Perception

This article looks at how *Perception* works in considerable more detail than in the basic rules. Most of the rules here are not meant to be used all the time - for the most part they can be used simply as a guide.

Basic Sight

Seeing people is generally straightforward. How hard is it to spot a person who is 100m away though? Or 1km? How about 1km and hiding behind a bush?

It is assumed that a person has a basic spotting range equal to their *Perception* x 100m. A typical person can make out another person out to 300m. Beyond this range, double the difficulty to spot a person.

Situation	Modifier
Spot a standing person. Base difficulty to see a person who is standing in the open, making no attempt to hide themselves.	0
Size above 5. Each point of size of the target above 5, reduce the difficulty by 5. If they are smaller, then increase the difficulty by 5 per point.	-5/pt
Distance 50m - 100m. If the target is over 50m away, then increase the difficulty by +5.	+5
Distance over 100m. If the target is 100m away or more, then increase the difficulty by +10. Each doubling (200m, 400m) adds a further +10.	+10
Half cover. If the target is hidden in half cover.	+10
90% cover. If the target is almost entirely hidden.	+20

To spot a target, you make a simple *Perception x Awareness* check at the specified difficulty. If you are actively looking (i.e., not doing anything else other than simple movement) then the difficulty is halved. It is assumed that generally people aren't able to *actively look* for long periods of time.

The following chart shows difficulties to spot a person at a given distance, ignoring all other modifiers.

Modifier	Distance
+5	50m+
+10	100m+
+20	200m+
+30	400m+
+40	800m+
+50	1,600m+
+60	3,200m+, This is the horizon for someone with an unobscured view standing on flat ground.
+70	6,400m+
+80	12,800m+
+90	25km+, This covers the distance to the horizon from a height of 100m.
+100	50km+

Outside, assuming there is plenty of time to spot, then a person can be assumed to make a spot check of 26, enabling them to see a stationary person across a field out to 300m.

Hiding

If you wish to actively hide from the sight of others, then you roll your *Perception x Stealth* and this becomes the base difficulty to spot you, modified by the previous tables.

Cover

If you have something to hide behind which provides full cover (such as a wall), and aren't interested in being able to see those looking for you, then hiding can be considered an automatic success.

If you wish to take the occassional peek, then you only get the 90% cover bonus. Note that objects which provide almost total cover (such as a tree) only give the 90% cover bonus, since it doesn't provide cover from all angles.

Lack of cover

On the other hand, if there is no cover at all, then hiding can be difficult. If you're on a relatively flat plain, with only poor cover, then halve the *stealth* roll. With minimal cover, quarter the *stealth* roll.

Camouflage

It is assumed that when you are trying to hide that your clothing is relatively neutral.

If you are wearing suitable camouflage, then double the effective distance between you and the viewer. Standard camouflage is anything that is a suitable colour to match the background.

If you have *good* camouflage, which is real camouflage gear (random patterns to break up edges etc), then the distance is x5.

Excellent camouflage is x10. This represents bulky camouflage gear, with vegetation and the like covering you.

Superb camouflage is almost perfect, and provides a x20 modifier to the distance. You can be almost impossible to see at any distance.

Chameleon suits

Chameleon suits are an ultra-tech form of clothing which dynamically changes colour to match the environment. It will generally provide *standard* or *good* camouflage in any situation.

Ghosting

Ghosting is another ultra-tech invention which provides a form of limited invisibility. Anything which makes you partially transparent is considered to be *ghosting*. Depending on the level of technology, it will provide anything up to *superb* camouflage.

Alarms and Sensors

Sensor systems have, much like characters do, two properties - a *Perception* attribute which represents the physical sensitivity of the device, and an *Awareness* skill which represents the quality of the processing software. The technological level is more likely to affect the type of sensors

available, their price and availability, and how easy they are to fool.

Sensors are generally limited to sensing only a specific type of activity - motion, sound, heat, vibration etc. If you know how to counter them, then they can be quite easy to counter.

A typical sensor suite will have a *Perception* of about 3. A more complete setup (several well placed sensors) will have a *Perception* of 5, and an extensive setup will have 7.

A typical *Awareness* score for an off the shelf sensor system would be 4. A good quality system will have an *Awareness* of 8, and top end systems 12.

For most sensors, it is difficulty 10 to detect what they are looking for, or the *Agility x Stealth* of someone who is correctly trying to avoid detection.

Motion Sensors

The type of sensors often used in burglar alarms from TL7 onwards. They are relatively easy to fool, simply by moving slowly. Can be countered with basic Stealth.

Each sensor has a +1 to detection difficulty for each metre of range at TL7, +1 per 2m at TL8 and +1 per 5m at TL9+.

Sound Sensors

These simply listen out for noise, and are generally set to trip at the sound of someone walking around. Anyone using *Stealth* to keep quiet will counter these sensors, even if they don't know that they are there.

Each sensor has a +1 to detection difficulty for each metre of range at TL7, +1 per 2m at TL8 and +1 per 5m at TL9+.

Life Sensors

Available from TL8, these use microwave sensors to detect motions such as heartbeats and breathing, and are capable of detecting people trapped under rock - they are very sensitive.

The only way to avoid detection is to wear clothing which blocks microwaves. Typical protection adds +10 to the difficulty, good quality adds +25 and excellent quality +50.

Heat Sensors

Similar to *Life Sensors*, but look for the heat signature of a living person. Can be countered by special clothing in a similar way, though the bonus is doubled since they're easier to hide from.

Tremor Sensors

Designed to detect vibrations in the ground, as caused by someone walking around. As for sound sensors, they can be countered by stealth, though only if the intruder knows they are there (more is involved than simply being quiet).

Available at TL7+. At TL8+ footwear to try and reduce vibrations are available, providing +5, +10 and +15 bonuses

to stealth for standard, good and excellent quality equipment. Only applies when actively trying to counter such sensors.

Chemical Sensors

Designed to check for particular chemicals, it works by *sniffing* for the smell of those chemicals. They can be highly sensitive, but quite restricted in what they can detect. At TL9 and above, they can perform DNA sequencing of people present in a room.

Long Range Sensors

Sensor systems such as radar are designed to work across tens or hundreds of kilometres. It is assumed that the size of the sensor system is of great importance at this scale. As for ranged weapons, these types of sensors have a *distance increment*, which is based on the size of the sensor system. For most systems, it is proportional to the square root of the sensor volume/mass.

As for smaller sensor systems, the *skill* of the system represents software capability, and the *attribute* represents the quality of the hardware. A typical civilian system will have a *Perception* of 3, military or scientific systems will be closer to 5.

Visibility

The environment greatly effects the range of a sensor system. The modifiers below assume radar.

Modifier	Environment
x 1/100	Very noisy. Mountainous terrain.
x 1/10	Noisy. Hilly, forested or urban terrain.
x 1	Standard.
x 10	Clean. Near orbit.
x 100	Empty. Deep space.

For thermal sensors, square the range modifiers for *Clean* and *Empty*. Detecting hot objects in deep space is quite easy.