

# Cubit

A role-playing game by Carl Muckenhoupt  
Based on a character sheet by Andrew Kenrick  
Version 0.3

## 0. Introduction

Welsome to the Grid!

The Grid is a completely artificial environment of smooth metal walls and right angles. There are vivid colored lights and stark shadows, but no natural light, and no night or day. The only sounds are the beep of electronics and the whir of servos. A dimly glowing grid covers the ground -- or is it a floor? It's hard to tell if you're ever really outdoors here. Here and there groups of cubes, painted in a variety of abstract patterns, tumble end over end on mysterious errands. These are the "cube units", or "cubits" for short, and this is their world.

Where it all came from is anyone's guess. The cubits themselves have various theories.

### 0.1 About the game

Cubit is a rules-heavy, gamist, miniatures-based role-playing game. Except the miniatures are all cubes. Gameplay consists largely of fiddly maneuvers on a battle grid. Many of its ideas are swiped from the d20 system, although the core mechanic is different. The rules below assume that you're familiar with how such games generally work, and are comfortable with concepts like "GM" and "player character".

It was created in September 2006 as part of Kevin Allen's [Reversed Engineer](#) contest, in which participants had to design games based on someone else's character sheet design. The sheet I was given contained instructions to fold it into a cube and "roll your character sheet". Just to be perverse, I decided to interpret "roll" not as rolling it like a die, but as a way of moving it on the grid. (Although there are a couple of places where you do roll the cube like a die -- notably, during character generation.)

## 1. Life on the Grid

### 1.1 The Environment

The Grid is exactly what it sounds like: a completely regular square grid that covers all inhabitable land. It divides the world into squares, each of which is large enough to hold a single cubit.

### **1.1.2 Grid energy**

Grid energy powers the cubits and all of their machines. It's carried by the lines of the grid from the powerhouses that generate it. Given the law of conservation of energy, it's reasonable to wonder where the powerhouses get the energy from. No one knows. This is one of the mysteries of the Grid.

Powerhouses require constant maintenance to keep operating. If a powerhouse goes down, the grid in its immediate area will become "powered down". In this state, the lines of the grid disappear and nothing in that area receives grid energy. The size of the area effected varies from powerhouse to powerhouse.

Rarely, cubits use "portable generators" to bring power to powered-down areas. These are devices as large as cubits that can be pushed from place to place, but only provide grid energy for a radius of three squares..

### **1.1.3 Inhabited regions**

Most cubits live in fairly dense city-like areas that have the facilities they need to perform their functions. In any major metropolis, you can find:

- A large central powerhouse, and smaller powerhouses for outlying regions
- One or more factories and body shops
- Meeting halls for the major factions
- Research laboratories
- Libraries
- Scrapyards
- Sculpture gardens

Most facilities provide services to the public free of charge, although they will have their inner workings sealed away from vandals.

Cubits have no long-range mass communications, so cubit culture tends to be very local. Each city has its own distinctive architectural style, influenced by the popular exhibits in the sculpture gardens.

### **1.1.4 Out There**

Beyond the developed areas are uninhabited, powered-down areas. Cubit explorers with portable generators will sometimes venture Out There to prospect for the raw materials from which all cubit technology is made: metals, glass, insulators, etc. These all occur naturally in the form of large, solid, rectangular blocks.

Occasionally, explorers come across a dead city forgotten to history. This is an exciting discovery for both prospectors and historians, and there will be a struggle over whether artifacts should be preserved for research or returned to use (or even torn apart for scrap). It's possible that there are unknown inhabited cities out there somewhere, with their own mores and customs.

## 1.2 On Cubits

### 1.2.1 Cubit life cycle

Cubits are, as far as anyone knows, the only intelligent beings on the Grid. A cubit has a body and a soul. Bodies are manufactured at various factories (or "body shops") found throughout the Grid, and are all the same size and shape. They all start out in the same standard configuration, but can be altered with upgrades.

The soul is kind of strange. It's a physical object, which can be carried around, but it has no discernable qualities. If you ask a cubit what a soul looks like, the only answer you'll get is "like a soul". It's speculated that this peculiar blindness was engineered into the cubits by their creators in order to prevent them from taking souls apart and figuring out how they work.

No one knows how souls are made. There are certain places on the Grid, called "spawn points", where new souls occasionally spontaneously appear. Spawn points are usually inside grand cathedral-like buildings, but the buildings were built around the spawn points rather than the spawn points appearing inside the buildings.

As bodies get hurt, they go through three states: undamaged, damaged, and damaged beyond repair. Damage effectively renders a cubit unconscious, so only undamaged bodies are capable of moving or taking actions. Whenever a cubit is hurt, it advances one stage along this list: undamaged becomes damaged, damaged becomes damaged beyond repair. A cubit that's damaged beyond repair and gets hurt blows up. When a body blows up, it ceases to exist and no longer occupies space, but the soul is left sitting in the square where it resided, along with the contents of the cubit's storage compartments. (Installed upgrades are destroyed with the body. One reason to avoid blowing up a cubit is so you can recover its temporary upgrades.)

A skilled technician can remove a soul from a body and put it in a new body. This is usually only done when the old body is beyond repair, due to the difficulty in adjusting to the new body.

Sometimes souls just vanish. It's not clear why, considering that death of the body usually leaves the soul intact. It's not even clear if all souls are mortal; some cubits have been around for a very long time. Some cubits hold that the soul goes back to its source when its purpose on the Grid has been fulfilled.

### 1.2.2 Name and Identity

Cubits aren't given names at birth, and many cubits never get named. Generally speaking, you get your name when other cubits want to talk about you. Names start as mere descriptions of a cubit's appearance (that guy with the blue stripes), function (the foreman at the construction site), or temperament (the big jerk). If a description gets used repeatedly, cubits will start abbreviating it and using it like a name (Blue Stripes, Foreman, Big Jerk). Well-known cubits may have their names shortened even further, to something like "Bloost" for Blue Stripes or "Figsogren" for the eminent scientist Figuring Out The Source Of Grid Energy.

Cubits that are known in different quarters for different reasons may well develop multiple names. If someone achieves renown for defeating an enemy, his friends might call him Stalwart Defender while his enemies call him Destroyer Of Hope.

The identity, personality, and memories are housed in the soul. The soul is, in effect, who a cubit is.

Since bodies come and go and souls are indistinguishable, the only way you can reliably tell cubits apart is by their voice. Voices are absolutely individual, unmistakable, and inimitable.

### **1.2.3 Functions**

The vast majority of cubits are born with an innate sense of what they're supposed to do. Maybe it's repairing other cubits, maybe it's exploring lost cities, maybe it's circling the factory a million times and then exploding. Not all functions make sense. Regardless, for beings that are essentially without biological needs, the function is the single greatest motivating force.

A cubit's function isn't necessarily permanent, however. One of the biggest decisions a cubit can make is to abandon their native function and take on a new one. There are rites of passage on par with marriage associated with such a decision. There are moving tragedies written about cubits who abandoned their function too soon, or kept it foolishly.

Occasionally a cubit comes into being with no idea what it's supposed to be doing. The consequences of this are left as an exercise for the reader.

### **1.2.4 Factions**

Most cubits belong to a faction. Factions are essentially interest groups that facilitate cooperation between like-minded cubits, sometimes against unlike-minded cubits. Individuals may choose express their enthusiasm for their faction by means of their color scheme, but this is not mandatory, and is even considered gauche in some circles.

There are five major factions that you can find in any major populated area:

#### **The Governors**

Colors: blue and yellow, like a uniform with gold trim

The ruling class of the Grid. Keepers of the peace and foes of anything that threatens the status quo. This includes religious movements and other radical ideas.

The Governors appreciate the Builders' role in maintaining society, and see the Rangers as expanding their power and influence, but fear the destabilizing effects of the Reachers and Delvers.

#### **The Builders**

Colors: yellow and black, like heavy machinery or hazard stripes

Architects, machinists, and in general the creators and maintainers of the infrastructure of cubit society. If there's a secret passage, they've got a map of it in

the vaults somewhere.

The Builders appreciate the Governors dealing with vandals, and use Reacher technology in their work, but see the Delvers and Rangers as impractical dreamers who can't be trusted with anything important.

### **The Reachers**

Colors: black and green, like an old-fashioned CRT monitor

Technologists who believe in progress as a way to improve life. The Reachers are the main source of cubit upgrades. Their labs are full of potential disasters waiting to break free.

The Reachers rely on the Builders to implement their grander ideas, and frequently share notes with the Delvers, but dislike the interference of the Governors and the waste of resources on the Rangers' expeditions.

### **The Delvers**

Colors: green and white, like a classroom chalkboard

Pure researchers who seek knowledge for its own sake. Their quest for greater understanding of the Grid leads them to both scientific and historical investigation. Scientific research leads them to work alongside the Reachers, and archeological research leads them to cooperate with the Rangers, but they dislike the Governors and the Builders for keeping secrets and trying to claim artifacts for practical use.

### **The Rangers**

Colors: white and blue, like the sky, or the Earth seen from space

Explorers, prospectors and settlers who want to expand cubit society into Out There. These are the cubits who find the ruins of lost cities, and they'll be the first to contact other cubit societies in unknown lands.

The Rangers collaborate with the Delvers in exploring, and appreciate the Governors help in keeping the law on the frontier, but they resent the Builders and Reachers for concentrating their efforts on already-developed areas and thereby keeping the population concentrated and urban.

You may have noticed that the colors of these factions are also a guide to their alliances. If two factions share a color, they generally like each other. Of course, these are generalities, and should not be taken as preventing an individual Builder, say, from forming a friendship with an individual Ranger. Furthermore, although each of these factions dislikes half of the others, they're usually in a state of truce. Some areas have "grand councils" with representatives from each major faction, and can even appoint inter-faction task forces for special purposes. (This is a good way to get the player characters together if they've chosen different factions.)

Certain paranoid cubits hold that the grand councils are secretly ruled by a shadowy sixth faction called the Bottom Side.

In addition to the major factions, there are minor factions, always local to an area. These include political and religious movements, as well as interest groups, artistic movements, and gangs.

Political movements generally want to end the rule of the Governors and replace it with something either more democratic or more authoritarian. Some political movements confine themselves to public debate, trying to convert enough cubits to their side that the Governors simply lose their authority. Others take a more violent

approach. All are considered enemies by the Governors.

Gangs can be thought of as interest groups whose interest is violence. Most gang members are cubits whose Function is to hurt other cubits or break things.

### **1.2.5 History**

Not much is known about the past. Although cubits have obviously been around for a long time, the oldest living cubits are little more than machines, carrying out their functions and not interested in anything else. Cubit *society* seems to be a fairly new phenomenon. But certain things found in the ruins of lost cities suggest that this is not the first time it's happened.

Why the ancient civilizations ended is a mystery. The Delvers are keenly interested in figuring it out so they can avoid the same fate. The Governors, on the other hand, think that the best way to avoid it is to stop all change.

## **2. Characters and Cubes**

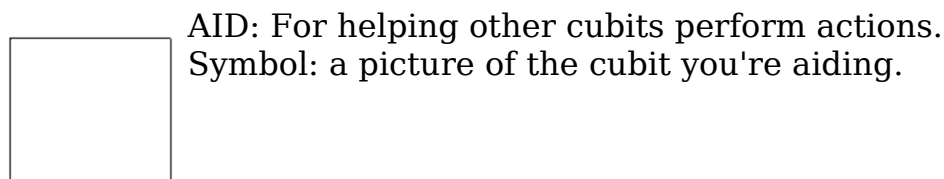
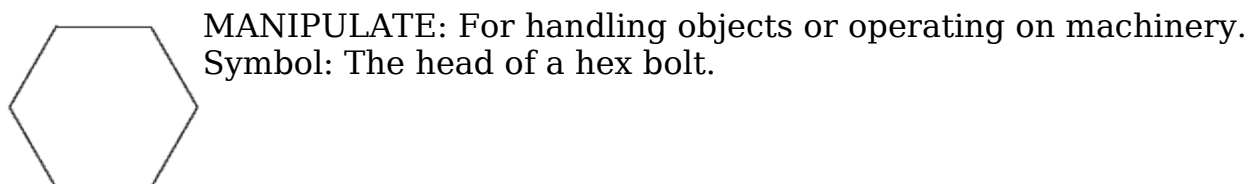
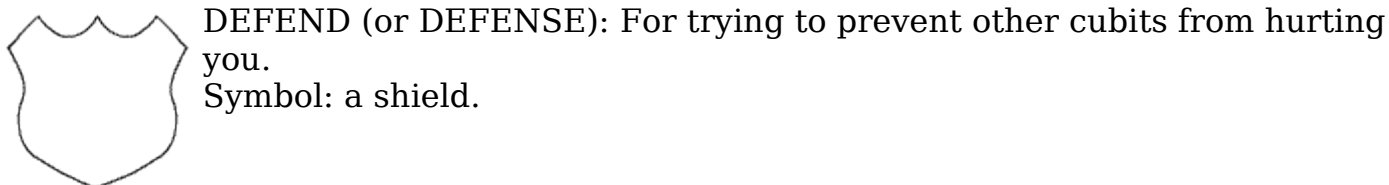
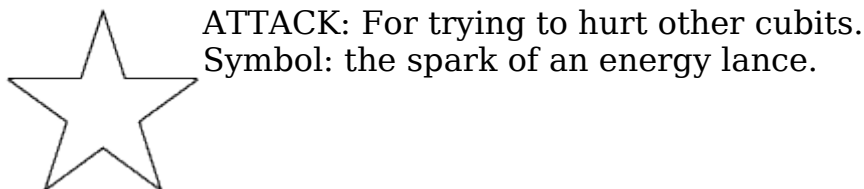
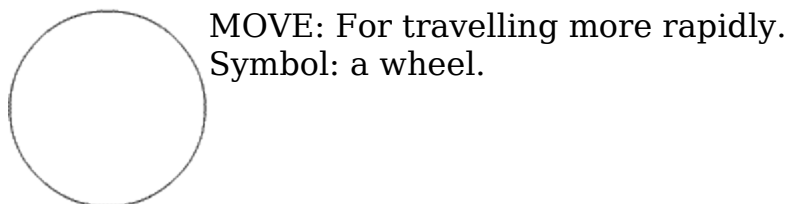
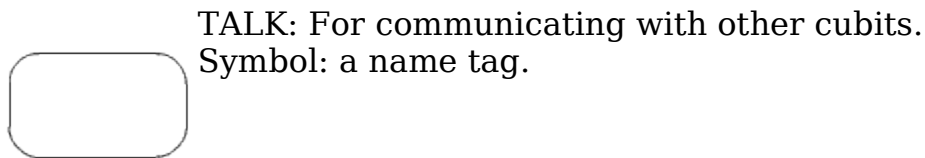
Cubit is essentially a miniatures-based game, but the miniatures are all cubes. Each side of the cube interacts with the world in a different way, and the orientation of a cube is important. You can use six-sided dice as your miniatures, recording what each side represents on a sheet of paper, but it's a lot easier to follow if you make cubes that you can write this information on directly. Good heavy cardstock is recommended for this.

If you use dice as minis, make sure every player has a distinctive-looking die. If you make your own cubes, you can decorate them however you want in order to express your cubit's personality. Be creative! Color it with faction colors or colors of your choosing; embellish it with zig-zags, polka dots, abstract intersecting loops, runes, whatever. Just be sure to leave enough blank space on each side to record your interface skill level and upgrades.

## 2.1 Interfaces

Each side of a cubit has an interface on it, and there are six kinds of interface. The standard configuration used by player characters has all six kinds of interface, but specialized cubits may have similar interfaces on multiple sides.

The six interfaces are:



The standard configuration has these six interfaces arranged to correspond to the numbers on a standard right-handed six-sided die in the above order. That is, the side of the die with 1 corresponds to Aid, 2 to Manipulate, and so on.

A cubit has a skill level associated with the interface on each side. This represents that particular cubit soul's facility with using that particular apparatus. Even if a cubit has similar interfaces on multiple sides, it may have different skill levels with them. Higher skill levels are generally good, although they make it harder for other cubits to assist you in various ways.

Skill levels have a minimum value of 1 in order to be usable. If something reduces the

skill level on a side to less than 1, that side cannot be used. There is no maximum skill level.

## **2.2 Character generation**

New player characters are generated in standard configuration with a total of 21 skill levels throughout their sides. There are two methods for this:

Method 1: Assign the numbers 1 through 6 to the six sides of your cubit however you like.

Method 2: Start with a skill level of 1 on all interfaces. Roll your cubit like a die 15 times, increasing the skill level of the face that comes up on top by 1 each time.

Once you've done this, you can pick up as many permanent upgrades as you feel like you can afford.

Do not give your cubit a name! That's up to the other players.

Decide on a function for your cubit. You can discuss this with the other players, or you can keep it secret. Ultimately, your function is something only you really know.

### **2.2.1 Scrapping your character**

If you ever get damaged beyond repair, or if you decide you want to start over with new stats, remember: you can always get a new body from the factory. Each body feels slightly different, so you'll start over with new stats. Just repeat the character generation steps above, and keep any possessions you had, including any intact temporary upgrade items. Bear in mind that getting blown up will destroy any installed upgrades, and permanent upgrades are never transferrable between bodies.

### **2.2.2 Improving your character**

The GM should award skill points on the successful completion of a scenario. Typically, you'll get a skill point just for participating, and may get additional points for optional goals completed along the way. For example, suppose your scenario is about rebels taking control of a powerhouse. Your main objective might be regaining control of the powerhouse, and for that you'd get 1 point. You might get an additional point if you stopped them before they broke the machines and powered down the local grid, and another if all the hostages survived, and another if you found out why they wanted the area powered down in the first place.

Skill points are immediately used to improve your skill levels. For every skill point you get, you may increase any skill level by 1.

Between scenarios, you can also shop for permanent upgrades. Permanent upgrades involve reducing your skill levels in order to get some other benefit.

## 2.3 Character notation

When describing a cubit's configuration and skill levels in text, we state the contents of each face in the order of the faces on a standard right-handed six-sided die. Each term starts with the interface symbol or name followed by the skill level, followed by any upgrades. For example, a typical starting character might be: ◻2 ○6 ☆5 ♣4 ○3 ◻1

## 2.4 Positioning and Exposure

At any given moment, your cubit has a location and an orientation on the Grid. One side is on top, one is on the bottom. The other four are adjacent to either open space, a wall or other obstacle, or another cubit. In order for you to use a side, it must be "exposed", which means it is either on the top or adjacent to open space. Those interfaces that are not exposed are "blocked".

When not constrained by combat or other limitations, cubits can freely reorient themselves to expose whatever interfaces are needed. Since the top face cannot be blocked, there's always at least one skill you can use.

Unless stated otherwise, actions require that you be adjacent to the thing you're acting on. You are adjacent to something if one of your sides is flush with it. If you share a corner with something, you are "diagonally adjacent" to it, which is not enough.

## 2.5 Skill checks

Whenever you try to do something that might fail, you make a skill check. There are two kinds: targetted and opposed. Targetted skill checks involve trying to achieve a predetermined target value. Opposed checks involve two cubits making simultaneous skill checks, with the higher result winning.

In general, you make a skill check using the skill level on one exposed side of your cubit that has an interface relevant to the task. For example, if you're trying to fix a machine, you'd make a skill check with a Manipulate interface, and if you're trying to hurt someone, you'd use an Attack interface. Blocked sides cannot be used.

When making a skill check with the top face of your cubit, treat the skill level as double its actual value. This applies to all skill checks, including both halves of an opposed check.

When making a targetted skill check without time constraints or other distractions, you can just compare your skill level to the target. If your skill level is greater than or equal to the target, you succeed. Note that in such situations you're usually free to reorient your cubit to put the face you're using on top.

Any other skill check -- that is, all opposed checks, plus targetted checks made in combat or other constrained situations -- has a random element. To make the check, we use minis from the fantasy RPG of your choice. Take a number of minis equal to your skill level and throw them on the table. The value of your check is the number of minis that land with their bases pointing more toward your cubit than away from it.

Any that land ambiguously may be rethrown.

(If this is too silly for you, you may use coins instead of minis and count how many come up heads. Better yet, for faster counting, use Othello pieces or other discs with sides in contrasting colors. But if you ask me, it's only fair for a game that uses dice as minis to use minis as dice. We have to keep the mini manufacturers in business somehow.)

Opposed skill checks involve an "attacker" and a "defender", even if the action is not hostile: the cubit who performs the action that requires the check is considered the attacker, and the other cubit involved in the check is the defender. Opposed checks can be thought of as targetted skill checks where the target value is the result of the defender's skill check. Thus, in the case of a tie, the attacker has equalled the target number and wins. If the defender has multiple exposed interfaces that can be used for the check, the defender gets to choose which to use. If they have no applicable exposed interfaces, they automatically lose. (Talk checks are an exception to this. See below.)

The circumstances of a skill check may grant a bonus to a cubit, and the circumstances of an opposed check may grant bonuses to both cubits. Bonuses add to the effective skill level used in that check. In checks made with the top face, bonuses are applied after the skill level is doubled.

Damaged cubits cannot make skill checks. If a damaged cubit is ever required to make a skill check, it is automatically considered to have thrown a zero.

## **2.6 Skill use in detail**

### **2.6.1 Attack and Defense**

This is fairly simple: when a cubit attempts to harm another cubit, the attacker makes an attack check opposed by the defender's defense. If the attack succeeds, the defender becomes damaged.

Because damaged cubits cannot make skill checks, attacking a damaged opponent automatically succeeds. The result is that the opponent becomes damaged beyond repair. If attacked a third time, the defender blows up.

Targetted attack rolls can also be used to damage adjacent machinery or other objects. Here are some typical target values:

Smash delicate glass object	1
Obliterate graffiti	5
Render control console or portable device unusable	10
Stop heavy machinery, such as factory or power generator	20
Blast cubit-sized hole in wall	50

When trying to damage an item held by another cubit, you make a check that's both opposed and targetted: your throw has to beat both the opponent's defense throw and the object's target value.

Cubits can damage themselves if they want to, or deliberately allow others to damage them, as long as the one doing the damaging has an exposed attack interface. No skill check is necessary for this, and the victim can allow the damage to go directly to Beyond Repair or Blown Up.

Defense is never used as an action. It is only used passively, as a way to avoid damage or other bad things. It may be used in targetted checks to avoid being damaged by environmental hazards, such as fire, spikes, laser beams, etc.

## 2.6.2 Manipulate

The manipulate interface is used whenever you push a button, turn a knob, or otherwise operate machinery. No skill check is needed for these uses. All you need is an exposed manipulate interface. It is also used to pick up small objects. Every manipulate interface has an internal storage compartment that can be used to protect objects that have been picked up and hide them from view. If a cubit has multiple manipulate interfaces, each has a separate storage compartment.

The most common use for the manipulate interface is repairing damaged cubits. This is done by means of a targetted check against the skill level of the interface on top of the other cubit. (This is admittedly a little arbitrary, but it makes for interesting gameplay.) The target value is the raw skill level, not the doubled value as would be the case if the damaged cubit were making a skill check with that face.

Some other uses of the manipulate interface:

- Complicated devices may require a targetted check to use properly. Bypassing locks and security devices typically requires a targetted Manipulate check of 15-50.
- Repairing broken machinery generally requires a targetted check with the same target value as the Attack check used to break it. However, repairing things usually requires replacement parts as well.
- Stealing an item held by another cubit takes a Manipulate check opposed by Defense or Manipulate. Temporary upgrade items can be removed this way. Items in an internal storage compartment cannot be stolen unless you first force open the storage compartment, which also takes Manipulate check opposed by Defense or Manipulate.
- Installing a temporary upgrade on another cubit in a hurry takes an opposed Manipulate check against the skill level of the interface you're installing it on. You cannot install a temporary upgrade on yourself, although you can aid someone else in installing one on you.
- Installing a soul in a new body requires a Manipulate check with target 30. Removing a soul from a damaged body without damaging it further requires the same. (If a body is damaged, the easiest way to get the soul out is to blow it up.)

### 2.6.3 Talk

You need an exposed Talk interface to communicate with most cubits. If your Talk interfaces are all blocked, you are effectively gagged and ear-plugged. If you have at least one Talk interface exposed, you can hear anything said through a Talk interface reasonably near you.

Cubits that work together closely, however, will often have a "private channel" that allows them to communicate without a Talk interface, and without being overheard. It is assumed that the player characters share a private channel. Either way, cubits communicate very efficiently, and can recite entire novels between turns in combat.

While simply having a Talk interface exposed is enough to say things, you may need to make an opposed Talk vs. Talk check in order to convince other cubits that what you say is true, or to persuade them to do things that they wouldn't do otherwise. It's up to the GM when this applies, and it is permissible for the GM to simply declare that a given cubit is unpersuadable.

Opposed Talk checks nearly always involve bonuses. While the GM should have a great deal of latitude in assigning these bonuses, here are some suggestions:

Bonuses for the speaker:

Speaker is clearly of a faction that listener likes 2

Speaker has listener's best interests at heart 2

Speaker is known and liked by listener 3

Speaker is listener's boss or superior 5

Listener has prior evidence of speaker's claims 1

Speaker has already successfully deceived listener about his status or identity 1

Bonuses for the listener:

Speaker is clearly of a faction that listener dislikes 2

Listener considers speaker to be an enemy 5

Speaker is lying 1

Speaker is trying to get listener to do something personally inconvenient 1

Speaker is trying to get listener to do something potentially dangerous 3

Speaker is trying to get listener to go against orders 5

Claims are against listener's religious beliefs 5

Speaker is trying to persuade listener to commit to new philosophical point of view 10

Speaker is trying to get listener to violate listener's function 15

Since a cubit without an exposed Talk interface cannot communicate at all, it is impossible to make an opposed Talk check against it in order to persuade it of things. Some ideological extremists deliberately replace their Talk interface so they can't be swayed by enemy propaganda.

Unlike most skill checks, Talk checks do not require you to be adjacent to the target.

At the GM's discretion, you may also be able to gather general information about your scenario with a targetted Talk check.

#### **2.6.4 Move**

The Move interface allows you to slide around on the Grid without rolling. With an exposed Move interface, you can slide one square per turn as an action. With a Move interface on top, you can slide a number of squares equal to its skill level in a straight line. Sliding does not alter the orientation of a cubit.

You can also use the Move interface to push other cubits. If the cubit resists being pushed, make an opposed Move vs. Move check. If successful, both cubits slide one square in the direction from the pusher to the pushee. If the cubit does not resist (or is incapable of resisting due to damage), and your Move interface is on top, you may instead push for a distance of half your skill rating rounded up. Pushing stops at any obstacle, including other cubits.

#### **2.6.5 Aid**

This is perhaps the most valuable skill, because it lets your party overcome obstacles too strong for any individual member. When you aid another cubit, you get to add your skills together.

Here's how it works: First, you and the cubit you are aiding must agree on what action you are aiding. The cubit receiving aid commits to a currently-exposed side that will be used, what it will do, and what it will do it to, just as if it were performing that action immediately. The cubit giving aid must be adjacent to either the cubit receiving the aid or the square containing the target of the action.

Then you make an opposed Aid check against that side. The rationale for this is that it's a lot easier to help others at things that they're bad at than things that they're good at.

If the Aid check succeeds, the cubit giving aid chooses an exposed side with the same type of interface as the side being aided. The chosen action gets a bonus equal to the skill level of that side, including any bonuses applicable to the situation at the time that the Aid check was made. (This includes doubling the raw skill level of the face if it's on top.)

The bonus only applies to the action agreed on, as performed by the side agreed on. The cubit receiving aid must complete the action within one round or forfeit the bonus. The cubit receiving aid should not change position or orientation between receiving aid and performing the action: the GM may allow the aid to work anyway, depending on the situation, but is not obliged to. The action may receive aid from multiple sources.

**Aiding talk:** You do not need to be adjacent to the speaker or the listener in order to aid a Talk check.

**Aiding defense:** Defense is not used to make actions, but can be aided anyway. When aiding defense, instead specify the cubit (or environmental hazard) you're defending against. If the aid succeeds, the recipient gets a bonus to all defense rolls against that thing for one round. If a cubit gets defensive aid from multiple sources in a single round, the bonuses can apply to the same attacker or different attackers.

**Aiding aid:** It is possible to give aid to an Aid check. For example, if a cubit wants to make a difficult Manipulate check, and another cubit with high Manipulate but low Aid wants to help it, you can support the second cubit's Aid check with an Aid check of your own. If you do this, you must agree on the action with both the cubit you're aiding and the cubit that the cubit you're aiding is aiding, and you must have an exposed interface of the type that the aid is ultimately going to (Manipulate in the above example).

## 3. Combat and other constrained scenarios

### 3.1 Starting combat and Initiative

When combat starts, lay out the battlefield and put all the cubits in the positions they would be in. A cubit that is ready for battle can choose its orientation. A cubit that's taken by surprise, and has no compelling reason to be in any particular orientation when surprised, should be rolled like a die to determine its starting orientation.

Next, establish initiative order (the order in which the cubits get the opportunity to act). Initiative order is determined by the skill levels on top at the start of combat: the highest goes first, the next-highest goes second, etc. If there is a tie, flip a coin (or throw a mini) to see who goes first. Initiative order doesn't change during combat unless someone defers.

### 3.2 Combat rounds and Deferring

Combat is broken up into rounds, which is broken up into turns. A turn is when a single cubit acts. A round consists of each cubit getting a turn.

On your turn, you normally do two things: roll and act. You can act and then roll, or you can roll and then act. You cannot replace your action with additional rolling or vice versa.

If you do not roll or act, you can instead defer or spin. By deferring, you remove yourself from initiative order. You can then re-insert yourself at any later time, just after another cubit's turn ends and before the next turn begins, and take your turn immediately. The resulting change to initiative order lasts until the end of combat.

If two or more players both want to stop deferring simultaneously, determine which gets to go first by the same means as you determined initiative order: the one with the highest skill level currently on top wins, and ties are broken by flipping a coin.

### **3.2.1 Rolling**

Rolling is the normal gait for cubits. It consists of moving into an adjacent empty square while rotating 90 degrees so that the side that starts facing that square winds up on the bottom. In other words, you roll over the edge joining the square you're on to the adjacent square.

You can roll up to three squares on your turn.

### **3.2.2 Actions**

You can perform one action on your turn.

Actions include:

- Anything that involves initiating a skill check, such as trying to hurt another cubit, trying to repair another cubit, attempting to aid another cubit, trying to alter another cubit's behavior by means of a Talk check, etc.
- Picking up an object with a Manipulate interface.
- Storing a held object in your storage compartment, or retrieving an object from your storage compartment.
- Sliding by means of the Move interface.
- Blowing up a cubit that has been damaged beyond repair.

...and so forth. Generally speaking, any single thing you do will take the same amount of time, although some things may require multiple steps to complete. For example, replacing a faulty circuit board might involve unscrewing an access panel, removing the old board, inserting the new board securely in its housing, and re-securing the access panel, thus four actions. In such cases, the GM should specify the steps before you begin, and steps completed will usually stay completed if you are interrupted.

Dropping items held in your Manipulate interface is a special case: doing it involves using that Manipulate interface, but it doesn't really occupy your attention the way that other actions do, so you're allowed to drop something and use the same Manipulate interface for something else on the same turn.

Talking only uses an action if it involves a Talk check. Otherwise, you can talk as much as you want on your turn even as you use a different interface.

### 3.2.3 Spinning

Spinning is changing your orientation without moving. This is a very awkward thing for cubits to do, so it takes a full turn. You can spin 90 degrees in any direction on your turn, but if you do, you can't do anything else.

In addition, you need space to spin in. Look at your position and ask: Could I actually rotate a cube in that space? In order to spin vertically (that is, about a horizontal axis), you need to have an empty square on at least one side that you're spinning through. In order to spin horizontally (about a vertical axis), you need to have either all four adjacent squares, or two neighboring adjacent squares and the diagonally-adjacent square between them, clear for spinning through.

### Combat tips

- The fastest way to lose a fight is for your Defense interface to become blocked. Specialists in front-line combat should consider getting multiple Defense interfaces. For anyone else, consider keeping your Defense side on top whenever you're not attacking.
- Use the terrain. The most interesting fights happen in areas with lots of obstacles to block interfaces. With the right positioning, you can push your foes into constrained areas.
- Deferring is powerful. It's the only way that two cubits can cooperate on an action uninterrupted, and thus useful for aided attacks.
- A cubit designated as the party's medic can spend most of its time deferring, waiting to spring into action the moment another cubit gets hurt. If you're facing an enemy that overpowers you so much that you expect someone to get hurt in every round, everyone might want to keep a low skill on top in order to make the medic's job easier.
- If a cubit has a high Defense on its top face, it can be hard to take it down. Consider mobbing it instead. Once it's surrounded on all four sides, it can't do anything.

## 4. Upgrades

Upgrades allow cubits to improve their abilities beyond merely increasing their skill levels. Every upgrade resides on one of a cube's sides, and affects only that side. Upgrades must be exposed to be used, and may have more powerful effects when on top.

### 4.1 Replacing interfaces

If you're not satisfied with the standard configuration, you can replace the interface on any side with a different interface. Doing so destroys all permanent upgrades on that side and reduces its skill level to 1.

## 4.2 Temporary and Permanent Upgrades

Temporary upgrades are objects that you affix to one of your sides. They can be removed and installed on other cubits. Temporary upgrades are one of the few things on the grid whose availability is limited. Unless you're lucky enough to defeat a foe with a temporary upgrade item, players will only be able to get them by being assigned them at the start of a mission or by doing favors (which is to say, side quests) for other cubits. Temporary upgrades may last for a limited amount of time, or have a limited number of charges.

Permanent upgrades are alterations to an interface. Any body shop can make permanent upgrades, and will do as many as you want for free. The only downside is that each permanent upgrade reduces the skill level of the face it's on by a certain amount. This is the cost listed in the upgrade description. You are not permitted to install any upgrade that would reduce your skill level to less than 1.

If using a full-sized cubit, we suggest that you write permanent upgrades directly on its faces, and use trimmed-down post-it notes for temporary upgrades.

## 4.3 Specialization upgrades

The specialization upgrade is a special kind of permanent upgrade that increases your ability to use an interface for one of its normal uses, but lowers your ability to use it for anything else.

The cost of a specialization upgrade is always 1 skill level, although it can be taken multiple times on the same face. For this cost, you get a +2 bonus on a specific action performed by that face, plus an additional +2 when it's on top.

Some actions you can get specialization upgrades for, sorted by interface:

- ☆ breaking inanimate objects.
- ☹ targetted checks against specific kinds of environmental damage, such as fire, spikes, laser beams.
- ○ cubit maintenance (including repair, temporary upgrade installation, and soul insertion); machine repair; machine use; security hacking; stealing (including stealing held items and forcing open cubit storage compartments).
- □ lying; pacifying; giving orders; interrogation; gathering information (with targetted check)
- ○ pushing cubits.

You cannot specialize in the use of Attack or Defense in normal opposed Attack/Defense checks.

## 4.4 Other upgrades

The following upgrades come in both temporary and permanent forms.

Battery

Interface: Any

Cost: 1 per charge capacity

Batteries let you act in a powered-down area of the grid. If it's on top, you can use it to do anything that you can normally do in a turn. If it's exposed but not on top, you can use it to spin and to make Defense checks. Either way, every turn that you use it consumes one charge, and it cannot be used when at zero charges. Spending a turn doing nothing but talking over your private channel does not consume any charges. Every turn that you spend in a powered-up area returns one charge to one battery, up to its total capacity.

Corner Attack

Interface: ☆ Attack

Cost: 5

You can use this interface to attack a cubit that is diagonally adjacent to you. The attack proceeds normally in all other ways.

Fast Spin

Interface: Any

Cost: 1

On your turn, you can spin 90 degrees instead of rolling -- that is, you can spin 90 degrees and make an action as your turn. Alternately, you can spend your full turn to spin 180 degrees. The normal constraints on spinning apply. This is only applicable to spins about the axis going through the face with the Fast Spin upgrade. For example, if your Fast Spin upgrade is on the top face, you can only use it for spins about the vertical axis.

Martial Arts

Interface: ○ Manipulate

Cost: 3

You may use this interface instead of an Attack or Defense interface in an opposed Attack/Defense check.

Spin Other

Interface: ○ Manipulate

Cost: 3

You can use this interface to spin an adjacent cubit 90 degrees in any direction as an action. The usual spatial constraints on spinning apply. If the cubit does not want you to spin it, you must succeed on a skill check with this interface opposed by target's Defense or Manipulate.

Spring

Interface: Any

Cost: 4

When you both roll and perform an action with this interface on a turn, you can break up the roll into two parts, one before and one after the action. For example, you can roll two squares, act, and then roll one more square.

Squeeze Spin

Interface: Any

Cost: 2

When you spin about the axis containing this upgrade, you can ignore spatial constraints. For example, if it's on top, you can spin horizontally even if surrounded by other cubits on all four sides.

Swerve

Interface: ○ Move

Cost: 2

When using this face to slide, you can change the direction you're sliding once. If you take this upgrade multiple times on a single face, you can change direction once per instance of the upgrade.