Enhanced Senses[™]

Fourth Edition

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Version 1.1 – March 2015

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Errata. Everyone makes mistakes, including us – but we do our best to fix our errors. Up-to-date errata pages for all *GURPS* releases, including this book, are available on our website – see above.

Rules and statistics in this book are specifically for the *GURPS Basic Set*, *Fourth Edition*. Page references that begin with B refer to that book, not this one.

INTRODUCTION

Ruuarth slipped through the fading twilight, her pupils spread wide to watch the trail, so that no noise would betray her. Her stealthy movements were half-instinct, and she gave them little thought. All her mind was directed forward, seeking the roundeye scout she was tracking. She had the scout's tang in her nostrils; now she had to track him down before he could bring other men to the campsite where her sisters were looking after her children.

Up ahead, there was a sound of breathing, loud in Ruuarrh's ears. She couldn't see through the bushes it came from, but that wouldn't matter.

She had carried her horn-and-sinew bow already strung. Now she took out an arrow and nocked it. All her attention went to listening, as the Old One had taught her. Her ears turned, bringing her target's breathing closer and closer, until she heard nothing else. Her own breathing became one with it, as she took aim at the sound – and loosed the arrow.

Heightened perception is a common special ability in fantastic fiction. It's the defining trait of some characters, such as Heimdal, the watchmen of the Norse gods; the Marvel Comics superhero Daredevil; or Rachel Pirzad on the television series *Alphas.* Many others have keen senses as one among multiple special abilities, such as the animal-like perceptiveness of Tarzan of the Apes, or Superman's vision and hearing powers. Being able to see, hear, or otherwise sense what others can't is a subtle advantage, but it can be a potent one.

The opening chapter reviews the *GURPS* rules for powers, suggests ways of applying them to the senses, and examines and expands the existing rules for sensory advantages. The other chapters describe specific abilities: new or enhanced channels for sensory input in the second, and improved ways of processing that input in the third. Scattered through the supplement are expanded or modified rules for Sense rolls and other game mechanics.

GURPS Powers: Enhanced Senses can be used in a wide range of campaigns: hard science fiction rooted in biology and engineering, fantastic adventures where a martial artist or a sage can have mysterious gifts, supers campaigns where drama overrules the laws of nature, and more. The abilities presented in this supplement are categorized into powers that fit these varied genres, sometimes as variants for different powers. The GM should treat it as a toolkit, choosing abilities to suit his campaign.

Enhanced Senses also serves as a source of information on realistic nonhuman sensory capabilities. The abilities included in the Enhanced Senses power (p. 4) are based on actual biology. A GM wanting to write up a real-world animal, or a fictional alien race as discussed in **GURPS Space**, can find added detail in this supplement.

Publication History

This is the first edition of *GURPS Powers: Enhanced Senses.* It draws inspiration from *GURPS Powers*, whose treatment of sensory powers it expands upon; *GURPS Bio-Tech* and *GURPS Space* for the biological basis of sensory abilities; and *GURPS High-Tech* and *GURPS Ultra-Tech* for technological sensors. However, nearly all of the content is original.

Required Books

This supplement requires the *GURPS Basic Set* and *GURPS Powers*, as the abilities within make extensive use of the advantages and modifiers in those works.

And what magnificent instruments of observation we possess in our senses! This nose, for example, of which no philosopher has yet spoken with reverence and gratitude, is actually the most delicate instrument so far at our disposal: it is able to detect minimal differences of motion which even a spectroscope cannot detect. Today we possess science precisely to the extent to which we have decided to accept the testimony of the senses.

> - Friedrich Nietzsche, **Twilight of the Idols**

About the Author

William H. Stoddard is a professional copy editor, specializing in scientific and scholarly publications in fields ranging from aerospace technology to literary history. Fortunately, he likes reading nonfiction; his research library is threatening to take over his apartment, and he regularly visits the nearest university library, which supplied many useful sources for this supplement! His other pleasures include cooking, reading science fiction and alternate history, and running and playing in roleplaying games, which he has been doing since 1975 when he first encountered **Dungeons & Dragons**. His previous work for Steve Jackson Games includes **GURPS Supers**, **GURPS Low-Tech**, and the award-winning **GURPS Social Engineering**. He lives in San Diego with his cohabitant Carol, two cats, two computers, and far too many books!

DEFINING THE SENSES

Both natural human senses and senses available as advantages can be described by their range of operation; what they detect; and whether they're active or passive.

SENSORY RANGE

Senses are divided into *ranged* and *contact* senses. Contact senses, such as taste and touch, respond only to things that come in contact with the body. If this isn't inherent in the definition of the sense, it can be represented as *Melee Attack*, *Reach C* (-30%); see p. B112. Inability to parry is included, but can't claim the extra -5%, being inherent in sensory abilities.

Range

Noncontact senses have varied ranges.

Near-field senses work at a yard or less (see below).

Short-range senses take -1/yard. This applies to smell, which depends on chemical diffusion. Other senses can be given Short-Range if sensitivity drops rapidly with distance.

Intermediate-range senses take the standard range modifiers defined in the *Size and Speed/Range Table* (p. B550). This applies to vision and to Detect and Vibration Sense. A 1,000× increase in range means -18. *Unless otherwise specified*, ranged senses use the standard range modifiers.

Scanning senses have a base range; each doubling of distance beyond this range imposes -2. Detect with Signal Detection (p. B48) can pick up the emissions of a Scanning Sense at twice its base range; each doubling of distance imposes -1 (Under the Hood: Range Penalties for Telecommunication

Near-Field Senses

Some senses have little range but don't require physical contact, yet Reduced Range (p. B115) is unsuitable if the smallest range is still too large. If range is just a yard, use Melee Attack, Reach C, 1 (-20%) with a special interpretation: No touch is required, the sense always gets an unmodified Per roll, and the user can claim +4 by forgoing active defenses ("All-Out" use). Devices with such senses always roll at effective Per+4.

Under the Hood: Range Penalties for Telecommunication and Signal Detection

Why is the range penalty for a radio receiver -1 per doubling of range, when the range penalty for a radar set is -2? A radar set is *both* a transmitter and a receiver. To detect a target at doubled range, it has to transmit a radar beam to doubled range, for -1; then it has to receive a reflected beam from doubled range, for -1. A purely receptive system at doubled range is subject to only one penalty, because it performs only one function. The same applies to hearing versus sonar.

and Signal Detection, below). The same applies to Telecommunication (Receive Only) and to Detect (Signal Detection) that responds to telecommunication. Hearing takes -1 per doubling (*Hearing Distance Table*, p. B358; see also *Loudness Levels*, p. 21, and *Hearing in Tunnels*, p. 22), though its base range depends on the loudness of the sound source – and it gets *bonuses* at shorter distances! A 1,000× increase in range means -20 for Scanning Sense and -10 for other senses in this group. Senses with a stated base range use these modifiers.

Long-range senses take *Long-Distance Modifiers* (p. B241). This applies only to a few supersenses. Past the initial range steps, a 1,000× increase in range means -6.

Arc

Ranged senses also have an *arc*, or angular width (see *New Modifiers*, p. 9, for more options).

Tunnel Vision operates in a 60° wedge to the front.

No Peripheral Vision operates in a 120° wedge to the front. This is the usual arc for Scanning Sense.

Normal Vision operates in a 120° wedge to the front and allows *peripheral vision* 30° to each side, for a total of 180°. (See *Fields of View and Extra Eyes*, p. 16.)

Peripheral Vision operates in a 180° arc in front and allows peripheral vision 30° to each side, for a total of 240°. Scanning Sense with Extended Arc can be fully effective in a 240° arc.

360° Vision operates all around the user. Scanning Sense with Extended Arc can do likewise, and hearing, Detect, and Vibration Sense normally work this way.

THE SENSORY HIERARCHY

Different senses yield different sorts of information about the environment. This provides a basis for classifying them. Some senses function as if they belonged to a higher class if the Sense roll is a critical success.

Vague senses respond to the presence of a substance or process. *Example:* Detect (Vague).

Nondirectional senses (New Modifiers, p. 9) also reveal the amount of a substance or the intensity of a signal. *Examples:* Detect (Nondirectional), smell, taste.

Basic senses, if ranged (see above), also reveal the direction to the nearest significant quantity of a substance or the source of a signal. If not ranged, they allow discrimination of points of contact. *Examples:* Detect; hearing; touch with the torso or limbs.

Discriminatory senses have the capabilities of basic sense and can distinguish individual objects or places, enabling their use to navigate the environment or track prey. Nonvisual discriminatory senses become substitutes for vision and are at +4 to Sense rolls; vision doesn't get this bonus, because these capabilities are the *baseline* for human vision. *Examples other than vision:* Discriminatory Hearing, Smell, or Taste; Sensitive Touch. *Analyzing senses* are comparable, but if a Sense roll to detect an object succeeds, identification is automatic, as for vision; such senses are forms of Detect (Analyzing).

Eagle Eyes

Included in: Enhanced Senses.

Your eyes have superior focusing power, like a bird of prey's. You can ignore -4 in range penalties to Vision rolls in general, and up to -8 if you have

zoomed in on a specific target with an Aim maneuver. If you use this with a ranged weapon, you gain an extra +4 Accuracy with an aimed attack, as if using a scope (p. B412) – but this isn't cumulative with actually using a scope.

Statistics: Telescopic Vision 4 (Biological (Passive), -5%) [19].



19 points

Farsight

9 points

Included in: Supersenses.

Your visual abilities go beyond mere telescopic vision! Rather than standard range modifiers, you use long-distance modifiers for Vision

rolls (p. B241). This is not a realistic ability, but fits the "tele-scopic vision" of some supers.

If you use this ability with Forward Observer, apply the long-distance modifier in place of the standard -3 per 500 yards.

ILLUMINATION LEVELS

The human eye operates across an extremely wide range of light levels. Each -1 to Vision from low light corresponds to about 1/4 to 1/5 as much illumination. The table below defines these illumination levels in terms of natural and artificial examples and *rough* equivalents in units of lux. It assumes steady illumination; flickering lights or moving shadows can add another -1 to -3. Water strongly diminishes the intensity of visible light; reduce illumination by one level per 50 yards of depth.

A light source in a dark environment eliminates or reduces Vision penalties within the illuminated area but *prevents* seeing outside it. Treat the light as "in plain sight" to distant observers who have a clear view of it: +10 to Vision rolls to notice the lighted area (p. B358). However, they're at -7 to see anything else.

The human eye can function at higher light levels; below 100 lux is where low light begins to cause difficulty in ordinary activity. Brighter light doesn't grant Vision bonuses but is needed for tasks that require seeing fine details; e.g., 500 lux for comfortable reading. Standard equipment for such tasks includes good light; without it, apply -2 for improvised equipment, cumulative with any darkness penalty.

Human eyes take time to adapt to sudden darkness (about two minutes per -1); apply another -2 until adapted. Sudden illumination five or more levels above what the eye has adapted to requires a HT roll, at +5 for Protected Vision (see *Glare Adaptation*, p. 14). Light brighter than 200,000 lux cannot be adapted to and *always* triggers a roll, even in daylight. Success by 3+ avoids issue; success by 0-2 requires re-adapting to the darkness; failure dazzles (extra -4 to Vision) for minutes equal to the margin of failure, after which adapting to the darkness is necessary; and critical failure blinds for seconds equal to margin of failure and *then* works like normal failure. Light-based weapons like stun grenades and laser dazzlers have harsher effects; use the weapon statistics instead.

Prolonged exposure to intense light can cause lasting or permanent vision loss; use the rules for crippling injury (pp. B422-423). Intense light from a distant source damages the fovea (see *Visual Impairment*, p. 12). Being surrounded by overly bright light can destroy the entire retina, causing Blindness. Protected Vision reduces or eliminates these effects.

Important: The total of *all* penalties mentioned here – for darkness, shadows, inadequate equipment, dazzling, incomplete adaptation, etc. – has a floor of -10. If the total is worse, treat it as -10.

Penalty	Approximate Lux	Natural Light	Artificial Light
-10	0	Total darkness	Total darkness
-9	0.0001	Overcast moonless night	-
-8	0.0005	Starlight through clouds	-
-7	0.002	Starlight	-
-6	0.01	Quarter moon*	-
-5	0.05	Half moon*	Indicator LED ⁺
-4	0.2	Full moon*	-
-3	1	Deep twilight*	Candlelight [†]
-2	5	Twilight*	Street lights (side road); gaslight [†] ; cell-phone screen [†]
-1	20	Sunrise or sunset	Street lights (main road); torch†; standard flashlight†
0	100	Very overcast day	Living room; 120W bulb†; high-quality flashlight†

* Assumes a clear sky; apply another -1 for heavy clouds. Above the Arctic Circle or below the Antarctic, moonlight is weaker; add another -1.

[†] The light source is a single, nearby point. The listed modifier assumes one yard of distance from this. At two yards, apply another -1. At greater distances, add *half* the range penalty (p. B550), rounded for the worse, to this -1; e.g., a candle gives -3 at one yard, -4 out to two yards, -5 out to five yards, -6 out to 10 yards, and so on. Stop once the penalty reaches the area's ambient illumination level – a light source will never make things darker!

Either person can apply his skills through the other's senses. Encountering sensory capabilities you don't share (for example, a blind person linking to a sighted one) imposes -2 for unfamiliarity for the first eight hours.

Sensory Link can function as Peripheral Vision or 360° Vision if the participants are looking in different directions, but then they don't gain the direct benefits of collaboration.

Statistics: Cable Jack (p. 8) (Electronic, -30%; Sensie, +80%) [8].

Synesthesia

In the real world, synesthesia is a neural process where stimulation of one sense produces involuntary sensations in another modality – numbers may appear colored, or sounds produce tactile sensations. This may function as a perk if the GM agrees (see below). In a cinematic treatment, it might have more dramatic effects, with multiple sensory modalities processing input from one sense. This can be represented as a group of alternative abilities that make up a meta-trait.

Sensory Refocus

18 points

Included in: Hypercognition, Supersenses.

You can devote the processing power of your brain to a single sense, as if you were a single huge eye or skin surface. This is voluntary – you have the option of not boosting any of your senses! Whichever senses you aren't focusing on recede into the background; you see poorly resolved images, barely notice odors or tastes, or feel only unlocalized pressure, for example. The sense you *are* focusing on is enhanced beyond normal human limits.

• Your vision can ignore -3 in range penalties when scanning the environment, or zoom in on a target to ignore -6 in range penalties – you can read a computer screen *casually* from 15-20' away, for example. You can disregard -6 in darkness penalties *at the same time*. If you are using a ranged weapon without a telescopic sight, your eyes act as a sight, giving +3 Acc if you take an Aim maneuver for three seconds.

• Your hearing is at +4. You gain +4 to soundbased tasks and to Shadowing if your target is making sounds. You can instantly recognize people by voice, or machines by sound signature.

• Your smell is at +4, and you gain +4 to smell-based tasks and to Tracking to follow anyone who leaves a scent trail (Sanitized Metabolism will stop this). You can instantly recognize people, places, or things by scent.

• Your taste is at +4. If you ingest a small sample of a substance (including bodily fluids, for a person), you can recognize whether you have encountered it before, and judge whether it's safe to consume.

• Your tactile senses are at +4 to discriminate between objects or materials by texture, or to find minute irregularities. You can feel faint seismic vibrations as someone walks toward you, or trace heat in an object that someone has touched.

Statistics: Telescopic Vision 3 (Savant *or* Super, -10%; Temporary Disadvantage, Hard of Hearing, -10%; Temporary Disadvantage, No Sense of Smell/Taste, -5%; Temporary Disadvantage, Numb, -20%) [9] + Night Vision 6 (Savant *or* Super, -10%; Temporary Disadvantage, Hard of Hearing, -10%; Temporary Disadvantage, No Sense of Smell/ Taste, -5%; Temporary Disadvantage, Numb, -20%) [4]

+ Discriminatory Hearing (Savant *or* Super, -10%; Temporary Disadvantage, Bad Sight, Nearsighted, -25%; Temporary Disadvantage, No Sense of Smell/Taste, -5%; Temporary Disadvantage, Numb, -20%) [2]*

+ Discriminatory Smell (Savant *or* Super, -10%; Temporary Disadvantage, Bad Sight, Nearsighted, -25%; Temporary Disadvantage, Hard of Hearing, -10%; Temporary Disadvantage, No Sense of Taste, -2%; Temporary Disadvantage, Numb, -20%) [1]*

+ Discriminatory Taste (Savant *or* Super, -10%; Temporary Disadvantage, Bad Sight, Nearsighted, -25%; Temporary Disadvantage, Hard of Hearing, -10%; Temporary Disadvantage, No Sense of Smell, -2%; Temporary Disadvantage, Numb, -20%) [1]*

+ Sensitive Touch (Savant *or* Super, -10%; Temporary Disadvantage, Bad Sight, Nearsighted, -25%; Temporary Disadvantage, Hard of Hearing, -10%; Temporary Disadvantage, No Sense of Smell/Taste, -5%) [1]*.

* Alternative Abilities (×1/5 cost) to combination Telescopic Vision + Night Vision.

SENSORY-APPLICATION PERKS

Three perk-level sensory applications are available.

Page at a Glance

You have the superhuman reading speed of Stop Motion (p. 30), but none of its other benefits.

Perfect Pitch

You can identify or recreate a musical note or tone without a reference tone. You have +2 to all rolls to tune musical instruments or to confirm that they're in tune (or out of tune), and to Hobby Skill (Whistling) (*GURPS Low-Tech Companion 1*).

Synesthesia

You have cross-modal associations between two senses or cognitive functions, resulting in enhanced creativity. You are at +1 to a specific artistic skill or a narrow set of closely related skills, such as Poetry and Writing, when you are using them creatively.

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To know ultraviolet, Infrared and X-rays, Beauty to find In so many ways – The Moody Blues, "The Word" She'd walked past a stall selling roasted meats and her mouth had started to drool! The sense of smell wanted the body to eat without consulting the brain! – Terry Pratchett, **Thief of Time**

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