

Town Management Calculations and Procedures

Updating Town Stats: Resources and activities operate on a monthly cycle. Because gametime follows real-world time, all activities and resources will be updated on the 1st of every month. The majority of jobs can be completed in a single month; however, longer or variable-length tasks (such as Farming or Tech Research) may require multiple months to finish.

Town Health: This value reflects the health of the town's population and is affected by the availability of food and medicine, the stress of the populace, and environmental effects. The value of Town Health is represented with a combination of five hearts and skulls. Table 1 breaks down the meanings of each combination of hearts and skulls.

Town Health	Description	Productivity	Δ Working Population
♥♥♥♥♥	Perfectly healthy	100%	+ [(1d10) – (1d4)] %
♥♥♥♥♠	Healthy	90%	+ [(1d8) – (1d6)] %
♥♥♥♠♠	Average	80%	+ [(1d8) – (1d8)] %
♥♥♠♠♠	In trouble	65%	+ [(1d6) – (1d8)] %
♥♠♠♠♠	On your last legs	50%	+ [(1d4) – (1d10)] %
♠♠♠♠♠	Actively dying	50%	- (3d6) %

Table 1: Town Health Scores

Altering Town Health: Town Health can be altered by many events. The following represent some of the most common ways that Town Health can be increased or decreased:

- *Running out of food* – At the start of every month, if the town's "Food Through" value is before the current date, the town's health immediately drops by one category.
- *Running out of medicine* – At the start of every month, if the town's "Medicine Through" value is before the current date, the town's health immediately drops by one category.
- *Running out of Fuel* – At the start of every month, if the town's "Fuel Through" value is before the current date, the town's health immediately drops by one category.
- *Random Fluctuations* – At the start of every month, the GM rolls a Percentile check. If the rolled value is less than or equal to the percentage of the working population currently unassigned, the town's health increases by one category. Certain research rewards can alter the probability of this occurring.

Working Population: This value defines the number of people of working age currently living in Slaðkirk. This is the maximum number of people who can be assigned to jobs. This value is updated at the end of every cycle, changing by a percentage of the current population based on the town's health (see table 1).

Food: This measures the availability of food for the town. This is displayed as "Food through", listing the date when current food supplies will be depleted at the current rate of consumption. This is calculated by dividing the number of daily rations by the current population to get a number of days remaining.

Food is primarily gathered through the activities Farming and Hunting. Farming generally yields more food and is more consistent in its yields but only produces food every 4 cycles. Hunting yields food at the end of every cycle but has less consistent yields and generally yields less food compared to Farming.

The number of daily rations yielded by Farming is equal to:

$Y = (2d3) \times 100 \times A \times R \times H$, where Y = daily ration yield, A = assigned Farmers, R = multiplier from researched tech, and H = Town Health productivity

The number of daily rations yielded by Hunting is equal to:

$Y = (1d6) \times 10 \times A \times R \times H$, where Y = daily ration yield, A = assigned Hunters, R = multiplier from researched tech, and H = Town Health productivity

Fuel: The town of Slaðkirk is protected from the apocalyptic cold by a Magic Generator in the center of the town. This generator requires a steady supply of magic items, which it “burns” to maintain the protective field around the city. The value of “Fuel through” displays how long the Magic Generator will continue to function with the fuel already fed into it. Table 2 gives general rules for how long magic items can power the generator, though this value can be modified by certain research techs and some specific items may fall outside the expected Fuel yield.

Type of Item	Generator Power (Days)
Spell Scrolls / Cassettes	n^2 days, where n = spell level
Potions	(2d4) days
Magic Rings, Amulets, Jewelry, etc.	(5d6) days
Charged Items (Wands, Staffs, Rods, etc.)	(charges remaining x spell level) days
Magic Weapons, Armor, Shields, etc.	(8d6) days

Table 2: Expected Fuel Yields

Medicine: This value displays how long the town can treat its population’s injuries and illnesses with its current stock of medicine. Like Food and Fuel, this is displayed as a “Medicine through” value showing the date when the current medicine supply will run out. Note that Medicine refers to mundane medical supplies used on a daily basis, not Potions of Healing and other sources of magical healing.

Medicine can be crafted with the Crafting Medicine job and consumes a number of Herbs equal to the quantity of Medicine produced (measured in days’ supply). The quantity of Medicine produced at the end of a cycle is equal to either the following formula or the quantity of Herbs available, whichever is less:

$Y = ((2d6) \times 1000 \times C \times R \times H) / P$, where Y = Medicine Yield in days, C = Chemists assigned, R = multiplier from researched tech, H = Town Health productivity, and P = population.

Mining: At the end of every cycle, miners produce Stone and Ore. Stone is needed for constructing buildings and roads, and ore is used for building machines and carrying out research. The amount of Stone and Ore produced and stored is listed in Tons and is a function of the number of assigned Miners. The amount of Stone produced at the end of a cycle is equal to:

$Y = (2d4) \times 0.1 \times M \times R \times H$, where Y = Stone Yield in tons, M = assigned Miners, R = multiplier from researched tech, and H = Town Health productivity.

The amount of Ore produced at the end of a cycle is equal to:

$Y = (1d3) \times 0.1 \times M \times R \times H$, where the variables are the same as for Stone except Y = Ore Yield in tons.

Scrap Parts: Machines and devices can be categorized into 3 stages of repair: Working Condition, Damaged, and Sundered. An item in Working Condition is currently operable, though it may require a power source. A Damaged item is not currently functional, but may be repaired with Scrap Parts if the Circuits tech has been researched. A Sundered device is damaged beyond repair and is only useful to convert into Scrap Parts, which can be done if the Salvage tech has been researched. The number of Scrap Parts recovered from a scrapped item depends on the size of the item, as is the number of Scrap Parts required to repair a Damaged device.

Herbs: Once the Herblore tech has been researched, Herbs can be gathered with the Gathering Herbs job assignment. These Herbs can be used to manufacture Medicine with the Crafting Medicine job assignment. The number of Herbs gathered at the end of a cycle is determined by the following formula:

$Y = (2d6) \times 2 \times G \times R \times H$, where Y = Herbs Yielded, G = assigned Herbalists, R = multiplier from researched tech, and H = Town Health productivity

Order of Operations: At the end of every monthly cycle, the following procedures are completed in this order:

1. Determine Food yielded during the cycle.
2. Determine Stone and Ore yielded during the cycle.
3. Determine Herbs yielded during the cycle.
4. Determine Medicine yielded during the cycle.
5. Determine changes to Town Health by checking:
 - a. Food supply
 - b. Fuel supply
 - c. Medicine supply
 - d. Random fluctuation
 - e. Active environmental effects
6. Update working population per table 1
7. Re-calculate "Food through" value for updated population
8. If desired, re-assign workers