# Dice efficiency in Ashes: Reborn

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Often times when people ask about how to win in Ashes Reborn, experienced players will tell them, “Use your dice more efficiently than your opponent.” However, because units and spells can exist on the board from round to round, it can be difficult to easily identify what constitutes an efficient use of dice.

Understanding dice efficiency is further complicated by the fact that you have to consider outcomes vis-à-vis your opponent; whenever you’re talking about dice efficiency, it’s with relation to how your opponent has spent their dice.

Lastly, before I get into the nitty gritty of evaluating outcomes for their dice efficiency, I want to also mention that while efficiently dealing damage is extremely important, it’s not the only thing that will win games. Smart sequencing, tempo plays, and gaining higher utility from your cards compared to your opponent all play a part, as well. This is simply one piece of the puzzle.

## Damage vs. utility

Cards in Ashes tend to do one (or more) of three things:

1. Deal damage (attack values on units, direct damage)
2. Prevent or mitigate taking damage (life value on units, healing, destruction effects)
3. Offer a utility effect (adjust dice, manipulate exhaustion, etc.)

There are a lot of different utility effects, and they can be very difficult to evaluate from the standpoint of dice efficiency. Utility effects often show their worth through play, and sometimes only if you use the correct play line (or situation) for them. As a result, while I can help coach you through evaluating dice efficiency, learning which utility effects you need and prefer will require playing the game. Smart deck building and play can allow you to use cards the community generally considers inefficient to great effect by compounding utility effects.

(Incidentally, if you’re ever wondering why “decks full of units” are so popular in Ashes: it’s because units often do all three of the things above! They deal damage by attacking or countering, prevent damage to your Phoenixborn by blocking or encouraging your opponent to attack them, and usually have some utility effect.)

With that out of the way, let's take a look at the starting point for evaluating your damage-to-dice efficiency!

# Base damage output

The starting point for calculating dice efficiency is to look at your base damage output. This is situational, but at the most simplistic you can boil it down to "how many wounds—or wound equivalents—does this card cause compared to how many dice it costs?" For instance:

- Frost Bite is a Ready Spell that deals 1 damage for 1 die; this is a 1-to-1 ratio
- Final Cry is a spell that deals 2 damage to your opponent for 1 die; this is a 2-to-1 ratio

This actually illustrates the full range of base damage output in Ashes! (Some cards have ratios below 1-to-1, but they typically have some utility effect that complicates calculating their actual value.)

There are also some cards like Summon Frostback Bear that have a "book tax": a play cost that is effectively amortized across the total number of conjurations you summon all game. In this instance, if you only summon 1 Frostback Bear, it costs 3 dice (2 damage to 3 dice). But if you summon two, they effectively cost 2.5 dice each, and so on. Since the book tax typically only impacts your First Five, most people round it to zero for subsequent summons—so a Frostback Bear effectively costs 2 dice, for your standard base damage output of 1 damage to 1 die.

However, base damage output is merely a starting place! To calculate your actual dice efficiency, you have to look at outcomes.

# Calculating dice efficiency through outcomes

To calculate the dice efficiency of a card, you need to consider its total outcome: that is, how many wounds it dealt and was dealt until it was destroyed. Note that there's a difference between wounds and damage in Ashes! Base damage is how much damage the unit is capable of outputting in a simple attack to the Phoenixborn compared to how much dice you spent. Dice efficiency is more about how many *wounds* the unit actually places, though.

For instance, say I summon a Hammer Knight. Its base damage-to-dice ratio is 3-to-3. However, if you respond by playing Sword of Virtue to destroy my Hammer Knight before I have a chance to attack with it, then I have spent 3 dice to deal 0 wounds, and you have spent 2 dice to effectively deal 4 wounds (since that's how much damage the Hammer Knight would normally take to

destroy).

That scenario is pretty easy to intuit the efficiency ("I spent 3 dice, you spent 2 dice, and we're back where we started, so you were more efficient."). Things start to get complicated when both players are dealing damage, however.

For a second scenario, say I have a Hammer Knight, and you have a ready Frostback Bear and an exhausted Mist Spirit that attacked on a previous turn (this is the first round, so the Frostback Bear costs 3, including the book tax). I attack the Frostback Bear and deal it 3 damage to destroy it, while it deals 2 counter damage back. I then use the Hammer Knight's Aftershock ability to deal 1 damage to the Mist Spirit. In this instance, I have spent 3 dice for 4 wounds, while you have spent 4 dice for 3 wounds (two from the Bear's counter, and 1 from the initial attack from the Mist Spirit). My efficiency is slightly better, but *more importantly* we are not done with the Hammer Knight's outcome, because the Hammer Knight is still in play. For instance, you might use Aradel's Water Blast ability to deal 2 more damage to the Knight, killing it. That makes the final outcome 4 wounds to 3 dice (1.33) for me and 5 wounds for 4 dice for you (1.25): my efficiency was slightly better, because I have a slightly higher ratio. If you subtract the two ratios, you end up with 0.08; so you could say that in that exchange I was ahead by about a tenth of a wound.

The reason that knights are so popular, however, is because that minor efficiency improvement is usually the floor for Knights (barring hard removal, as described above). If you don't have Water Blast (or an equivalent way to kill the Knight) and the round ends, then the outcome is a lot worse for you because the Knight's recover 2 value clears off your two wounds and I get to use my Knight again.

For argument's sake, let's say that happens and you attack the Knight with a Frostback Bear, then use Water Blast to kill it. At this point, my efficiency is 7 wounds for 3 dice (4 in first round, 3 in counter damage to kill the Bear this round), or 2.33. Your dice efficiency is 5 wounds for 7 dice (1 in first round from Mist Spirit, since the Bear's wounds were wiped out by Recovery; then 4 from the Bear and Water Blast this round), or 0.71. Subtract those two numbers and you get 1.62: I was ahead by over one and a half wounds! That sort of thing adds up, because there's only so many wounds you can soak up with your dice (and available conjurations or units from hand) before I start converting that damage into damage on your Phoenixborn.

# Messing with your opponent's outcomes

In the examples above, all damage being dealt was the perfect amount to destroy a unit (or not). But much of the time that won't be the case. You can increase your dice efficiency by ensuring that your units output as close to their full damage as possible, while your opponent's units waste their potential damage output.

For instance, if I play a Hammer Knight, and you attack it with two Shadow Spirits (across subsequent turns), my efficiency is 2 wounds for 3 dice (each Shadow Spirit only has 1 life and the Hammer Knight remains ready after countering)—0.67—while your efficiency is 4 wounds for 2 dice—2. That's a difference of 1.33 wounds in your favor!

By making smart choices about which units to block or guard and which to attack, you can maximize the wound output from your units and minimize the output from your opponent's units to increase your relative dice efficiency.

# Why dice efficiency matters, even when it's from wounds dealt to units

Ultimately, the only damage that matters is damage dealt to your opponent's Phoenixborn, but because dice, cards, and the number of units available to you are finite resources, considering the dice efficiency with which your deck can handle various scenarios is important. There is an opportunity cost to playing and attacking with units, which is one of the reasons Alert knights are so played so widely. Although they have a relatively high dice cost, they make up for it by potentially killing off a bunch of your opponent's units (and, in severely disadvantageous matchups, ultimately swinging to face, as well). Additionally, decks can only put so much attack, damage, and life on the board each round, and efficiently dealing with what your opponent has played can allow you to build up very big dice efficiency differentials simply when your units persist to a new round and swing again.

# Practical applications for calculating dice efficiency

Exactly calculating your dice efficiency in the middle of a game of Ashes like I've done in the examples above isn't a useful endeavor. However, considering dice efficiency can be very important during deck construction, before games when you know your opponent's list (to determine your ideal play lines), and after games (to understand where your play lines or deck building choices might need to change to improve your outcomes).

For instance, at the time of this writing I just finished playing a Noah deck in the 2021 Shufflebus 5 tournament which fielded mostly several 2/1 conjurations that cost 1 die each. Doing some simple efficiency outcome calculations, I can determine what books are optimal to lock down with Noah's Shadow Target ability to avoid inefficient trades. I faced a deck that was running Summon Turtle Guard and Summon Ruby Cobra. From an efficiency standpoint:

- If they attack a 2/1 with the Ruby Cobra, they spend 1 die for 1 damage (and a mill, which is a utility effect that is difficult to value under this framework) and I spend 1 die for 2 damage. We basically break even there, so there's not much reason to worry about locking down that book, and if I attack it I kill it and leave an exhausted 2/1 unit behind (which requires them to expend more resources to destroy, improving my efficiency).
- Turtle Guard is less simple, because it has Recover 1 and is effectively immune to damage while exhausted. So they play it for 2 dice (1 for the book tax), I attack with a 2/1, then the round turns over and I attack it with a second 2/1 to kill it. That's 3 wounds for 2 dice for me (1.33) and 2 wounds for 2 dice for them (1). On paper that looks to be slightly in my favor, but because Turtle Guard has Unit Guard that means I don't get to decide where the damage goes (they effectively get 2 free guard actions, which is a big deal if I need to efficiently deal damage). Subsequent Turtle Guards only cost 1 die, too, so the same pattern repeated in the second round would mean their efficiency is 2 wounds for 1 die, and mine would be 3 for 2 (plus all the same efficiency costs). That means locking down Turtle Guard with Noah's ability was a high priority for me.

Those particular examples are kind of obvious, but hopefully illustrate the concept. You can also consider the opposite: why did my opponent choose those two books?

- Ruby Cobra is a 1/2 unit on attack, or a 0/2 unit on defense. For decks that *aren't* running 2/1 units (my deck is an outlier in that regard; in the online meta as of this writing it's an unusual statline to see), that means that a likely outcome for the Cobra is to deal 1 wound for 1 die (a low baseline damage, but consider it also has a utility effect), but then require 1-2 dice spent by your opponent to kill it (or it might soak up a Knight swing, causing them to waste a potential wound).
- Turtle Guard is a 2/3 unit that can't attack, which effectively costs 1 die (disregarding the book tax). That makes it very difficult to kill by anything *except* Knights, with whom it trades beautifully (it deals damage equal to half a typical Knight's health, making it much easier to efficiently kill the Knight).

These less specific "good enough" calculations are typically how most players think about dice efficiency. Tracing specific, full outcomes is often too difficult, very specific to individual match-ups, and is complicated by the fact that dice efficiency is a constantly evolving thing; in a way, the true "outcome" would have to be tracking efficiency from the very start to the very end of the game, because it's very common for highly efficient outcomes to be turned on their head (for instance, perhaps I efficiently kill a Hammer Knight with my 2/1 units only to a have my opponent play a *second* Hammer Knight that wrecks me with Aftershock damage and survives to the next round). Examining specific outcomes can hopefully help lead to a more general understanding of efficiency, however.

# Dice efficiency isn't everything

I mentioned it earlier, but it bears re-iteration: dice efficiency isn’t everything! Simply collecting all the most efficient units in a single deck won’t necessarily win you games; timing, smart play, and exploiting utility effects that work well together are all incredibly important parts of Ashes, as well. However, gaining an understanding of what constitutes dice efficiency will definitely help improve your ability to construct decks and make smart choices in game, so it’s worth thinking about.

Good luck and have fun!

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