mafia headquarters is based in a restaurant. All throughout the restaurant are empty tables that players can meet at and at the back is a big booth where the Mob don or one of his capos sits, waiting to hand out missions.

The Dogheart Massive HQ is in a back room behind a loading dock at the shipping yards. The Dogheart Massive leader or a lieutenant sits at the back of the loading dock warehouse to hand out missions. Throughout the warehouse are scattered card tables and boxes that players can meet around.

The Yakuza are based in an office tower downtown. The Yakuza executive heads can be found at a desk on the top floor, waiting to hand out missions. To the sides are closed office meeting rooms for players to plan in.

The OMGs hang out at a bar on the outskirts of town. Similar to the Mob restaurant, the place is filled with booths and desks players can meet at. The OMG leader hangs out in a corner area, where he has a couch.

The police have a precinct. Think *NYPD Blue* and it's all pretty self-explanatory.

The headquarters, besides being a natural meeting place and save/spawn point, is also where a player must go to find out about and accept large missions. Hard scripted missions, for example, will never be available through phones or pagers (like randomly generated missions). Instead, a player has to go in person to their headquarters and accept the job from their Faction's AI NPCs.

Entrance to the headquarters is reputation based. The Doors will not open to anybody except players with positive reputation with that faction. If a player fails too often or acts in a manner that lowers their reputation with their Faction, once they reach zero or negative reputation, the doors will no longer open, they will no longer be able to call their faction for missions, and pagers will no longer relay reputation missions to them (missions taken through

personal initiative, like stealing a car and taking it to a shipping dock or chop shop controlled by their faction, will still be available to players, giving the player the opportunity to gain positive reputation again). For more on negative reputation, see Changing Factions below.

Meeting Rooms

Within each HQ are places for players to meet. These can be booth tables at a restaurant, bar tables at a biker bar, card tables at the back or a warehouse, or meeting rooms in a corporate office or Police precinct. Players who have accepted a mission from the faction boss, but think they might want accomplices to pull the job off, can sit down at one of these tables. When they sit down, the player will be prompted for some details, like how many people they are looking for, what skills they should have, what other players might expect to be paid for the job, etc.

The player who set up the meeting room then waits for players to join him. The player who set up the meeting room can turn interested players away if they want (say, for example, if the player is waiting on buddies and isn't interested in the help of just anybody who wanders by.

Once players join the room, everybody at the table is linked in a private version of the chat window. Players can still see the world around them, players who might approach the table, troublemakers who may walk through the door, etc. Besides chatting with one another, the player who opened the room will be able to show the other players any details they received from the faction boss when they took the job (such as a target's picture or a map) and in a crude way use the mouse to write on the image (like a sports broadcaster using a light pen to draw on a paused football game).

Fig. 3.5 – Dogheart Massive Warehouse HQ

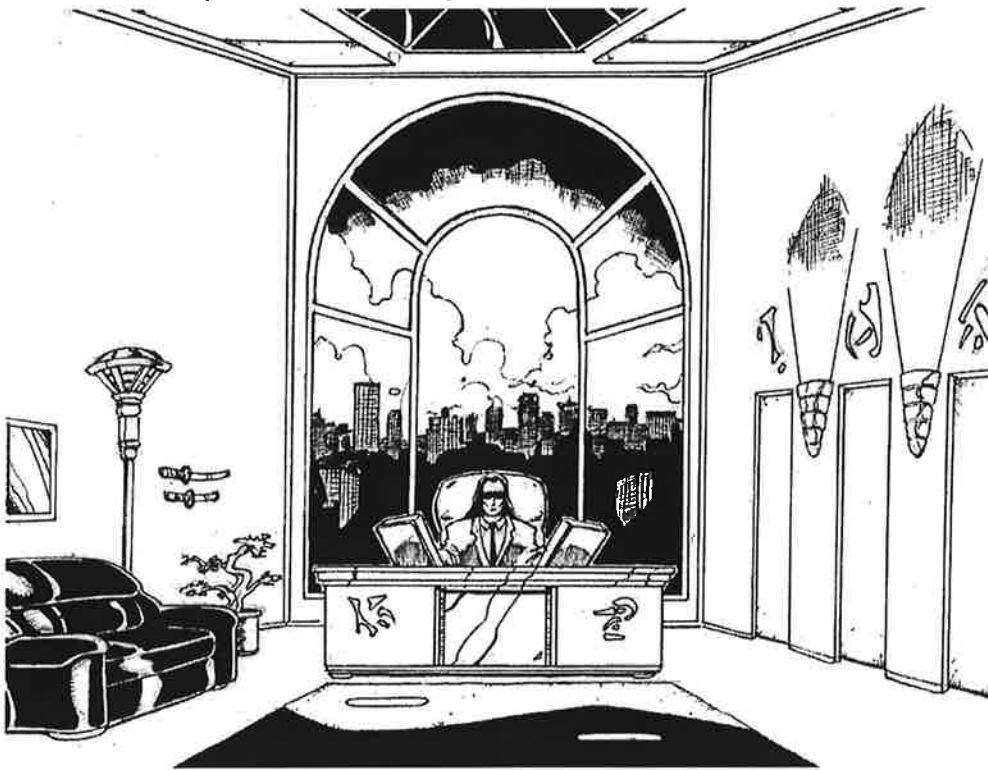*Fig. 3.6 – Yakuza Corporate HQ and City Police HQ*

Fig. 3.8 – Biker Bar HQ
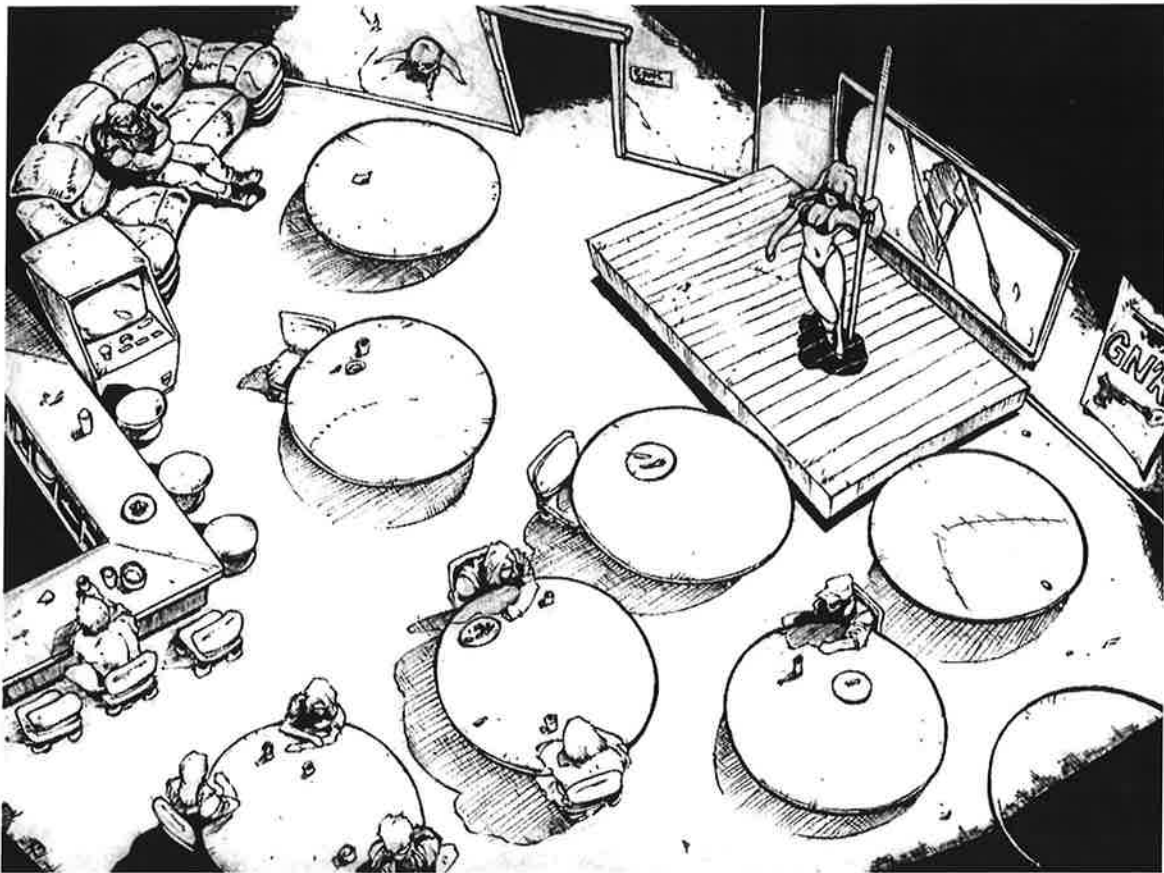
Changing Factions

When a player has near-zero reputation with their chosen Faction, they can attempt to regain their positive reputation standing. However, they also have the option of changing sides and throwing in with another faction. This option is only available if the player's reputation is near zero with another faction. For example a player might gain faction reputation at the expense of another faction, thus lowering that player's reputation with that faction. If circumstances then ruin that player's reputation with their own faction to the point that they are at near-zero rep and cut off from obtaining missions from their faction, before they can change sides, they would have to undertake Personal Initiative missions in order to repair their reputation with another faction.

Informal Reputation

Everything above is controlled by the game world AI, but there will be (as there always is) a second level to a player's reputation. Besides the in-game reputation, which dictates a player's level of prestige within their faction and all the perks that comes with that, there is an informal reputation, one that has no impact on a player's interaction with the world, but impacts their interaction with the other players.

Snitch Boards

When a player rips off another player, the slighted player can go to the snitch boards and briefly outline what this player did to piss them off. Conversely, a player can also outline their approval of the other player, if they've had good dealings with one another. Other players can then check out another player's informal reputation before contacting them to do any work for them. This can be applied to anything, either when looking for a player with a skill you don't have or for people to go on jobs with you. Regardless of a player's in-game rep, they may also have a good or bad rep with other players in the game that should be considered.

4. Character Interaction

Honor Among Thieves

There is a benefit to operating in a world where players can have an impact on one another — the possibility of retribution. Previous RPGs have used an escrow system to trade items (both parties put their items into the trade screen and only when both sides are satisfied are the items released. If one or both parties backs out, the items revert to who they started with), but have stumbled when it comes to allowing players to use their skills in the service of others. For example, one player may give another player the expensive materials required to fashion an item using some sort of skill, but if that player then decides to run off with the materials or keep the resulting item for themselves, the first player is out of luck. Since the world doesn't allow players to fight (to prevent player killing), the first player has no way to get their investment back.

GTA:O does allow player killing (instead of putting other checks and balances in place to limit a players lust for mayhem), and so players must strike their own balance. If a player wishes to have an item appraised, but doesn't have that skill themselves, they must find someone who does have that skill and give them the item. If this other player is a stranger (and thus probably willing to do the appraising for a fee), then the transaction works like this: If the appraising character attempts to run off with the item, the first player has the option of taking the item back using force. If they can't, they can bring friends who can. And failing that, they can nurse a grudge and run them down later. The same goes for the appraising character if they aren't paid.

Besides an honor based system (which won't always work) a player has the option of posting their comments to the publicly accessible Snitch Boards.

Contextual Right-Click Menu

Rather than using a massive HUD menu system, GTA:O will instead have players interact with object, NPCs, and other players using a context sensitive right-click menu. Players use the mouse to left click on a target (which can be anything they can in some way interact with). This will select the target. By clicking the right mouse button, a list of things they can possibly do to this target will pop up. One such option would be "talk" which will activate another, similar system, that allows players to use canned audio to "talk" to other PCs and NPCs (see Communication).

The system is context sensitive in that it will only list the things you can do to the target. If a player selects a gun on the ground, the menu won't list "talk", but it will list "pick up". Select a car and the menu will display "get in", but no "pick up", and so on.

Fig. 4.1 – Example Right Click Menu Mechanism

Movement

Movement in the game will be fairly free roaming. At a basic level, players will be able to walk, run, jump, climb, swim, and drive. With the exception of walking, all of these actions can be improved as a skill. For example, player characters can run, jump, and drive around the world as soon as they start playing the game. Players can get in a car and drive off in it, they can run from pursuers, and they can jump up onto benches, car hoods, etc. However, as the game progresses a player may wish to have better control of a car so they can use it as a getaway vehicle, they may want to be able to lose any chasing police faster, and they may want to make jumps (say, from rooftop to rooftop) that they're base skill won't allow. If that's the case, players can take on these actions as proper Skills, which will improve as they use them.

Pursuit

If an NPC performs a successful recognition test against a player character, it is flagged to pursue or capture a Player and it will immediately attempt to do so. A Cop NPC will first shout for the PC to stop, referring to him or her by name, and then begin pursuit if the PC does not hold their position. If the player runs and pursuit begins, the Cop NPC will broadcast its current position, the name of its target, and what the target is wearing. This will have the effect of tripling the pursued PC's RF for the duration of the chase and also allow Player Cops to home in on the criminal PC and join the chase.

In order to escape pursuit a player must first try and break the Line Of Sight between themselves and their pursuers. This can be achieved by something as simple as ducking around a corner ahead of the pack or as ornate as trying to hop into the back of a truck and crouching in a box. Once the LOS is broken the system consults the PC's evasion skill and compares it to the perception abilities of the pursuing NPC. If the evasions check is successful, the NPCs lose their target lock and must reacquire the target through another recognition test of the target.

In other words, if a player can get around a corner first, he has a chance to break the pursuit. But if the pursuer is only a few steps behind, and the player is in full view, it is very likely the pursuer will reacquire the target and the pursuit will continue.

Enemy Faction Soldiers will function much the same way in pursuit except for the fact they will shoot first and often, and will not leave their Faction Territory, or broadcast APB's to their faction. Only other Soldiers in LOS of the pursuit will join it.

Hiding

Hiding will affect the way a player registers on an NPC's line of sight scan. If a player has activated their hiding skill then any NPC LOS that passes over them will determine how much of the character is actually visible and compare that to the PC's hide skill. If the hide test is successful then the player is effectively invisible until the next test occurs. Characters with a high skill will therefore be able to make do with less cover than characters with a lower skill.

A successful Hide will completely break a pursuit or allow a player to be ignored by AI routines like escorting civilians out of a room at closing time. Against other player characters this will effectively make the player invisible but the skill will never get quite high enough to let a player stand in the middle of a room and disappear.

Most Wanted List and Rap Sheets

Leaving players to find out just how much of a target they are the hard way (i.e. getting captured or killed) is not very pleasant for the player. As such, two systems are in place, detailing a player's exploits and how "hot" they are. The first is the Most Wanted List. This list will outline players who are being sought after for recent crimes and approximately rank just how badly they are being sought. If 100 players are being sought for 100 crimes, 10 of them will rank at the top, creating a sort of top ten most wanted, though all players are listed.

The list will be generated off of the Mission AI's list of active crimes. The list can be consulted by players to find out if they're wanted and by clicking on a listing, find out more details about the crime, when it was thought to take place, and other possible info, such as if certain factions are also looking for the player. Cop players can also consult the list. Cop player missions will be drawn from this list.

The Rap Sheet is essentially bragging rights, listing all crimes a criminal has been arrested for and all crimes they committed, but were never arrested for. Crimes will have a statute of limitations (see Offenses and Their Aspects). Once they expire, a player has "gotten away with it". Otherwise Cop players could just randomly arrest criminal players and be almost assured they're nabbing someone with an outstanding "warrant". Listed offenses can be looked at in greater detail, outlining things similar to the Most Wanted list, like where the crime took place, what type of crime, accomplices. These not only record the details for posterity, but allow Cop Players a resource to look for leads. If they're looking for a particular criminal player, and they notice that they often work in a certain area or with a certain cohort, then the Cop Player can use this to narrow their search.

Cop players will have a similar sheet, outlining their successes and failures as well. This list won't be available, or at least readily available to criminal players.

Combat

Combat will be based on a system where the player places the on-screen mouse point over a desired target and left clicks to attack with whatever weapon they currently have "loaded" in either hand. Once a target is selected and the player hits the fire button a calculation is made based on the skill of the firing player, the dodging ability of the target, range, type of weapon, relative movement, and hit location being aimed for. If the weapon hits the target then damage is calculated and applied to the indicated body area. Misses may impact nearby objects and the results of this will be calculated as well.

For physical combat the resolution will be much the same except the system will consult hand-to-hand combat skills and call up swing/block animations.

Hit Probability

Hit probability is expressed as a percentage which must be checked against in order to hit the target the player is aiming at. This percentage is derived from the firing players ranged combat skill, skill level in the weapon type he is firing and the range modifier for the weapon. If the target can see the firing player it is assumed the target is trying to dodge and so the targets dodge skill is subtracted from the hit probability. Finally if the player is trying to hit any body part other than the torso, the appropriate negative modifier will be applied. If the player does not choose a body part then it is determined randomly or a torso shot default can be set.

Hit Location

Human figures, both Players and NPCs, will have 6 targetable areas: head, torso, R/L arms and R/L legs. The Torso will be the easiest to hit and will be the default target area. When a player initially places the mouse pointer over a target while armed, the entire figure will be outlined. If the player fires then it will be calculated as a torso shot. If the player does not fire after a half second the highlighted outline on the target will contract to the specific body part and that will be the attempted target if the shot is taken.

Players will have the option to set up their shot and try and shoot at a particular area, or they can fire a quick shot, that randomly hits (or more likely misses) one of the body locations. A shot taken like this will have modifiers that make it harder to hit than if the player had taken the time to pick their target location.

Hit Points and Distribution

A character's hit point value is calculated by adding their Strength and Agility stats and dividing the result by 2:

$$Str. + Agi. / 2 = HP$$

This value is distributed, proportionally, to different parts of the body – Head, Right and Left arms, Right and Left legs, and Torso. The ratio works like this (using an average character with a HP value of 10):

Fig. 4.2a / 4.2b – HP Locations on Body & To-Hit Modifiers
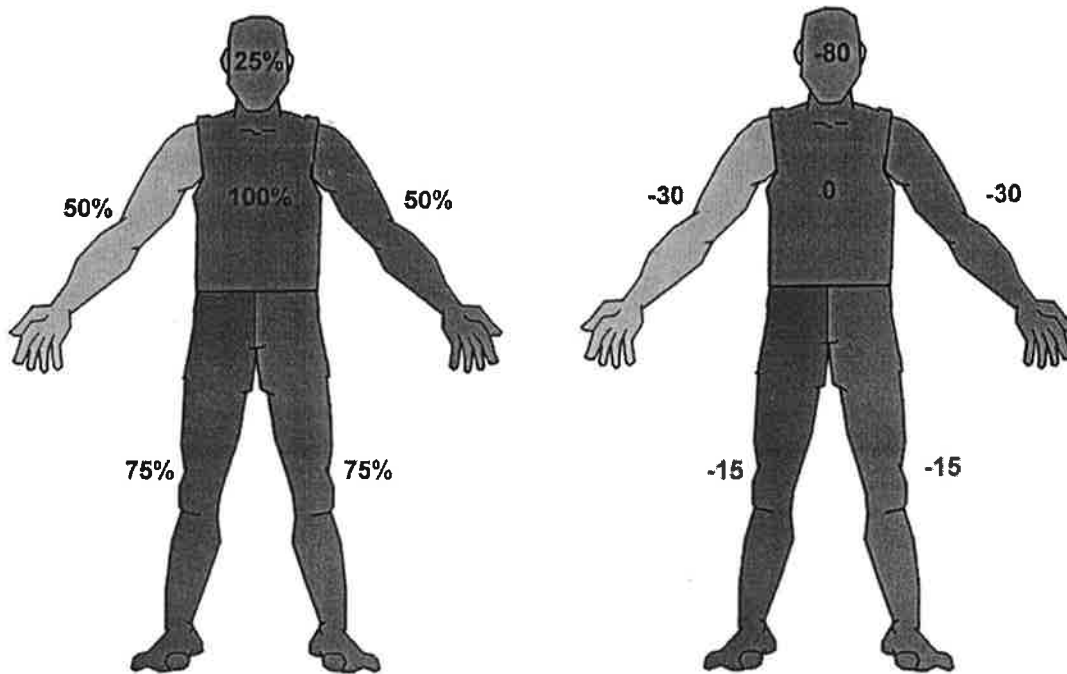
The 10 points of the torso represent the core of a player's health. If more than 10 points damage are inflicted to the torso, the player collapses and dies. The extremities are less critical to survival, so complete damage to them results not in death, but in the failure of that limb. A totally damaged leg results in a limp, both legs damaged results in the player having to crawl, arms can't draw weapons, etc.

The head is different in the other limbs in that it is harder to hit than they are, even harder to hit than the torso, but it's HPs are very low. A successful shot to the head effectively incapacitates the player, but does not kill them until the remaining HPs of the torso are taken away (either through further attack damage or bleeding damage). This should strike a balance between the annoying one-shot-one-kill head shot FPS player's are familiar with and the several-hits-to-the-head-but-still-fighting model seen in fantasy games. A headshot is difficult, but if successful will drop the target. However, there is a chance the target, if not further attacked, may be attended to and survive.

If the damage inflicted to a limb exceeds the HPs there, the remaining damage counts towards the torso. The idea is that a player can die if they are shot enough, but quick death is tougher, as it requires the attacker to hit the torso directly. More likely than not, unless the attacker's weapons skill is quite high, the roll will result in a hit to an area adjacent to the area they were targeting or a miss altogether. It is possible to receive damage greater, when totaled, than the torso's core HPs, but this is consistent with real-life. A person can get shot in every limb and still live.

It is possible to sustain some damage, the battle ends, and the player then slowly loses HPs from their injuries until they are treated.

Weapons Damage System

Damage is resolved taking into account 3 attributes. The Penetration of a weapon, the amount of damage it does and the Armor value of the target.

Penetration

This is how powerfully a weapon penetrates armor and is applied Vs the armor value of the target. A club and a Knife may do the same amount of damage but the penetration of the club is very low compared to that of a knife's ability to slice through clothing and light armor, like leather.

Armor

This is a value based on either a targets skin or the armor it is wearing and in simple terms, is an indicator of how tough the outer layer of a unit is. Human skin has an armor value of 0, an inch thick sheet of steel would have an armor value of 20.

Damage

This is the maximum damage potential of a weapon. The resolution of the penetration Vs armor calculation will decide what percentage of this maximum damage gets through.

These 3 attributes will be used to all combat in *GTA:O* and while the actual mechanics will be irrelevant to the casual player it will create a consistent damage model that will create a sense of reality players can count on and devise strategies for. This system will allow a grenade explosion (high damage/low penetration) to be modeled just as easily as an armor-piercing shell. (Very high penetration/high damage) Melee weapons such as knives and clubs can be rated using the exact same system.

Other Weapon Attributes

Weapons will also be rated for weight, attack speed and clip size.

Weight – Self-explanatory but in terms of game effect each character will be able to carry its STRENGTH value in pounds. If a character is carrying more than its strength then it will be encumbered and suffer a movement penalty.

Attack Speed – This is how long it takes a weapon to execute a single attack and is rated in seconds. A machine gun may attack every 0.2 seconds while a baseball bat may have an attack speed of 3 or 4 seconds. While initial ballpark values for this stat will be given by design, it is acknowledged that the final values will be heavily dependant on animation times.

Clip Size – This last stat only applies to weapons with ammo or charges like tasers. Clip size denotes how many times a figure can attack with the weapon until it is empty and must be reloaded. Each type of weapon will have a unique reload animation that will take a set length of time so that realistic expectations will apply. For example, revolver take longer to reload than an automatic.

Combat Damage Resolution

1) If armor is greater than or equal to penetration: subtract penetration from armor to get the amount of penetration blocked.

2) Subtract the blocked value from the penetration to get the penetration in dispute or, if armor is less than penetration: divide penetration minus armor by armor to get the ratio of penetration guaranteed.

3) Multiply the ratio by the penetration to get the amount of penetration inflicted so far.

4) Subtract the guaranteed value from the penetration to get the penetration in dispute.

5) For each penetration point in dispute, there is a 50% chance of it being applied

6) Divide the damage by the penetration to find the per-penetration point damage.

7) Multiply the total applied penetration points by the per-penetration point damage to get the total damage.

Examples:

Armour = 15, Penetration = 10, Damage = 20
Armour is greater than penetration, so;
penetration blocked = 15 - 10 = 5
penetration in dispute = 10 - 5 = 5
for each of the 5 points, there's a 50% chance of it being applied - assume 3 points are
per-penetration point damage = 20 / 10 = 2
total damage = 3 * 2 = 6

Armour = 10, Penetration = 15, Damage = 5
Armour is less than penetration, so
ration of penetration guaranteed = (15 - 10) / 10 = 5 / 10 = .5
penetration guaranteed = 0.5 * 15 = 7 (rounded down)
penetration in dispute = 15 - 7 = 8
for each of the 8 points, there's a 50% chance of it being applied - assume 5 points are
total penetration points = 5 + 7 = 12
per-penetration point damage = 5 / 15 = 0.33
total damage = 12 * 0.33 = 4

Falling Damage System

If a player happens to fall, either from stepping off of a high place or failing a climb roll (say, when scaling a wall), then there is the possibility of damage.

Personal Inventory

Inventory in *GTA:O* is clothing based. That is to say, that if you're naked, you don't have any place to put equipment except in your hands. Wearing clothes, putting on backpacks, and carrying briefcases, etc. will provide you with more spaces. This *GTA:O* world will be a lot like the real world. You can't carry everything around with you – you'll have to leave stuff at home and carry only what you need for the job. Home in this case is your apartment, or "bank". If you need, or think you need, more stuff for a job than you can physically carry, you can put stuff in a car. However, this has its risks, as someone may steal that car.

Some items, like weapons, cause troubles when carried. NPCs and cops tend to react badly to them, so carrying a weapon in hand, while the most accessible, can be more trouble than it's worth some times. Putting a gun in a backpack is the exact opposite – the weapon is totally out of sight, but it takes time to retrieve.

Players can designate what they want in a given hand, but certain items (mostly weapons), won't actually be in the hand until the player attempts to use them (by clicking their attack button), or specifically drawing the weapon. Depending on where the item is when they attempt to use it, there will be a delay according to where the item is (in the hand, in a pocket, tucked in a waistband, placed in a backpack, etc.)

Clothing will have different access times (the times are fairly short, to the point of being unnoticeable, except when a player is trying to quick draw a weapon) as well as different encumbrance ratings that will affect a player's speed. There will be limits to the amount and types of clothes a player can wear as well, so it will never be possible for a player to wear 200 pounds of sport jackets, thus giving them dozens of pockets, but making it impossible for them to move in.

Fig. 4.3 – Body Inventory Points
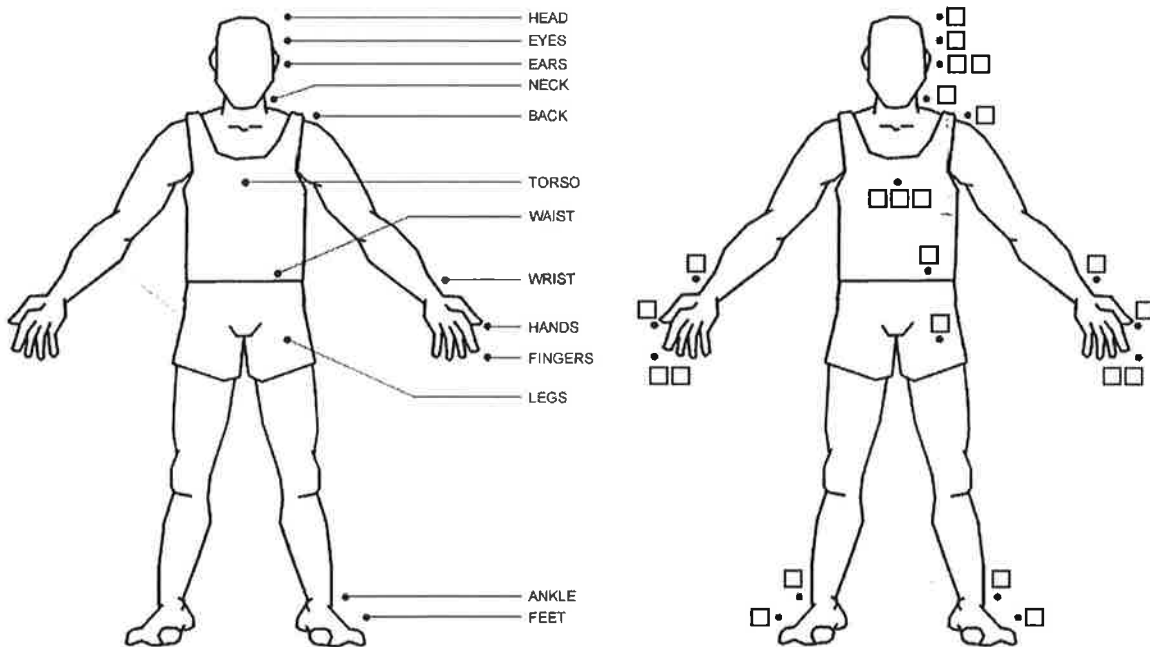
The figure above outlines the base clothing slots on a person. Clothing and wearable items can compound these basic slots. By putting on a belt, a player will have four slots on which to tuck items or even more slots by putting holsters in utility packs. Different jackets will have different numbers of pockets, as will pants. A backpack will provide a lot more inventory slots.

There are some rules for wearable items - Packs cannot be placed in other, similarly sized packs. A backpack can't be stored in another backpack. A hip pack cannot be stored in another hip pack. A holster cannot be stored in a hip pack. However, hip packs and holsters can be stored in a backpack. Access time to items, like weapons, will be affected accordingly, if a player links their attack to a weapon, in a holster, in a backpack, on their back.

The only areas that have no items that will compound their inventory slots are the feet, the hands, the fingers, the neck, the ears, the eyes, and the head. All other areas can wear items that perserve or compound the player's inventory slots.

Public Inventory

It will be possible to put items in places other than on a PC's person (such as in the trunk of a car). These places will be accessible, to varying degrees, by everyone (whereas people can't place items in your PC's pocket for example). The accessibility varies because some places, like a car trunk, are locked. In theory, anybody can get into them and place items there, but the trunk has to be opened first. Other places, like a cabinet, behind the bar, at a club, isn't locked.

In any case, anything put into these places can be picked up by anybody else. The exception would be anything concealed in this area. If a player successfully conceals an item in an area, then the item will not show up in the inventory slots when other players look there (the item will however appear to the player who hid the item). Essentially, if a desk drawer has 10 slots and they hide a key, then one of those slots is essentially filled, but not visibly so to other players. Other players can use their own conceal skill to see if there are any concealed items there. They can also, theoretically, place 10 items in the place themselves, in which case they'll know the 10th slot holds a concealed item because they can't place anything there. The idea is to put enough item slots in any given place that it is a hassle to spoof the system. It's not to say it can't be done, but it's time consuming and even if they do discover there's a concealed item, it does them no good if they can't successfully use their own conceal skill to find said item.

The reality that if items are worth enough to hide, then players will lock them away in places other players can't search. If they do have to hand off an item, but not personally, then it's unlikely they'll leave the item unattended anyhow. In effect, looking for hidden items will be boring an unprofitable to people randomly looking for loot, as most places will be empty or will hold something, but is being watched and will get them beat up. Concealing things publicly will be a last resort, not a commonplace.

Item Exchange

In *GTA:O* when a PC wants to give an item to another PC or NPC they will right click on the target figure and select "exchange" form the list. This action will open up their inventory screen and open up an exchange window slot. For a trade with another PC, two trade windows will appear, one for each player so that the players can see the items and money they are exchanging. Both players must accept the trade in order for it to pass through. This is the traditional form of massive multiplayer on-line game trading and there is little reason to re-

inventing the wheel on this one. Items are moved from the inventory to the trade window using a click and drag system.

Drowning

Swimming is not an automatic skill in the game. When a player falls into water over their heads, they have a limited, low-level swimming ability, but it is slow and energy sapping. Just as in real life, people who don't know how to swim can splash and dog paddle themselves out of a kiddie-pool, but when dropped in the ocean, they will exhaust themselves and drown.

Drowning takes place after players exhausts themselves, they sink under the water, and then they run out of air. Both a player's stamina and the amount of air they can hold is calculated using their strength.

Ambulances and Hospitals

Just as for injured NPCs, an ambulance will shortly arrive on the scene (likely with police as well) to attend to the injured. Players who have are still "hot" from crimes they have committed, can be taken to the hospital, but from there they will go to jail. PCs have the option of fleeing a scene (if they can) and seeking medical help outside the city system (i.e. Faction doctors, friends with the medical skill, etc.) or being healed by the city system hospital. If a player thinks they can't make it to help on their own or if they are incapacitated, but not dead (as from a headshot for example), they can decide that living is more important than going to jail.

Players can also go into hospital emergency rooms for help too, but the same rules apply as with the ambulance. If you're wanted, then you will go to jail after receiving medical aid.

For both the ambulance aid and hospital aid there will be a cost. If they player doesn't pay up, they won't have access to the automatic help of the ambulance or emergency room until they do pay up. A player can try and rip off the ambulance, receiving aid and then not paying, but it will likely come back to haunt them later when they need the help again.

Arrest

It's a game about crime and everybody's going to get arrested sooner or later.

• A player will automatically fail any mission they have accepted, if that mission has a time limit that is exceeded while the player is in jail or within a certain period immediately after they're released.
• Player's will get a small reputation bonus (if you haven't been to jail, what kind of criminal are you?) dependant on faction (certain factions might view capture as a dishonor).

Players will be released from jail outside the police precinct. Most items they had on them will be returned to them.

• They will get back 100% of the money they had on them.
• All contraband items will be confiscated (slim jims, weapons, drugs, etc.)
• 100% of all other items will not be returned (gun holsters and body armor will count as items and not clothing in this case).

While players with Police characters can't take on criminal missions, they can undertake certain criminal activities, like stealing a car, shooting someone without cause, etc. If caught, they

will be arrested, reprimanded, take a severe reputation hit, and then returned to duty. Certain reprimands might include "suspension", which is similar to a criminal character being in jail – the character isn't playable for a short period of time.

Court

When a player is arrested, they get their day in court. They appear before a judge and are asked for a plea – guilty or not guilty. If they plead guilty, they go to jail for the average stretch of time (see jail times under Offences and Their Aspects). If they plead not guilty, their legal skill is checked against that of the judge. If they win, the charges are lessened or even dismissed. If they lose, they get a minimum stretch equal to the average jail time for that offence, or even a little higher (which is the risk of trying to defend yourself). There will be a stable of NPC judges who will preside in the courts at any given time. Each judge will have a different stance on certain crimes, which will be represented as the difficulty rating a player will be checking their legal skill against. Just as in real life, there will be certain judges you don't want to have the misfortune of appearing before.

Dying

Everybody dies sometime. In the game, when players die, in any fashion, at any time, a number of things happen.

• A player will automatically fail any mission they have accepted.
• Player's will take a reputation hit (criminals who die while committing a crime are losers).
• A certain amount of skill points will be randomly removed from a player's skill base. Currently that number is 5, but that may change as the skill system is balanced.

Players will restart in their faction headquarters. Not everything they had on them when they died will be returned to them.

• They will only get back 10% of the money they had on them.
• All contraband items will be confiscated (slim jims, weapons, drugs, etc.)
• 50% of all other items will not be returned (gun holsters and body armor will count as items and not clothing in this case).
• Certain damaged clothing items will not be returned.

Criminal players are encouraged to avoid dying and carrying everything they own with them. They are playing within a city. In the event that they need a particular item, they have the opportunity to return to a car or inventory bank to retrieve certain items. There's no reason a player should tote around a rocket launcher unless they need it.

Dying is slightly different for people playing as part of the **Police** Faction. Police officers are facing a four on one situation. They are outnumbered by the criminals they are hunting and as a result their job is more dangerous. Dying, while still being a bad thing, won't have the same pluses and minuses as it does for criminals. In such a dangerous environment, police players should be rewarded for taking risks over being passive or using safe, slow paths to character improvement.

• A player will automatically fail any mission they have accepted.

• Player's will get a reputation increase (police who die in the line of duty are heroes).
• A certain amount of skill points will be randomly removed from a player's skill base. The number of points removed will be less than those of dead criminals, to the extent that the removal of points might not occur every time a police character dies.

Police players will restart in their faction headquarters. Everything they had on them when they died will be returned to them, with the possible exception of certain damaged wearables.

Idling and Emoting

Similar to Auto Drive, an idle character must fit into the world surroundings. That player characters will move differently from NPC characters walking the streets is unavoidable. However, when a player is not moving, they should fit into their surroundings. As such, player characters will share the same idling animations as "Standard" NPC characters (standard meaning an average NPC, as opposed to characters with special animations, such as old shop keepers, solicitous hookers, crazy street preachers, etc.)

When a player stops walking or running, they will begin a random idle animation;

• Looking around.
• Putting their hands in their pockets.
• Shifting their weight from one too to another.
• (more to be added as the animators get involved)

A second, more specific level of animations will also be available to the player and the NPCs. These animations have to be automatically triggered by the player, but will be handled automatically by the game AI for NPC characters. Some are situational (like leaning against a wall, etc.) and won't be available if the situation is not met. Of course, the AI will just move NPC characters into the proper situation to use these animations.

These animations, when triggered by a player serve a number of purposes. The first is similar to the automatic idle animations – it makes a player mix with the crowd better. The second is that it makes a good signal ("when I lean against the wall, you move in for the hit..."). They also work similar to the third level of animations, which can be used for the purpose of roleplaying. Lighting a cigarette instead of answering another player's question or bopping your head when the radio is on conveys a level of roleplaying.

• Leaning against the wall.
• Lighting a cigarette.
• Hiking up their trousers.
• Bopping their heads to a beat.
• Scratching their ear.
• (more to be added as the animators get involved)

The third level of animations, the roleplaying ones, have one purpose only, and that's to act within the world. Some of these animations can be tied to actions and skills. For example, a player uses their intimidation skill against an NPC. Anybody watching will see their face frown. This frown can also be triggered whenever a player wants, like when they're talking to another player, but it's a given that when a player is doing a particular action, a particular animation or expression is in order and will occur automatically so that the player doesn't have to worry about

doing it themselves. Skills that automatically trigger expressions will be outlined in more detail in the Skills section. Facial animation will be discussed elsewhere. Some examples of these specific animations include.

• Frowning.
• Surprise.
• Laughing.
• etc.
• Shaking a fist.
• Pointing.
• Shaking head.
• etc.
• (more to be added as the animators get involved)

Controls

Maneuvering around the game world should be as simple as moving in a first-person shooter game. All movements will be handled using the keyboard for motion and mouse for looking / targeting. Keyboard keys will be configurable, not only for movement controls, but for certain action hotkeys and HUD interface menus.

The mouse pointer will move freely around the screen, allowing the player to click on objects and characters in the game world or parts of their HUD. By clicking and holding the right mouse button and moving the mouse around, the character will look around. Up on the mouse will look down at the ground, down will look up to the rooftops, left will swing the camera to look right visa versa for moving the mouse right. The characters orientation will always be with their back to the camera, meaning that steering the character around can be accomplished using the camera controls. There will be a quick key to snap the camera back to its default position.

Everything in the world that a player can interact with will be apparent through a hot spot system, meaning that when the mouse moves over an object or part of an object that a player can manipulate, it will become highlighted. By clicking on a hotspot point, that point will become selected and the highlight will flash. As well, a menu of action options will appear in the player's HUD. From this menu, players can click on what they'd like to do with the target (attack, smash, lift, etc.) Again, some of these actions can be mapped to hotkeys, but everything will be available form the HUD. The menu will include everything that can be done to a target. Anything a player isn't actually able to do (does not have a weapon to fire, key to open, skill to use, etc.) will appear greyed out. In this way players not only know what they can and can't do ("I can punch him, but I can't shoot. Oh yes, I need to get more ammunition."), it also teaches players about possible options in the game ("Pick lock? It would be great to have that skill. I should learn it.")

Communication

Ideally, it would be nice if communication in the game was solely audio, with PCs communicating with one another vocally. However, while limited applications may be found in-game for audio communication, it only works so far. To begin with, the amount of sound information transmitted from player to player may prove too much for a game that is already attempting to relay a great deal of game world info around. In addition, there are certain things in the game you just can't do using voice, like communicate with NPCs.

Basic Text Chat

The basic means of communication in the game will therefore be handled using a text window (the infamous GTA pager). This text window will allow people to type messages back and forth to one another. However, the range is limited for normal talking and even more so if a player wants to keep their message private by whispering. Players can also shout, which increases the range, but this doesn't cover the entire game world, just a decent amount of it.

Pagers and Phones

If a player wants to contact another PC in the world who isn't nearby, they can "call" that player's text window from a phone. If both players are at a phone, they can text chat freely back and forth. If the receiving player isn't at a phone, then they can only receive messages.

BBS

Bulletin board systems are scattered around the city for players looking for jobs, items, skilled accomplices, etc. It's also the place where players can check the Snitch List or their Rap Sheets / Wanted List. The system won't be open ended, meaning players can't post unrestricted, but rather they can post what they want through a simple form set up with limited-character text windows. Some aspects of the board can be automated, like when a player enters a meeting room area in a bar or Faction HQ. As they already have to input information about the job and how many guys they're looking for, they can choose to have the results posted on the BBS.

Limited Audio Communication

NPCs that sit and stare at you while they communicate solely through text aren't very immersive. In order to make the city feel that much more alive, each NPC can access a series of canned, audio files, to accompany any text messages they may have. In certain cases, like when a player isn't directly communicating with an NPC, the NPC may use just the audio (i.e. inviting the player into their shop, etc.). PCs will also be able to communicate through the limited use of canned audio. Things like simple threats, orders, etc. can be accessed through a simple right-click menu. This will make things like simple robberies much easier as players don't have to pick a target and then attempt to type their commands at them, choosing instead to expedite the process by choosing the "Gimme all your money" option from the right-click menu. Complex mission communications with NPCs will have to be done using text, but the more this can be limited, the more immersive the game world.

5. The City / Environment

Interiors

In order to give crimes a more detailed venue for players to use skills such as lock-picking or intimidation, some crimes will have to take place in relatively detailed interior environments like banks or liquor stores. Since having an interior for each building existing in the game world would rapidly spiral memory and poly usage out of control, we are implementing a mini-zone system that will take the players out of the regular game world and into a "bubble universe" composed entirely of the building interior.

These will be relatively simple 1 to 4 room areas that will be fairly generic for certain classes of buildings. For instance, there may be 50 liquor stores in the game world but they will all have the same basic 1 room interior and textures. A simple badging system will be used to put the store name above the till or, random posters on the walls and things to that effect. The interior will have workers who are there all the time during work hours and random customers. Some interiors such as banks will have targetable objects to work your skills on like a vault door that one could either crack or demolish.

The downside to this technique will be the load delay when walking through a door, the lack of interaction between the outside world and the bubble universe (i.e.- somebody shooting at the windows of a liquor store will not be able to hit players inside. Though it should be possible to keep track of catastrophic events such as a bomb going off right in front of the store) and the fact that interiors of a certain class will be very similar to each other. This is more than balanced but the fact that interior environments are a must if we are to provide a venue for the kind of relatively complex criminal acts that will keep subscribers paying for *GTA:O* month after month. As a bonus, if we pursue a design that allows for player to own property then this system will be ideal for allowing players to store vehicles in their own private garages.

Interior Classes:

Liquor Store- 1 Room
Restaurant- 2 Room
Convenience Store- 1 Room
Mansion- 4 Room
Police station- 4 Room
Gun store- 1 room
Bank- 3 Room
Jewelry store- 2 Room
Car Dealership- 4 Room
Small Garage- 1 Room
Lg. Garage- 2 Room

Ownership

Players in *GTA:O* are currently able to purchase 4 classes of property, which will allow them to store larger items, hide from pursuers and meet with other characters in absolute privacy. While these classes may seem unrealistically limited, the bubble-universe system does not deal

well with locales with multiple access points and so things like suburban houses will not be available for ownership.

The game will withdraw money from a player's money total every month for each piece of property they own. If a player does not have the money they will lose any of the properties they have after the initial one in each class and all the things inside them. Their initial property in each class will remain theirs but locked up until the time when they can afford to pay the back-rent and regain access to the structure

Apartments

Apartments will be the primary property purchases and will allow players to own a personal space where they can meet, hide and store equipment in relative safety. Players will rent an apartment by entering specially designated buildings and interacting with the building manager. A monthly rent fee will be charged to the player and they will be given access to a individually numbered apartment which will open to them automatically. If the player is inside their apartment and another player outside clicks on the door the owning player will be shown a dialogue box where they can chat with the person outside the door and a yes/no button to let that person in.

While it will be possible to break into someone else's apartment, each floor will have a tough guard and most buildings will be in faction territory so that even if a player is successful in getting around or defeating the guard, they will take a large hit against the faction that owns the building. This should inhibit players robbing their own faction mates. As an added security arrangement, players will be able to use their conceal skill to hide certain items in certain objects. For example a player could hide a machine pistol in the cushions of the couch and only another player making a successful perception test against that conceal, could see it or pick it up.

Fig. 5.1 – Apartments

Garages

Garages will be the safe way to store cars and, more importantly, spare parts. While *GTA:O* is about stealing and selling cars, Garages will be for the driving orientated player who wants to build a sweet ride and keep it for a while. A normal garage will just be a simple large room with a sliding door that can hold a single car. A large garage will have space for 2 large vehicles and a back room with a cot and cabinet. Garages will come with the equipment necessary to modify cars (i.e. Engine lift, welders, main lift) and with room to store a spare engine, tires and armored plating. It will be possible for a player to turn his garage into his own chop shop and police will not enter the premises unless they have extreme probable cause such as the player driving in their with a stolen car while they are right behind him in pursuit.

Like apartment buildings, most garages will be in factional territory to discourage casual theft and hopefully enough "dummy" garage doors will exist in the city to discourage a player just wandering around trying to get into every garage door he sees.

Town Houses

Town Houses will be the swankest property a player can own and will be a combination of a multi-floor apartment and a garage. Entrance is gained through either the garage door or the front door but the ground floor windows are barred to prevent entry. This will be a property of prestige for would-be crime lords. Plenty of room and relative immunity from police searches but very expensive. The townhouse will make an excellent safe-house and will be positioned mostly in neutral territory.

The garage will accommodate a single vehicle but will be fully operational. Break-ins will be very difficult but still possible. To counteract this players can buy security alarms for their Town houses, which will, ironically, bring the police in fast.