

## 153: Trees

Two days after sparring with Ameliah, Rain was still sore. His armor was uncomfortably tight too, already overdue for another resizing. Mercifully, though, his hunger had been less constant of late. The changes weren't done, but it looked like they were at least winding down. That was good. While Tallheart could resize his armor endlessly, there was nothing any of them could do for his Forceweave. The stretchy fabric had its limits, and Rain was already feeling a bit like an overstuffed sausage.

It was the 27th of Fallow, not even a week since they'd entered the depths. It was amazing to think that so much had happened in so little time, but despite that, Rain was already anxious to move on. Tallheart wasn't ready, however. Even now, Rain could hear the rhythmic clanging of the cervidian's hammer as he worked on Ameliah's new bow.

One of her old ones—technically half of one—was currently serving Rain as an oversized stylus. After Tallheart had shooed him away from his anvil, Rain had spotted the broken weapon lying where Ameliah had dropped it. To keep himself busy, he'd picked it up and started tracing simple runes in the dirt. The runes were mostly an idle curiosity, born out of a desire to better understand what exactly it was that Tallheart was doing. Soon enough, however, he'd given up and transitioned to just idly doodling in an attempt to relax. That, also, hadn't lasted long. Now, Rain was still scratching at the dirt with the broken bow, but his thoughts were on something else entirely.

Yesterday, too soulstrained for more physical training, Rain had devoted the morning to working on his soul and the afternoon to running some experiments of more immediate practicality. Ameliah had asked for his help in planning her build, and he was determined to do a good job. That had involved getting a baseline.

Calculating the damage of a mundane bow shot was more straightforward than it seemed at first glance. The key thing to realize was that the arrow didn't matter that much—not when it came to how the system calculated damage, anyway. Provided that the projectile survived being fired, the most important factor was the bow. Higher draw weight and longer draw distance directly translated to increased damage.

When an archer pulled on a bowstring, they were essentially storing energy. When they let go, that energy would then be transferred to the arrow. A bow, at least as far as the mathematics was concerned, was just a spring. The transfer of elastic potential energy to kinetic energy was one-to-one—assuming you ignored the mass of the bow, its motion, friction, and other such bullshit. When fired, the arrow's velocity would sort itself out based on the energy stored in the bow relative to the starting mass of the projectile. Once it was flying, more bullshit non-idealities popped up, particularly air resistance; however, as long as the arrow wasn't stupidly light or the target ridiculously far away, such things could be mostly ignored.

Rain wasn't after a perfect mathematical description. He was just looking for a way to exploit the physics involved. Working with a spherical archer in a vacuum was good enough for that.

Unfortunately, his hopes had been dashed, just as they'd been dashed weeks ago when he'd tried stone-throwing with Velocity. There would be no taking advantage of the squared term in the kinetic energy equation. There was only one skill they'd found that directly increased arrow speed, and it explicitly stated that it didn't affect damage. Whoever or whatever had designed the system, the label 'killjoy' definitely applied.

Undeterred, Rain had continued his experiments. Not having a way to measure the speed of an arrow, he had instead turned his attention to calculating how much work the archer was putting in.

The force required to draw a bow wasn't constant. Before you started pulling the string, it was zero, obviously. The further you pulled it back, the harder it became. 'Draw weight' was simply what people called the required force at full draw. Rain had discovered that he hadn't actually known much about bows from his old life. Granted, that wasn't too surprising, but there was also a notable gap in his YouTube history on the subject. Fortunately, through his discussions with Ameliah and some practice, he'd found that it wasn't that complicated.

The force needed to draw a bow was a linear function of distance,  $F=k*d$ . 'F' for force, 'd' for distance, and 'k' for 'springiness'. He was sure there was a real word for what k represented, but he wasn't going to beat himself up for not knowing it. It was just how bendy the bow was. If you drew a plot with force on one axis and distance on the other, 'k' was the slope.

Making that plot had proven to be a bit of a trial.

Rain had needed an accurate weight reference to make his measurements, and for that, he'd gone to Tallheart, asking him for a 5cm iron cube. With Le Nouveau Faux Grand K, a beam balance, a tree, a bucket, some rocks, a very patient Ameliah, and more time than he should probably have spent on this project, Rain had finally gotten himself a graph. From there, it was just simple calculus to get the area under the curve.

Technically, you didn't even need calculus. You could do it with geometry. The line made a right triangle with the axes, the area of which worked out to  $E=1/2*k*d^2$ .

On average, the steel training bows Tallheart had made boasted draw weights in the 80-kilogram range—kilograms-force if you wanted to be pedantic—or about 800 newtons. Crazy, but not too crazy. Rain didn't feel bad about rounding, given how little he trusted his initial measurement. Ameliah's draw distance was 63 cm, so by the formula, the energy stored was  $1/2 * k * d^2 = 1/2 * (800\text{N}/63\text{cm}) * (63\text{cm})^2 = 252\text{J}$ .

J was for joules.

Rain's confidence in the accuracy of that number was abysmal, given all his sources of error, but it was something he could worry about when they were back on the surface. Ascension already had councils, so adding one for weights and measures wouldn't require any significant changes to the codes.

To find the relationship between energy and damage, he had enlisted Ameliah again, who had been more than willing to shoot him at this point.

After compensating for her Sharpshooting passives and his own Force resistance, a full-draw shot had done 504 damage. *Exactly* twice the number in joules.

The evenness of the conversion factor was a little scary.

To make sure, he'd then had Ameliah shoot him with the bow only half drawn. The equation predicted that the base damage would be 126, and the result was 123. Rain had been even more surprised than Ameliah at how close his prediction had been.

Apparently, she had never doubted him, despite all the teasing she'd been doing about how he chose to spend his free time.

In any event, though the ratio between joules and damage was suspect, Rain could now use his formula to predict the damage of an arrow for various scenarios with some level of confidence.

Scenario one was an unawakened archer. Assuming a regular, wooden bow with a more reasonable, though still respectable, draw weight of 30kg, the formula predicted just under 200 damage from full draw. That sounded moderately fatal, given an average person only had 200 health, but it was more complicated than that. Someone hit with a 200-damage arrow in the forehead would be dead, no question. Someone hit in the toe would survive easily—minus said toe and barring any unfortunate infections. They wouldn't even lose the full 200 health from the experience. The buffering effect of health was another complicated topic.

Staying on track, the second scenario was the case of Stint. At level five and invested in the Sharpshooting tree, he'd have access to Strong Draw. Assuming it was rank ten, the skill would double the effective draw weight of any bow he cared to use. 200 damage became 400. Also, being awakened, Stint had likely invested points into Strength. That would let him use a better bow like the steel ones, bringing the damage up to four digits.

It was an impressive number for someone at level five, and it was fairly indicative of why you tended to see more warriors than mages in that level range. Already, however, problems were starting to appear. Not everybody had access to a legendary blacksmith who could make a bow out of metal while keeping it supple enough to function. Bowstrings became an issue, as did the arrows, which also needed to be stronger to survive the rapid acceleration.

Skills made it worse.

The term for the effect was 'item strain' or, more commonly, just 'strain'. The accepted rule of thumb in the adventuring community was that a weapon skill would deal 10% of its damage back to the weapon. It wasn't that simple in practice. Not all skills did damage, but using them would still cause strain. The extension to the rule of thumb was, therefore, to guess based on the damage of a similar skill in the same tier.

At low skill ranks, most materials had sufficient hardness for item strain to be only a minor issue. By silver, however, standard equipment could no longer stand up to the forces involved. Warrior, mage, defender; it didn't matter. Use too much power, and you'd find yourself unarmed, perhaps literally. Rain could speak from experience there; though fortunately, the Focus stat ring that had failed on him hadn't detonated with *quite* that much force.

Getting back to the scenario, the Drilling Shot skill at rank ten would let Stint double his damage again, bringing it up to 2,000, or thereabouts. A steel bow would survive that, possibly even unscathed, but a wooden one would have trouble. There were skills like Sturdy Bow that helped, but they had their limits, as evidenced by scenario three.

Rain looked up from his doodling, a blue window popping into existence before his eyes.

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## Sharpshooting

An offensive tree focusing on physical skills with bows and crossbows.

When it comes to defining what a 'bow' is, it needs to bend and have a string. Bows are fine, obviously, but so are crossbows, whether lever or crank.

Extremely unconfirmed rumor: even something like a ballista can be okay if you can manage to pick it up before you fire it. Anden the Strong did it in *Legends of the Green Wood*. Probably bullshit. #todo: build siege weaponry, test.

There is no distinction between an "arrow" and a "bolt." Common uses the same word for both.

Most physical skills require a valid target to gain experience. "Valid" is somewhat subjective. For bows, the condition seems to be that the target is either alive or a challenge to hit, such as a distant archery target or a falling coin. Or me :/

### Tier 0

- **Drilling Shot**
  - Shoot an arrow that spins, dealing increased damage
  - Multiplies base physical damage by  $[1 + (\text{RNK}/10) * (1 + \text{STR}/200)]$
  - Cost: 10 stamina
- **Seeker Shot**
  - Shoot an arrow that tracks its target
  - Turn speed  $[(\text{RNK} * 90) * (1 + \text{FCS}/200)]$  deg/s
  - Tracking effect expires after  $[10 * \text{RNK}]$  meters
  - Note: Target does not need to be an entity
  - Cost: 10 stamina

### Tier 1

- **Hardened Arrowheads**

- Hardness of arrows multiplied by  $[1 + \text{RNK}/10]$
- Note: Despite the name, it is the whole arrow, not just the arrowhead
- Requires 5 ranks in Sharpshooting
- **Sturdy Bow**
  - Durability of bows multiplied by  $[1 + \text{RNK}/10]$
  - Requires 5 ranks in Sharpshooting
- **Strong Draw**
  - Bow draw weight multiplied by  $[1 + \text{RNK}/10]$
  - Toggleable
  - Requires 5 ranks in Sharpshooting
- **Piercing Shot**
  - Shoot an arrow that ignores  $[\text{RNK} * 5\%]$  of target's hardness
  - If physical damage is dealt, arrow pierces through the target
  - After piercing, physical damage to any secondary target is reduced by the hardness of the primary target
  - After piercing, magical damage to any secondary target is reduced by the appropriate resistance of the primary target
  - Effect can recurse indefinitely
  - Cost: 25 stamina
  - Requires Drilling Shot 5

## Tier 2

- **Sharpened Arrowheads**
  - Multiply physical damage of arrows by  $[1 + \text{RNK}/10]$
  - Requires Hardened Arrowheads 5
- **Endless Quiver**
  - Conjure a copy of any arrow in your possession
  - Copy persists for  $[\text{RNK}]$  minutes
  - Cost:  $[100/\text{RNK}]$  stamina +  $[\text{SM}]$  mana
  - Note: SM = mana stored in the arrow
  - Note: Copies function like lair-matter, not mana constructs
  - Requires Hardened Arrowheads 10
- **Pinning Shot**
  - Fire a shot that roots an enemy



- Effect only activates if physical damage is dealt
- Cost: 50 stamina
- Root the enemy for [RNK\*6] seconds
- Requires Seeker Shot 10
- **Sniper Shot (Hidden)**
  - Fire a powerful charged shot with extreme range
  - Multiply physical damage by  $[1 + (\text{RNK}/3.33) * (1 + \text{STR}/100)]$
  - Arrow is not affected by gravity or wind within 1km
  - Note: "wind" may or may not mean air resistance in general. More research is needed.
  - Cost: 100 stamina
  - Charge time: 10s
  - Requires Piercing Shot 10
  - Requires Drilling Shot 10

### Tier 3

- **Bleeder Shot**
  - Shoot an arrow that drains the target's blood
  - Effect only activates if physical damage is dealt to health
  - Target bleeds freely for [RNK] minutes until wound is sealed
  - Note: Bleed is a status effect that deals 1% of the original physical damage of an attack every second as additional physical damage, not affected by physical defenses
  - Bloodless entities are not affected by bleeding
  - Cost: 200 stamina
  - Requires Sharpened Arrowheads 5
  - Requires Pinning Shot 5
- **Splinter Shot**
  - Arrow splits into  $[2 * \text{RNK}]$  arrows just before impact with the original target, striking up to  $[2 * \text{RNK}]$  enemies within  $[\text{RNK}/2]$  meters
  - Split arrows deal  $[50\%/\text{RNK}]$  of the original's damage
  - Split arrows have  $[50\%/\text{RNK}]$  of the original's hardness and durability
  - Note: Copied projectiles function like *lair-matter*, not *mana constructs*
  - Cost: None
  - Requires 50 ranks in Sharpshooting
- **Multishot (Hidden)**

- Fire an arrow that splits into  $[RNK*2]$  projectiles
- Each projectile deals 10% of the original damage
- Arrows fly in a fan up to 45 degrees wide, equally spaced
- Note: unlike with Endless Quiver or Splinter Shot, these copies are mana constructs. They no longer have hardness/durability, but are now susceptible to metal absorption/disruption.
- Speculation: mana construct arrows might be compatible with some metamagic, such as Guide Sending. Could compensate for the aim disruption that comes from a metal bow. More research is needed.
- Cost:  $[10*RNK]$  mana
- Requires Mana Manipulation 10
- Requires Endless Quiver 10

#### Tier 4

- **Stacked Shot**
  - Up to  $[1+RNK]$  Shot skills may be combined
  - Cost: additive
  - Requires 60 ranks in Shot skills

This document was one of several, a compilation of Rain's hard numbers with Ameliah's more intuitive grasp of what the listed skills did. Tallheart, too, had supplied a good bit of info, most notably concerning the T4s and hidden skills. He'd seen them in action, after all. As for the formulas, Rain's default skill interface was still stubbornly refusing to give him anything other than the final number. He'd had to piece them together the hard way.

The end result was a bit disorganized, but reasonably accurate, he thought.

Nodding to himself, Rain opened another window.

sharpshooting.ods

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	A	B	C	D	E	F
1	The Ameliah Number	189.8				
2						
3	Skill	Type	Rank	Numeric	Meaning	Cost
4	Drilling Shot	Attack	10	2.9	Physical Dmg Multiplier	10 SP
5	Seeker Shot	Attack	10	1754	Turn Rate (deg/s)	10 SP
6	Hardened Arrowheads	Passive	10	2	Arrow HRD Multiplier	None
7	Sturdy Bow	Passive	10	2	Bow DUR Multiplier	None
8	Strong Draw	Toggle	10	2	Draw Weight Multiplier	None
9	Piercing Shot	Attack	10	50%	Hardness Ignore	25 SP
10	Sharpened Arrowheads	Passive	10	2	Arrow Dmg Multiplier	None
11	Endless Quiver	Utility	10	10	Copy Duration (minutes)	10 SP + x MP
12	Pinning Shot	Attack	10	60	Pin Duration (seconds)	50 SP
13	Sniper Shot	Attack	10	9.7	Physical Dmg Multiplier	100 SP
14	Bleeder Shot	Attack	10	10	Bleed Duration (minutes)	100 SP
15	Splinter Shot	Attack	10	20	# Arrows (5% dmg each)	None
16	Multishot	Attack	10	20	# Arrows (10% dmg each)	100 MP
17	Stacked Shot	Attack	10	11	# Skills	Sum MP

His spreadsheet application was still a bit jank, but it had already proven itself worth all the swearing. This window showed what you got if you crunched the numbers for every Sharpshooting skill using Ameliah's stats with +10 from accolades. Ameliah didn't have all of

these skills unlocked yet, of course, let alone at rank 10. This was just Rain's way of getting a glimpse at one possible future.

As an example, say Ameliah DID have the ranks listed. Rain could then calculate the damage for something like Drilling Shot, using a base damage of 500 from the 80kg-draw training bow. Drilling Shot was a 2.9x multiplier, Strong Draw was 2x, and Sharpened Arrowheads was another 2x. That worked out to 5,800 damage.

The steel bow needed to withstand 10% of that—more than enough to overcome the hardness stat of the unenchanted metal. It probably wouldn't break it completely, though, at least not with a single shot. Sturdy Bow wouldn't stop the weapon from taking damage, but it would allow it to endure more punishment overall. The arrow—also steel—would likely survive as well, even without Hardened Arrowheads. It wouldn't bear any of the item strain, merely the mundane forces of the launch, considerable though those might be.

Returning to damage, 5,800 was about half that of an Overcharged Fireball with Ameliah's previous build. It didn't seem that impressive until you realized that Drilling Shot only took 10 stamina and a single arrow to activate. Further, it could be used as quickly as a person could draw and shoot, more or less. There was no cooldown beyond the default system tick of one second.

Rain's eyes slid down the window, stopping to rest on Sniper Shot.

After the ten-second charge time, the skill would deal  $500 * 9.7 * 2 * 2 = 19,400$  damage. That was less than an Overcharged Fireball with Triplicate Casting, but it came with a redonkulous range and could be done for the measly cost of 100 stamina, one arrow, and, probably, one training bow. Tallheart hadn't enchanted the weapons. He'd said it was for Rain's safety.

And then there was tier 4.

Stacked Shot would let you fire a volley of twenty spinning, target-seeking, piercing, pinning sniper shots that split on impact and inflicted bleeding wounds. Ignoring the fact that the training bow would explode the instant you even THOUGHT about activating that kind of combo, the total damage would be 114,400, split across 400 arrows, each dealing 286 damage. Even that was far from the full story. Each projectile would ignore half of its target's hardness, and, assuming it did damage, it would inflict bleed and pin before piercing. After the pierce, Splinter Shot would trigger again, splitting each surviving arrow into twenty, dealing minor additional damage to anything nearby.

It was essentially a Meteor made out of toothpicks.

Unlike Meteor, however, Stacked Shot was good for other tricks as well.

Say you activated the same combo only without Multishot and Splinter Shot. You'd get a single projectile dealing 57,200 damage plus bleed and pin. When it hit its target, it would almost certainly pierce, and then, thanks to Seeker Shot, it would turn right the hell around and hit the target again. And then again. And then AGAIN. Each time, it would inflict another stack of bleed and refresh the pin duration.

Granted, the arrow would probably break on impact. Even if it survived, the piercing would eventually stop after the target's defenses whittled down the remaining damage, or, barring that, when the range of Seeker Shot expired. But still.

It was, on paper, completely insane.

And that was only one skill tree.

One.

Rain ran a hand through his hair, his doodle long forgotten. More windows appeared.

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## Elemental Archer

A buffing tree focusing on magically empowering arrows.

Anything that multiplies elemental damage here also multiplies any elemental damage enchanted on the arrow.

"Arrow" is a keyword, like "Aura". One Arrow buff can be used at once. They count as spells and are subject to things like Mastery/Synergy/Affinity, etc. They aren't evocations, though, so no Overcharge, Guide Sending, Triplicate Casting, etc.

Arrow skills do nothing for the arrow's physical damage, hurting it if anything. They cause item strain, but the arrow just has to survive it long enough to reach its target. The buffs will work with metal arrows, too, but will reduce accuracy significantly.

### Tier 0

- **Fire Arrow**
  - Wreath an arrow in flames
  - $[(5 \text{ to } 10) * \text{RNK} * (1 + \text{FCS}/200)]$  Heat on impact
  - Sufficient damage causes ignition
  - Cost: 5 mana
- **Ice Arrow**

- Encrust an arrow with ice
- $[(5 \text{ to } 10) * \text{RNK} * (1 + \text{FCS}/200)]$  Cold on impact
- Sufficient damage causes slow
- Cost: 5 mana

## Tier 1

- **Shock Arrow**
  - Charge an arrow with lightning
  - $[(5 \text{ to } 10) * \text{RNK} * (1 + \text{FCS}/200)]$  Arcane on impact
  - Sufficient damage causes paralysis
  - **Cost: 5 mana**
- **Poison Arrow**
  - Douse an arrow in poison
  - $[(10 \text{ to } 20) * \text{RNK} * (1 + \text{FCS}/200)]$  Chemical over 10 seconds
  - Effect only activates if physical damage is dealt
  - Sufficient damage disrupts regeneration
  - Cost: 5 mana
- **Stone Arrow**
  - Jacket an arrow with stone
  - $[(5 \text{ to } 10) * \text{RNK} * (1 + \text{FCS}/200)]$  Force on impact
  - Arrow will not be affected by wind
  - Cost: 5 mana
- **Arrow Affinity**
  - Multiply elemental damage of arrows by  $[1 + \text{RNK}/10]$
  - Requires 1 skill of each element
  - Requires at least 10 ranks in Elemental Archery

## Tier 2

- **Radiant Arrow**
  - Envelop an arrow with the power of the sun
  - $[(5 \text{ to } 10) * \text{RNK} * (1 + \text{FCS}/200)]$  Light on impact
  - Arrow velocity is increased to maximum
  - Physical damage is not affected

- Cost: 5 mana
- Requires Fire Arrow 10
- **Stygian Arrow**
  - Cloak an arrow in the shadow of night
  - $[(5 \text{ to } 10) * \text{RNK} * (1 + \text{FCS}/200)]$  Dark on impact
  - Arrow release, impact, and flight are muffled
  - Cost: 5 mana
  - Requires Ice Arrow 10

### Tier 3

- **Mental Arrow**
  - Shift an arrow to the realm of thoughts
  - $[(5 \text{ to } 10) * \text{RNK} * (1 + \text{FCS}/200)]$  Mental on impact
  - Arrow can phase through up to  $[\text{RNK}/10]$  meters of mundane material before striking its target
  - Cost: 5 mana
  - Requires Shock Arrow 10
- **Arrow Synergy**
  - Multiply elemental damage of arrows by  $[1 + r * \text{RNK}/500]$
  - $r =$  number of ranks in Arrow skills
  - Requires at least 50 ranks in Arrow skills
- **Sapping Arrow (Hidden)**
  - Charm an arrow to drain mana
  - $[(2.5 \text{ to } 5) * \text{RNK} * (1 + \text{FCS}/200)]$  Arcane over 10 seconds to mana
  - Caster gains drained mana
  - Arrow must remain lodged in the target, or the effect will end
  - Cost: 5 mana
  - Requires Mana Manipulation 10
  - Requires 50 ranks in Elemental Archery

### Tier 4

- **Prismatic Arrow**
  - Combine any number of known Arrow skills into a single effect
  - Further multiply elemental damage by  $[1 + \text{RNK}/10]$
  - Cost:  $[5 * n * (n + 1)]$  mana



- n = number of skills.
- Requires 10 ranks in Arrow Synergy

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	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>
<b>1</b>	The Ameliah Number	189.8	r	100		
<b>2</b>						
<b>3</b>	Skill	Type	Rank	Numeric	Meaning	Cost
<b>4</b>	Fire Arrow	Buff	10	146	Avg Heat Dmg	5 MP
<b>5</b>	Ice Arrow	Buff	10	146	Avg Cold Dmg	5 MP
<b>6</b>	Shock Arrow	Buff	10	146	Avg Arcane Dmg	5 MP
<b>7</b>	Poison Arrow	Buff	10	292	Avg Chemical Dmg (over 10s)	5 MP
<b>8</b>	Stone Arrow	Buff	10	146	Avg Force Dmg	5 MP
<b>9</b>	Arrow Affinity	Passive	10	2	Elemental Dmg Multiplier	None
<b>10</b>	Radiant Arrow	Buff	10	146	Avg Light Dmg	5 MP
<b>11</b>	Stygian Arrow	Buff	10	146	Avg Dark Dmg	5 MP
<b>12</b>	Mental Arrow	Buff	10	146	Avg Mental Dmg	5 MP
<b>13</b>	Sapping Arrow	Buff	10	73	Avg Arcane Mana Drain (over 10s)	5 MP
<b>14</b>	Arrow Synergy	Passive	10	3	Elemental Dmg Multiplier	None
<b>15</b>	Prismatic Arrow	Buff	10	2	Elemental Dmg Multiplier	5n(n+1) MP

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<b>Equipment Use</b>				
Utility tree governing general equipment use.				

The "Empowered" skills are toggleable. They are also hard on the item if the enchantment goes above the limit for the material. Allows Tallheart to save resources and effort if designing with this in mind.

Bows count as offhand, arrows as mainhand.

## Tier 0

- **Empowered Underwear**
  - Numerical enchantment boosts from the underwear slot are multiplied by  $[1+RNK/10]$
  - Proportionally multiply enchantment cost
- **Empowered Overwear**
  - Numerical enchantment boosts from the overwear slot are multiplied by  $[1+RNK/10]$
  - Proportionally multiply enchantment cost
- **Deep Durability**
  - Durability of equipped items is multiplied by  $[1+RNK/10]$

## Tier 1

- **Empowered Mainhand**
  - Numerical enchantment boosts from the mainhand slot are multiplied by  $[1+RNK/10]$
  - Proportionally multiply enchantment cost
  - Requires Empowered Underwear 5
- **Empowered Offhand**
  - Numerical boosts from the offhand slot are multiplied by  $[1+RNK/10]$
  - Proportionally multiply enchantment cost
  - Requires Empowered Overwear 5
- **Empowered Amulet**
  - Numerical enchantment boosts from the amulet slot are multiplied by  $[1+RNK/10]$
  - Proportionally multiply enchantment cost
  - Requires Empowered Underwear 5

- **Empowered Charms**
  - Numerical boosts from charms are multiplied by  $[1+RNK/10]$
  - Proportionally decrease charm duration
  - Requires Empowered Overwear 5
- **Deep Hardness (Hidden)**
  - Hardness of equipped items is multiplied by  $[1+RNK/10]$
  - Requires rank 5 in any skill from an armor tree (includes shields?)
- **Deep Sharpness (Hidden)**
  - Sharpness of equipped items is multiplied by  $[1+RNK/10]$
  - Note: This means 'sharpness' the system property. It's essentially hardness reduction, but it's complicated. Yes, it works on arrows, but they have a low base value. Tallheart says it isn't worth worrying about. No, it doesn't make sense. Example: Single-edged swords have higher base sharpness than two-edged swords, even if they are unenchanted. It's just... infuriating. #todo put notes on this somewhere else.
  - Requires rank 5 in any skill from a weapon tree.

## Tier 2

- **Empowered Rings**
  - Numerical enchantment boosts from ring slots are multiplied by  $[1+RNK/10]$
  - Proportionally multiply enchantment cost
  - Requires Empowered Mainhand 5
  - Requires Empowered Offhand 5
  - Requires Empowered Amulet 5
- **Empowered Armor**
  - Numerical enchantment boosts from armor slots are multiplied by  $[1+RNK/10]$
  - Proportionally multiply enchantment cost
  - Requires Empowered Underwear 10
  - Requires Empowered Overwear 10
- **Smell Bound Item**
  - User can smell all items bound to them within a radius of  $[RNK/2]$  km
  - Note: Smell? Really? This spell seems a little useless, other than as a

prereq. Maybe a few niche applications, but Divination stuff is way better.

- Requires Empowered Charms 10

### Tier 3

- **Repair Bound Item**

- Restore durability at a rate of  $[10 * \text{RNK} * (1 + \text{RCV}/100)]$  durability/s when performing maintenance
- Will not regenerate lost material
- Item must be bound and not equipped
- Cost:  $[\text{RNK}]$  stamina/s
- Requires 5 ranks in Smell Bound Item

- **Recharge Bound Item**

- Transfer mana to item at a rate of  $[10 * \text{RNK} * (1 + \text{CLR}/100)]$  mana/s
- Import efficiency may be bypassed
- Speculation: hard on the item?
- Item must be bound and not equipped
- Requires 5 ranks in Smell Bound Item

- **Unknown Hidden Skill**

- Requires Mana Manipulation
- Requires ???

### Tier 4

- **Equipment Mastery**

- Decreases strain on equipment by  $[\text{RNK} * 5\%]$
- Note: Lilly had a 100% reduction. +3 cap from her bronze class, +5 cap from her silver class, and +3 from an item (+1, x3 thanks to Empowered Rings). Skill would have been rank 21 if not for the hard cap at 20. Crazy.
- Speculation: there is a skill somewhere that decreases strain on the user, i.e. soulstrain, whether from items or from spells. I can dream.
- Requires 10 Ranks in Repair Bound Item
- Requires 10 Ranks in Recharge Bound Item

equipment\_use.ods

	<b>B</b>	<u>U</u>	/	Color	Crash	
	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>
<b>1</b>	The Ameliah Number	189.8				
<b>2</b>						
<b>3</b>	Skill	Type	Rank	Numeric	Meaning	Cost
<b>4</b>	Empowered Underwear	Toggle	10	2	Enchantment Multiplier	None
<b>5</b>	Empowered Overwear	Toggle	10	2	Enchantment Multiplier	None
<b>6</b>	Deep Durability	Passive	10	2	Durability Multiplier	None
<b>7</b>	Empowered Mainhand	Toggle	10	2	Enchantment Multiplier	None
<b>8</b>	Empowered Offhand	Toggle	10	2	Enchantment Multiplier	None
<b>9</b>	Empowered Amulet	Toggle	10	2	Enchantment Multiplier	None
<b>10</b>	Empowered Charms	Toggle	10	2	Enchantment Multiplier	None
<b>11</b>	Deep Hardness	Passive	10	2	Hardness Multiplier	None
<b>12</b>	Deep Sharpness	Passive	10	2	Sharpness Multiplier	None
<b>13</b>	Empowered Rings	Toggle	10	2	Enchantment Multiplier	None
<b>14</b>	Empowered Armor	Toggle	10	2	Enchantment Multiplier	None
<b>15</b>	Smell Bound Item	Passive	10	5	Range (km)	None
<b>16</b>	Repair Bound Item	Utility	10	289.8	Repair Rate	10 SP/s
<b>17</b>	Recharge Bound Item	Utility	10	289.8	Recharge Rate	289.8 MP/s
<b>18</b>	Unknown	?	10	?	?	?
<b>19</b>	Equipment Mastery	Passive	10	50%	Item Strain Reduction	None

## Heavy Armor

A defensive tree focusing on heavy armor. Skills are generally about boosting defenses and protecting yourself. A piece of armor is considered "heavy" if it is mostly rigid. Typically, this means metal, but it also allows things like stone, crystal, wood, etc. Chain does not count as heavy, even though it is metal.

Some related trees are Light Armor, Shieldwielding, and Threat Attraction. There's some other armor stuff scattered, like Bramble Armor and Hauberk of Spite.

### Tier 0

- **Heavy Armor**
  - Multiply mass of heavy armor by  $[1+RNK/10]$
  - User does not experience the added mass
- **Mountain Stance**
  - User is  $[1+(RNK/10)*(1+END/100)]$  times harder to knock back
  - Requires user to be wearing heavy armor in the feet slot.
  - Automatically deactivates if user loses contact with the ground for more than 3 seconds.
  - Requires focus to maintain
  - Cost: 10 stamina/minute

### Tier 1

- **Thickened Plate**
  - Multiply durability of heavy armor by  $[1+RNK/10]$
  - Requires Heavy Armor 5
- **Hardened Plate**
  - Multiply hardness of heavy armor by  $[1+RNK/10]$
  - Requires Heavy Armor 5
- **Resistant Plate**

- Adds  $[RNK*END/10]$  resistance to selected elements when the appropriate slot is occupied by heavy armor
  - Chest – Force, Arcane
  - Legs – Heat, Cold
  - Helmet – Chemical, Mental
  - Gloves – Light
  - Boots – Dark
- Requires Heavy Armor 5
- **Conductive Plate**
  - Increases mana conversion rate of metallic armor by  $[RNK*5\%]$
  - Speculation: mana conversion capped at 100%?
  - Speculation: might work for non-heavy metal armor (chain)
  - Requires Heavy Armor 5

## Tier 2

- **Draining Plate**
  - Multiply mana dissipation rate of metallic armor by  $[1+RNK/10]$
  - Requires Heavy Armor 10
- **Deep Plate**
  - Multiply saturation limit of metallic armor by  $[1+RNK/10]$
  - Requires Heavy Armor 10
- **Heavy Resistance Enhancement**
  - Multiplies resistance buffs from heavy armor by  $[1+RNK/10]$
  - Requires Resistant Plate 5
- **Ethereal Helm (hidden)**
  - Reduce perception impairment of helmet by  $[RNK*10\%]$
  - Speculation: past rank 10, makes you see better????
  - Speculation: makes helmet invisible for others as well???
  - Note: no Heavy Armor tree requirements! If I take Mana Sight, I could take this! I NEED MORE SKILL POINTS!
  - Requires Mana Sight 5

## Tier 3

- **Grease Exterior**

- Reduce exterior friction by  $[RNK*10\%]$  for a given piece of heavy armor
- May be activated on multiple pieces at increased cost
- Note: channeled, subject to channel mastery
- Speculation: likely capped at 100%, otherwise, negative friction
- Speculation: "exterior" is subject to intent, meaning this might not make you drop your weapon if you grease up your gauntlets
- Cost 10mp/s
- Requires Conductive Plate 5
  
- **Regenerative Plate**
  - Heavy armor passively recovers durability at a rate of  $[H.Regen*RNK/10]$
  - H.Regen is reduced correspondingly
  - Note: can't be switched off
  - Note: mildly dangerous, TH says above rank 10, hurts you to heal your armor
  - Requires 50 ranks in Plate skills
  
- **Heavy Armor Inventory (hidden)**
  - Banish and summon heavy armor
  - Up to  $[RNK + FCS/20]$  pieces may be stored in the soul
  - Note: rounded down
  - Note: armor must be equipped to be stored
  - Note: slot must be empty to recall
  - Note: this skill explicitly mentions the soul!
  - Speculation: there are versions of this that let you store other things!
  - Cost: ??mp/kg
  - Note: Cost is based on weight, but TH can't remember the conversion factor. Rumbled at me when I suggested hitting him with a Winter Nova for something so "trivial." Tempted to do it anyway to get back at him for not mentioning this skill when I asked about bags of holding. Guess I'll find out what it is once Ameliah unlocks it. An item-enchanted version of this skill is how Tallheart does his helmet trick. He doesn't have the skill, obviously, but he was able to figure out the runes for it by studying Lilly...somehow. The effect is a little different and works on charges, and he can't restore those without GranTel. Every time he summons his helmet, he is depleting charges with no easy way to get them back. He says don't worry about it, but won't tell me how many he has left. Can he do this for other skills? Yes, see my shield. Why does that use mana, but this use charges? Why the hell am I writing a journal in my skill notes? #todo move this to th\_questions2.odt #todo fix max document size bug



- Requires 50 ranks in the Heavy Armor tree
- Requires 50 ranks in the Equipment Use tree

- **Unknown Hidden Skill**

- Requires Mana Manipulation
- Requires ???

#### Tier 4

- **Living Armor**

- Transform into a golem, merging flesh and armor into one
- Health and durability become a single pool
- Speculation: Healing/repair become the same thing, etc.
- Multiply the effect of all Plate skills by  $[1 + \text{RNK}/5]$  while transformed
- Become physically larger proportional to investment in Plate skills
- Cost:  $[\text{RNK} * 1,000]$  stamina to activate,  $[\text{RNK} * 10]$  stamina/s to maintain
- Note:  $\$ \% \& *$  this is expensive! Halgrave is a beast! (assuming this skill is why he looked so big compared to Westbridge when they were fighting up in the sky... #todo ask Mahria)
- Requires Regenerative Plate 10

heavy\_armor.ods

	<b>B</b>	<u>U</u>	/	Color	Crash	
	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>
<b>1</b>	The Ameliah Number	189.8				
<b>2</b>	H.Regen	791	/hr			
<b>3</b>	Skill	Type	Rank	Numeric	Meaning	Cost
<b>4</b>	Heavy Armor	Passive	10	2	Increased Mass	None
<b>5</b>	Mountain Stance	Stance	10	3.9	x Harder to Knock Back	None
<b>6</b>	Thickened Plate	Passive	10	2	Durability Multiplier	None
<b>7</b>	Hardened Plate	Passive	10	2	Hardness Multiplier	None
<b>8</b>	Resistant Plate	Passive	10	189.8	Resistance Adder/slot	None
<b>9</b>	Conductive Plate	Passive	10	50%	Conversion Adder	None
<b>10</b>	Draining Plate	Passive	10	2	Dissipation Multiplier	None
<b>11</b>	Deep Plate	Passive	10	2	Max Saturation Multiplier	None
<b>12</b>	Heavy Resistance Enhancement	Passive	10	2	Resistance Multiplier	None
<b>13</b>	Ethereal Helm	Passive	10	100%	Helmet "Clearness"	None
<b>14</b>	Grease Exterior	Utility	10	100%	Slickness	10 MP/s
<b>15</b>	Regenerative Plate	Passive	10	791	Repair/hr	791 HP/hr
<b>16</b>	Heavy Armor Inventory	Utility	10	19	Pieces	?
<b>17</b>	Unknown	?	10	?	?	?
<b>18</b>	Living Armor	Xform	10	3	Plate Skill Multiplier	10,000SP + 100SP/s

#todo make this file less of a disaster

List for Ameliah:

- Airwalk
- Healing Word (#todo find out why Ameliah is so touchy about higher-tier healing spells. I really hope I'm wrong...)
- Healing Affinity
- Message
- Brace (maybe not needed with armor)
- Attract (we can probably do without this)
- Mana Sight
- Lunar Orb (maybe can do without this, use Radiance and torches?)
- Intrinsic (which ones?)
- Mute
- Stamina Transfer (dump it, got Energy Well)
- Energy Well
- Lifespring
- Healing Trance
- Alacrity
- Body Strengthening
- 
- Magical Synergy
- Physical Synergy
- Efficient Movement
- Masteries (should be one for each element)
  - Can't find: Light, Dark, Mental
- Subelement Affinities
  - Found: Earth, Fire, Ice, Lightning (hidden), lunch,

Synergy Skills

- Same as affinity skills, these work on keywords.
- Skills scale the more skills you have with that keyword.
- Not everything with Synergy in the name is a Synergy skill. Magical Synergy, for example.

## Affinity Skills

- These work on subelements. Fire, ice, lightning, water, air, etc.
  - Boosts skills with that subelement keyword, but not all damage of that element.
    - Example, Fire Affinity wouldn't boost Immolate, but it would boost Fireball, including both the Heat and Force damage
  - There are also "affinity" spells with keywords that aren't subelements. Is there an Aura Affinity???
1. Seriously, the formatting in this file is cursed. Why is this one a number?! Why won't it go away!??

## Elemental Mastery Skills

- There is one for each element, in some tree or another, but some are hidden
- Boosts all damage of that element

Not everything with "Mastery" in the name is a Mastery skill. Channel Mastery, for example, is its own thing.

## Elemental Resistance Skills

- These boost how much resistance you get from each point of Endurance
- There is one for each primary element, but some are hidden.

Could there be a bow kata?

#todo ask Val about Light Mastery

#todo ask Val about tree recombination

#todo ask Staavo about the definition of a 'weapon'

#todo ask Staavo if oatmeal is a soup

#todo start official skill compendium

#todo figure out hyperlinks between documents (wiki-like?)

#todo build a search tool for #todos

#todo sit down and actually work on all the #todos – an hour a day?

"Hey," Ameliah said, startling Rain quite severely. He moved aside the windows so he could see her standing there in her iron armor. She was smiling at him with her visor raised and was holding an enormous, cruel-looking recurve bow in her left hand. The weapon was made of a dark, dull metal, matching that of the oversized arrows peeking over her shoulder.

Adamant.

Only then did Rain realize that Tallheart's hammering had stopped.

Rain must have been making a funny face, as Ameliah was laughing as she reached through his interface to offer him her hand. "Shall we test it out?"