

THE JOURNAL OF ARRAY DESIGN

VOLUME 1



STORMFORGE PRODUCTIONS

FOREWORD

Welcome to the very first volume of the *Journal of Array Design*!

In this volume and all those that follow, you will find all of the arrays created by Stormforge Productions. While the arrays in this volume is mostly concerned with *The Runed Age*'s setting of the grand city of Middelburg, this Journal serves to give you an overview of how to use each array and as such can be used in any setting you can think of. In the volumes that follow, we will be showcasing not only *The Runed Age*'s arrays, but also the spoken, incanted arrays from *Fulcrum*, *The Runed Age*'s sister setting.

If you want to show the world your skill at array design, you can have your own arrays published in our next volume! Simply head on over to www.stormforgeproductions.com and submit your design in the same format as what you will find in this Journal and the next volume you receive will have your name and array presented for all the world to see.

Until then, enjoy this Journal and the arrays it contain and may they serve you well in your adventures through worlds fantastical and mysterious. And should you require any help with any of the arrays, simply ask and we will be glad to help.

Yours aye,
Izak Tait



BLOOD DRINKER

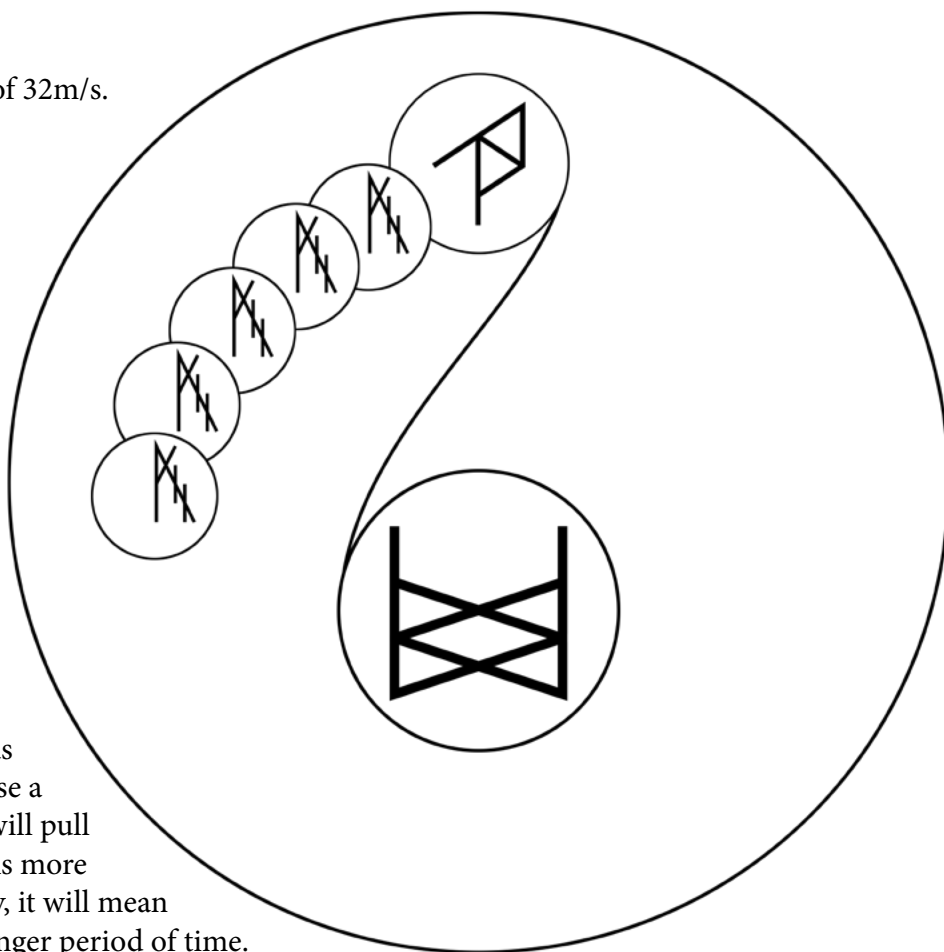
NOTATION

Pull Blood at a speed of 32m/s.

DESCRIPTION

This array does only thing, it pulls blood towards the array at a speed of 32 metres per second, or 115 kilometres per hour. As with most offensive arrays, this array is intended to be applied to weapons, although in this case, to blades. Once inside the body, this array will pull the blood so quickly towards the array that it will cause a vacuum which in turn will pull more blood behind it. As more blood activates the array, it will mean a stronger effect for a longer period of time. As the speed is constant, the extra energy from more blood will go into increasing the area of the array's effects. This will also apply even when the blade has been removed from the body, meaning that any blood leaking from a wound will be swiftly drawn to the array to continue powering the array and increasing the area of its effect. A horrifying positive feedback loop.

Unimaginative in name, unimaginative in design. The *Blood Drinker* is a brutal, cruel and crass weapon, quite at home in the underbelly of Middelburg. It is clean, though, that must be said for it. Unnervingly clean, in fact. When you don't want to leave behind evidence, this is the array to use. There will never be any blood splatter or blood trails to indicate that there something is afoot. Because of this, the *Blood Drinker* is a common tool of hired killers who wish to remain anonymous. In an age before forensic science, a little cleanliness goes a long way to



staying out of gaol and away from the gallows. Underground fighters are also fond of this array as its blood draining effects sap the stamina and strength of their opponents.

BLOODHOUND

NOTATION

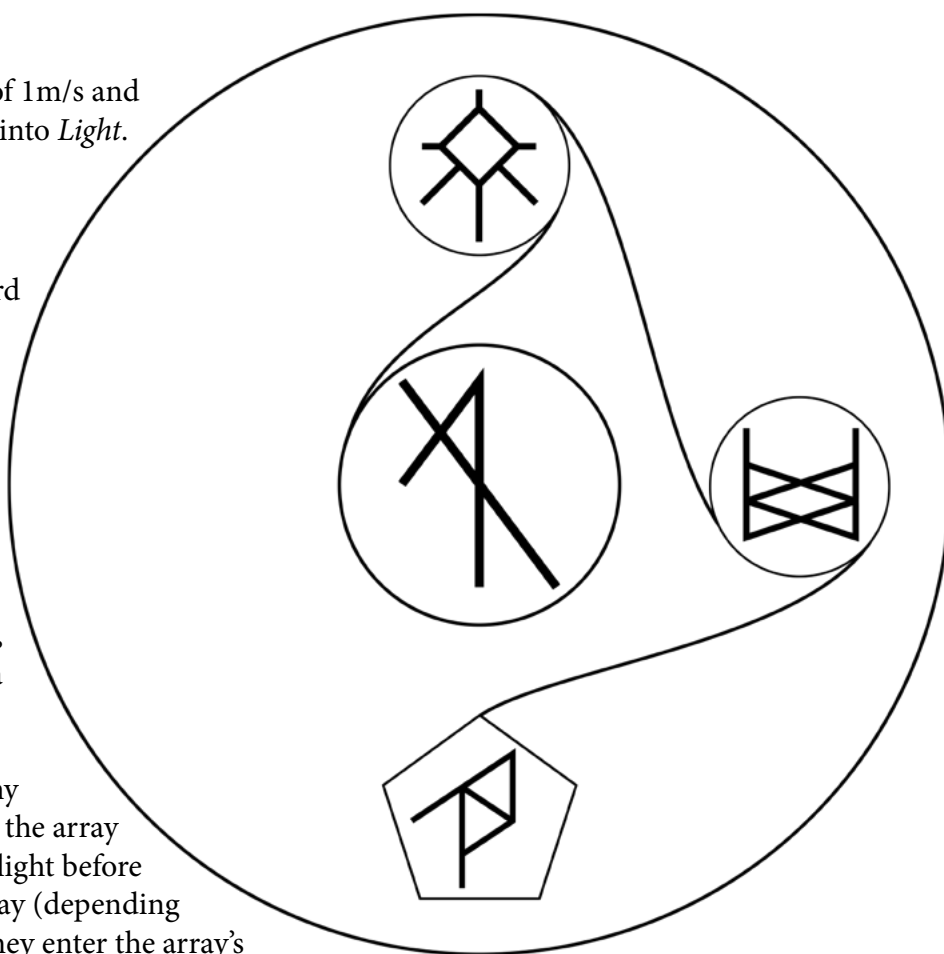
Pull Blood at a speed of 1m/s and
Transmute that blood into *Light*.

DESCRIPTION

A fairly straightforward design that transmutes blood into light. It goes the extra step, however, in pulling blood as well, ensuring it will have a constantly supply of material to transmute. As *Blood* is the key component in this array, it is clearly intended as a weapon to penetrate the body.

Note, however, that any blood that is pulled into the array will be transmuted into light before they can activate the array (depending of course on the angle they enter the array's sphere of influence). This is because as soon as they enter the array's sphere of influence, they will be transmuted. This means that the effect will be a stuttered, stop-start effect as blood will activate it ensuring no further blood can activate it, but as the energy from the original blood fades, blood will be able to reach the array to activate it and start the cycle over again.

A favourite array of the military especially when fighting at night, the *Bloodhound* truly lives up to its name. Once it enters the body it produces a great amount of light in a distinctive strobing pattern that shows everyone in the vicinity exactly where to aim. For this reason, the *Bloodhound* was nearly exclusive used to on ammunition until the Monarchists started using it not only for their ammunition but also on their blades. The *Bloodhound* compliments the *Armour of Light* and the "Light from Shadows" motif that the Monarchists are so fond of. The



aura of light that surrounds their blades when it touches blood is also the sort of spectacle the Monarchists approve of and such a performance has swayed more than one prospective members into believing the Monarchists follow a holy cause.

CONSTABLE'S FRIEND

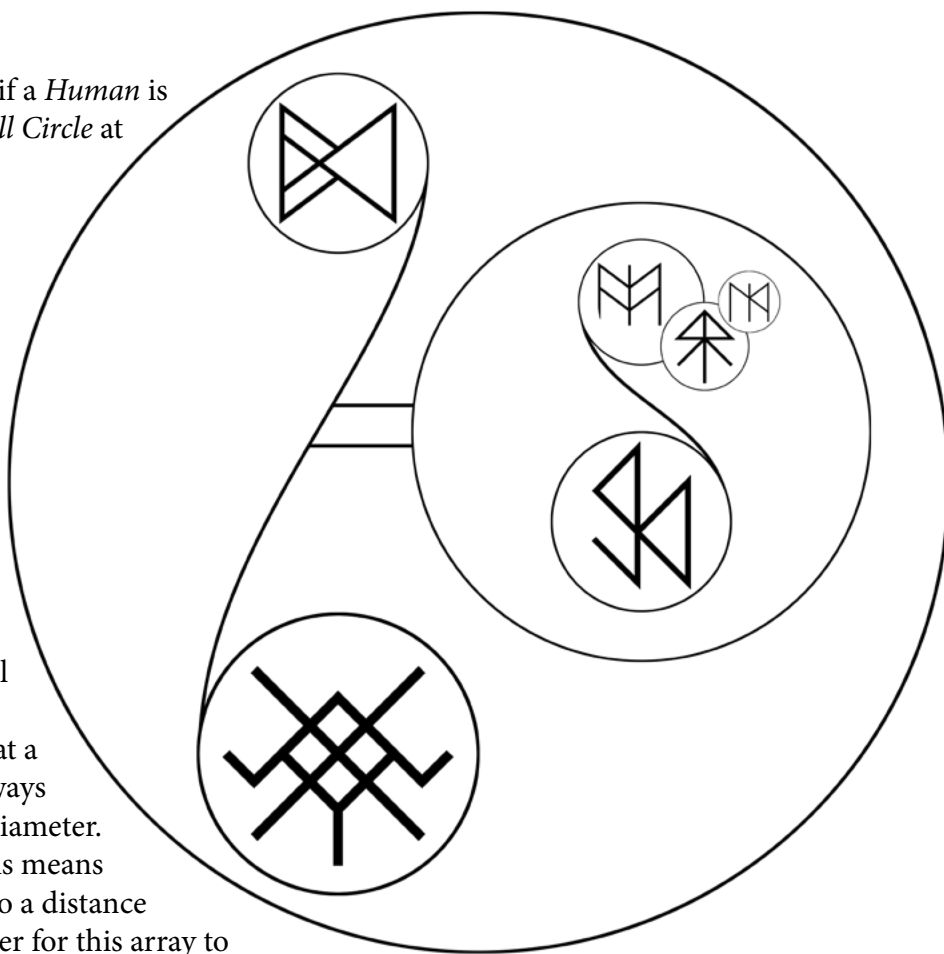
NOTATION

Create *Lightning* only if a *Human* is Contained within a *Small Circle* at the array's base.

DESCRIPTION

The main part of this array is the most simplest array: Create an effect. The “trick” with this array lies in the trigger for activation. The array will only activate if there is a human contained within a small circle at the array's base. The height of a circle that a *Circle* rune creates is always 10% that of the array's diameter. With the *Small* rune, this means that a human must get to a distance of 1% the array's diameter for this array to activate. If the array is small enough then it is possible to touch the array with gloves on and not activate as the gloves will be thick enough not to trigger it.

“Our first priority is the wellbeing of our citizens!” With these words, the new chief constable forbade the constabulary to use any arrays designed to cause lethal damage to humans. The criminal underworld was delighted at this news, the constables were less so as their work had suddenly become much more difficult. The *Lightning* rune was their saving grace as the effect of electricity on humans is as unmistakable as it is effective. While the fatalities caused by the constables have decreased in recent times thanks to the *Constable's Friend*, the constables still use muskets, pistols and billy clubs meaning there are still numerous fatalities caused by the weapons themselves. This, however, seems to be an acceptable compromise between the constables and their new chief.



CRYPT'S BREATH

NOTATION

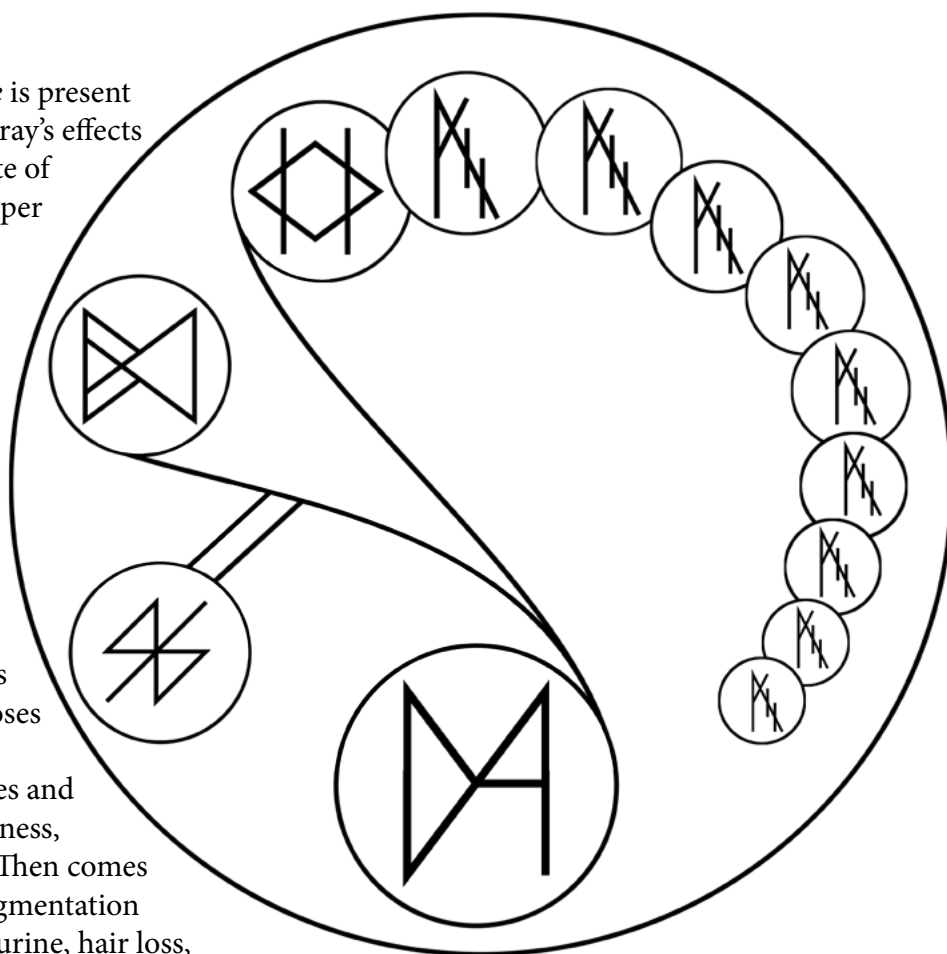
Create *Arsenic* if *Stone* is present within the area of the array's effects and *Heat Arsenic* at a rate of 512 degrees Centigrade per second.

DESCRIPTION

Much like other poisoning arrays, this array deals with arsenic as an offensive weapon, and gives a cruel death to all those it meets. 300 milligrams of arsenic in the blood is a lethal dose. At such doses and beyond, symptoms appear within 30 minutes and include confusion, dizziness, vomiting and diarrhea. Then comes convulsions, cramps, pigmentation colouring, blood in the urine, hair loss, troubled breathing, immense pain all before collapsing into a coma less than 24 hours later and soon after. This array can provide doses of arsenic that merely being in its presence is a death sentence only a few hours after exposure.

Arsenic in its natural form is a dull grey metallic crystal, however when heated to above 887 degrees Centigrade, it can sublime and turn into a gas. It takes less than two seconds for this array to reach that temperature and that is its purpose: to create an arsenic gas that the enemy will inhale and then succumb to arsenic poisoning. Throw this into a crowded room and you won't even have to get your hands dirty. Arsenic gas smells only faintly of garlic and that is the only warning your enemies will have.

The trigger for this array is *Stone*, but that can be changed to whatever you need. Its purpose is only to make sure the array can build up the required energy it needs. Heating



something up at the rate of 512 degrees Centigrade per second requires a lot of energy after all. This array is most often inscribed on a metal ball and either thrown or shot by a cannon where it needs to go, so you can think of this as a poison grenade.

FURNACE FIST

NOTATION

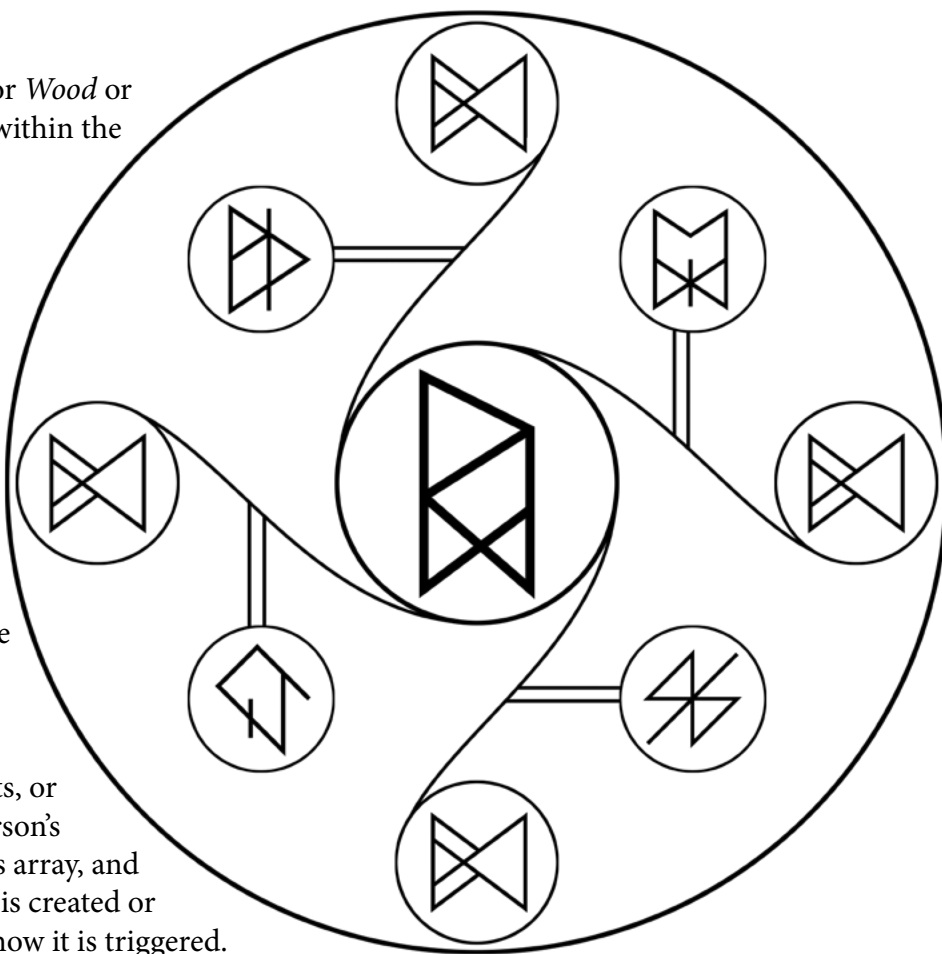
Create Fire if Animal or Wood or Stone or Iron is present within the array's field of effect.

DESCRIPTION

It's symmetrical, it's simple, it's easy to understand. What more could you want from an array? The name immediately gives away the purpose of this array, furnace and fist can mean only thing: fire punches!

Arrays like these are often found on knuckledusters, gauntlets, or even tattooed onto a person's knuckles. The key to this array, and other like it, is not what is created or even what triggers, but how it is triggered. There are four different *Create* runes with four different triggers (although you can add many more than this), and it is of the utmost importance to have it arranged like this, because it means each trigger works independently. If you had two or more triggers attached to the same *Create* rune, that rune would only activate if both triggers are set off; it becomes a "this and that" trigger rather than a "this or that" trigger.

Like all arrays with *If-Then* statements and triggers, the *Furnace Fist* array gets its effectiveness from the triggers. Until one of the triggers is activated, this array will continually absorb energy from wherever it can find it: heat, light, kinetic energy, etc. So that means when you do punch someone with this, it's not just the energy from your punch which determines how much fire is created, but all the energy it has stored up until that punch.



GOD'S RAZOR

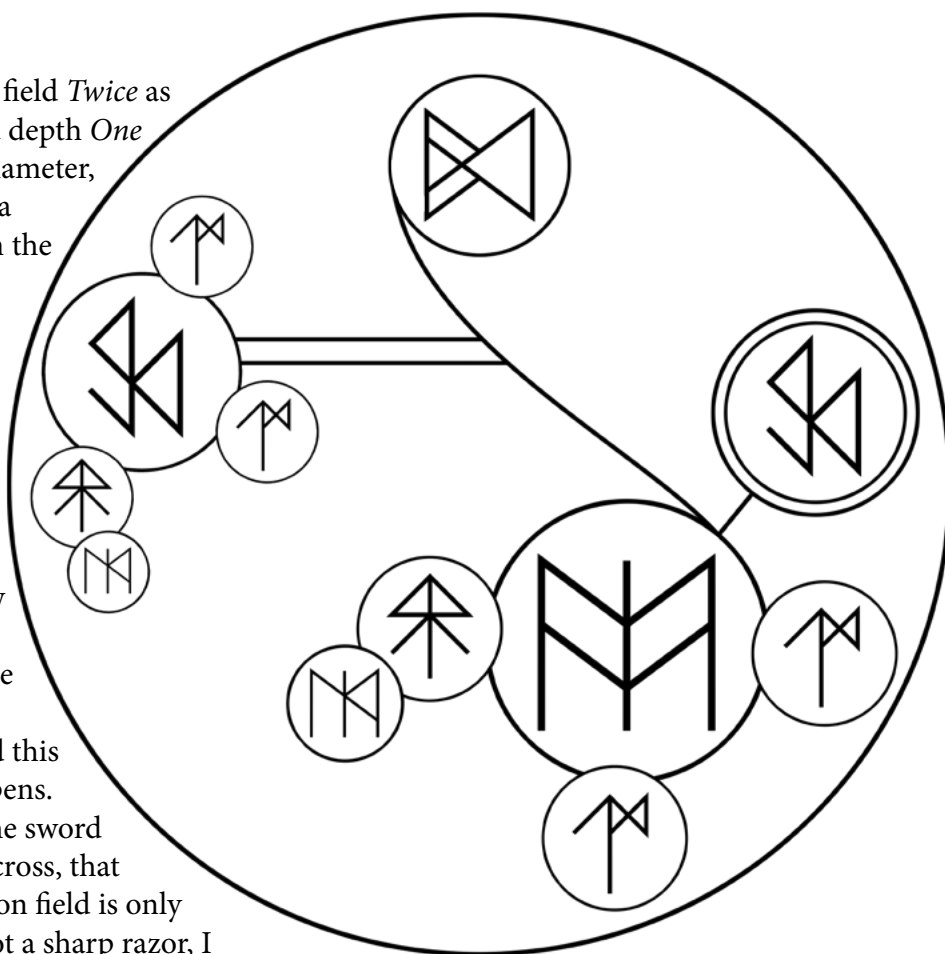
NOTATION

Create a Containment field Twice as large as the array, with a depth One Hundredth the array's diameter, that Excludes Human if a human is present within the same area.

DESCRIPTION

At first glance it seems like a fairly standard exclusion array that targets humans, until you know it's application. The God's Razor, as the name implies, is meant to be applied onto blades, and this is where the magic happens. Assume the arrays on the sword or dagger is only 2cm across, that would mean the exclusion field is only 0.2mm thick. If that's not a sharp razor, I don't know what is. Since the width of the effect is twice that of the array, it means that the exclusion field will be wider than the blade itself. If you apply the array to both flat side of the blade, this means that the blade itself will never come into contact with flesh at all, since the array will destroy any before it even gets to the blade.

Unlike a normal containment field that excludes something that is always on as long as there is energy, this containment field only activates if there is a human in the same area as the containment field. This works in much the same way as the Blessed Solitude array from last week. The reason for this is twofold. First off, it saves energy, since the array has a very specific trigger for activation, it can store up energy for a very long time before releasing it only for short bursts. This means that you will very rarely have to charge the array, as the kinetic energy from combat, or simply walking about, will do that for you.



The other reason for this specific trigger is so it will always destroy human flesh. If there trigger wasn't there, it would create a containment field that destroys what human flesh is inside it, but because will continue to be "on", it will simply act as a forcefield against any further human flesh, preventing it from entering the containment field. By adding this trigger, you are ensuring that it will always destroy flesh because it will only activate if there is indeed human flesh inside the containment field's area of effect.

While it may seem like a gruesome array, it is one blade you will never have to sharpen.

HATCHLING

NOTATION

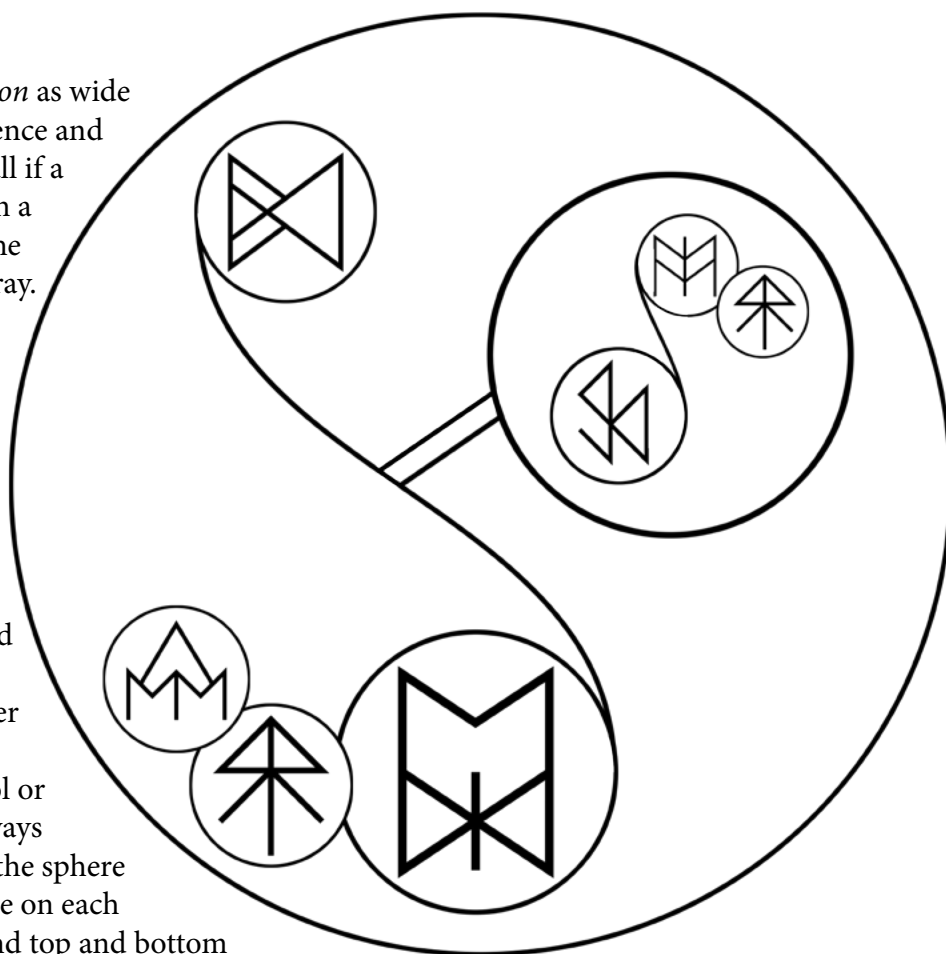
Create a cylinder of *Iron* as wide as the array's circumference and one hundred times as tall if a *Human* is present within a distance one tenth of the circumference of the array.

DESCRIPTION

To understand the *Hatchling*, one must first understand how it is used. A *Hatchling* array is always carved onto a sphere and hurled at an enemy in some form or manner, whether it be thrown, catapulted or shot by cannon, pistol or musket. The array is always carved six times across the sphere for maximum effect (one on each front, rear, both sides and top and bottom of the sphere). When it reaches an enemy, that enemy must then touch it. If thrown or catapulted, this usually happens because the enemy picked up the sphere not knowing what happens. The most desirable effect, however, is if the sphere is inside the enemy.

Once the enemy touches the sphere, a cylinder of iron erupts from the sphere, skewering everything in its path, first and foremost being the enemy. If it is on a musket or pistol round, then all six iron cylinders shoot out at once in all six directions, "hatching" from inside the enemy.

This is not however where the cruelty comes in. Hopefully, for the enemy's sake, they have died by this, but if they have not, then they have six iron cylinders sticking out them. If the array was inscribed on a musket or pistol round, these cylinders are more than a metre in length! Now that the enemy is looking like a porcupine, he will not be able to move 9 times out of 10, meaning that the next shot to kill



him will be far, far easier. And that is why this array was designed: to incapacitate enemies it could not kill outright.

ICE BREAKER

NOTATION

Cool (at a speed of 32 degrees Celsius per second) a volume of Water two hundred times the circumference of the array if a volume of Water two hundred times the circumference of the array is present within the range of the array.

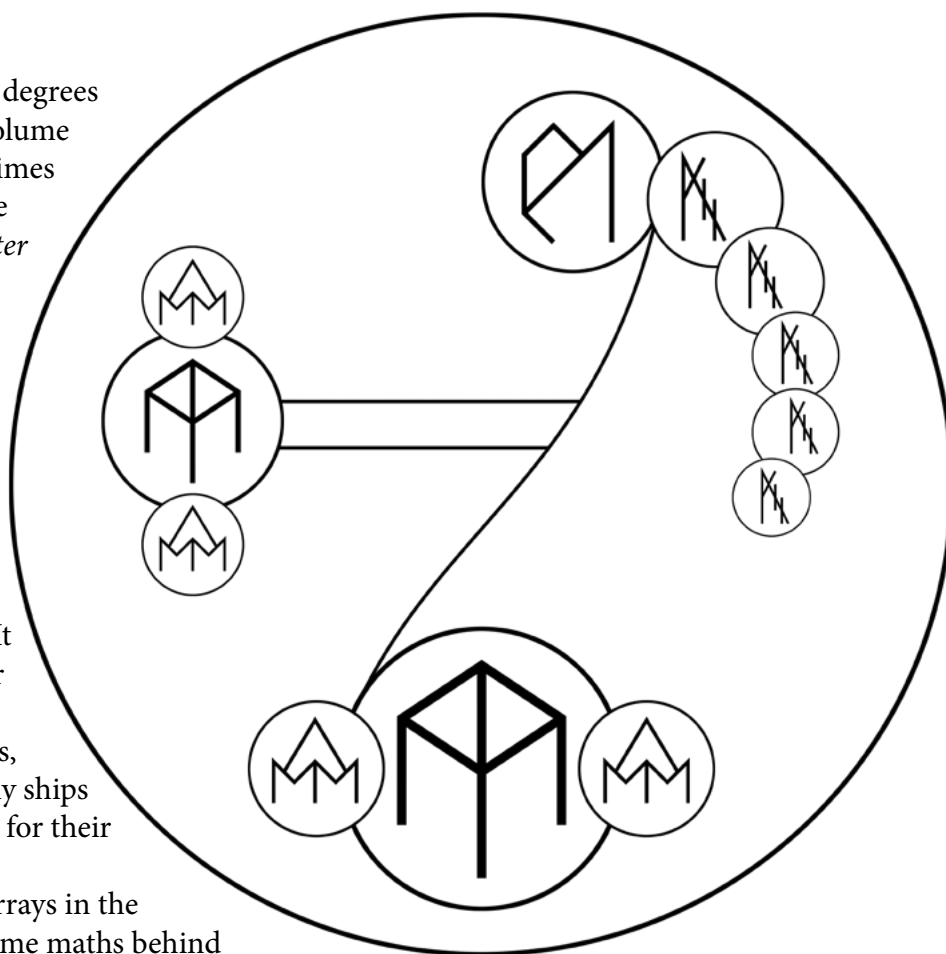
DESCRIPTION

The short and the sweet of this array is that it creates icebergs. It is used by ships in order to slow down or even bring down enemy ships, usually to prevent enemy ships escaping or to give time for their own ships to escape.

As with most of the arrays in the Runed Age, there are some maths behind the workings of this one, although this week the maths will be far easier than normally.

Cannonballs came in all shapes in sizes, but in the main ranged from a diameter of 8cm all the way up to 17cm. For the sake of this array, let's assume the ships would use their biggest guns in order to get the greatest amount of ice, so the 17cm diameter 19 kilogram cannonballs. A cannonball of that size with this array hitting the water would turn about 36 cubic metres of water into ice in less than a second. That is a lot of ice. That's 36,000 litres of ice, or 17,000 two litre ice cream containers. Imagine a few dozen of these appearing in front of your ship in the blink of an eye.

The average temperature of ocean surface water is 17 degrees Celsius. It's a bit warmer at the latitudes around Alfresia, but still well within the 32 degrees per second limit put into the array. Ocean surface water also freezes at -2 degrees Celsius, but even 19 degrees of temperature difference can easily be



achieved by this array. That is not the problem, the problem is the energy cost of this.

Freezing 36,000 litres of water inside a second costs a lot of energy. It takes about 4200 joules of energy per litre per degree Celsius to freeze water. We have a lot more than that. For this array you will need 4.8384 gigajoules of energy. That is quite a lot of energy, more so that you would get from just firing the cannonball out of a cannon.

For this reason, these cannonballs are often "cooked" over a fire to store the energy in them until it is released. Ordinarily, energy is released automatically when it enters the array. The if-then statement in this array, however, means that no energy will be released until that is triggered. In this case, the trigger is to for the array to be surrounded by at least 36,000 litres of water.

MANSTOPPER

NOTATION

Push Human at a speed of 4m/s twenty times the area of the array.

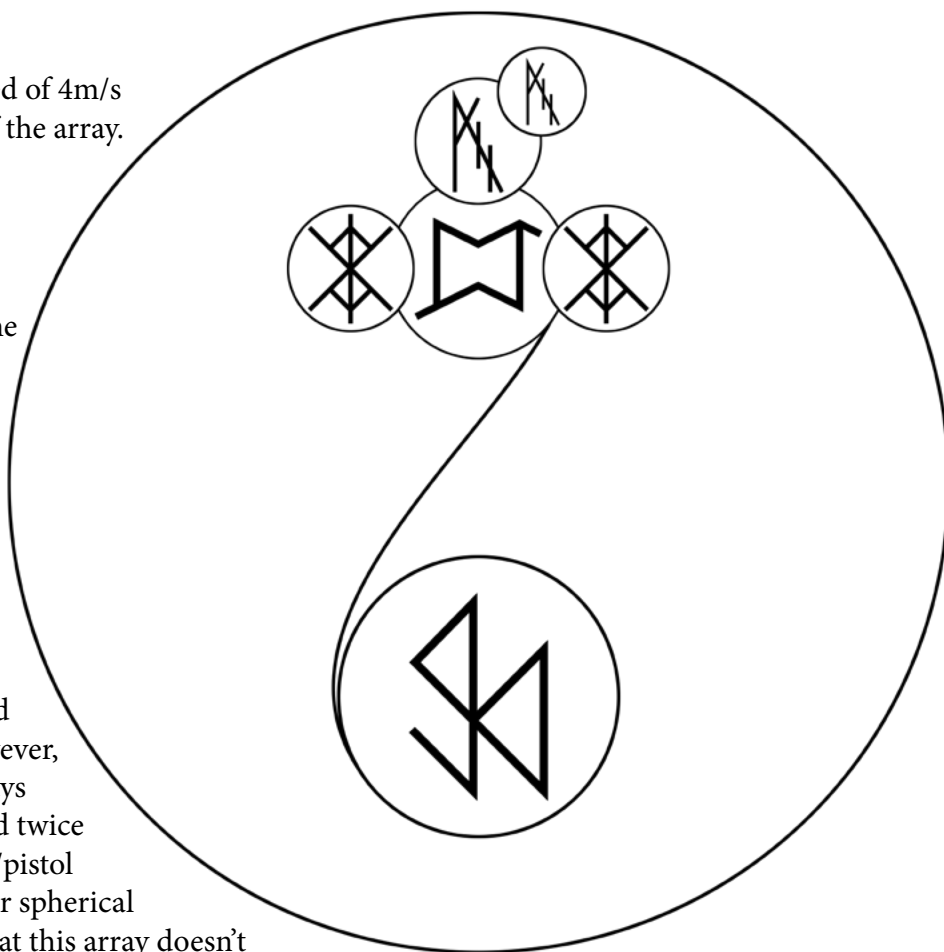
DESCRIPTION

Simple in design, horrific in execution. The basics of this array is that it pushes a human at a speed of four metres per second to an edge that is twenty times the area of the array. It sounds simple enough, and if used as a jumping board it would be both entertaining and (mostly) harmless. However, this array is almost always placed on bullets, carved twice or thrice on the musket/pistol ball in order to get better spherical coverage. This means that this array doesn't push a human in a certain direction as much as it pushes the human flesh around it away from the array.

If you assume a 1cm diameter array on the musket/pistol ball, this means the area that the human flesh will be pushed to is 20cm. A 20cm sphere is a very, very significant part of the human body. At four metres per second it will only take 0.05 seconds for the effect to happen, this is three times faster than you can blink.

The size runes on this array is not just to increase the area of the effect, but also to put a threshold on the array. This array is meant to be inside a person before it activates. It can't activate before getting to a person or it would just push them away.

The name says it all. *Manstopper*. This array was created for one purpose, and one purpose only, to put a man down and make sure he doesn't get back up. It was the favourite of the constabulary before the discovery of the



Lightning rune and subsequent calls for more lenient policing measures. The constables put the *Manstopper* to good use during riots, raids or even just to stop a fleeing suspect. Now that the constables have moved onto newer, better and more ethical means of stopping criminals, it is these criminals who have now taken to using the *Manstopper* for their own ill deeds. There is no doubt that the *Manstopper* is effective and no doubt indeed it will see much use in the coming years.

MARKUS' GIFT

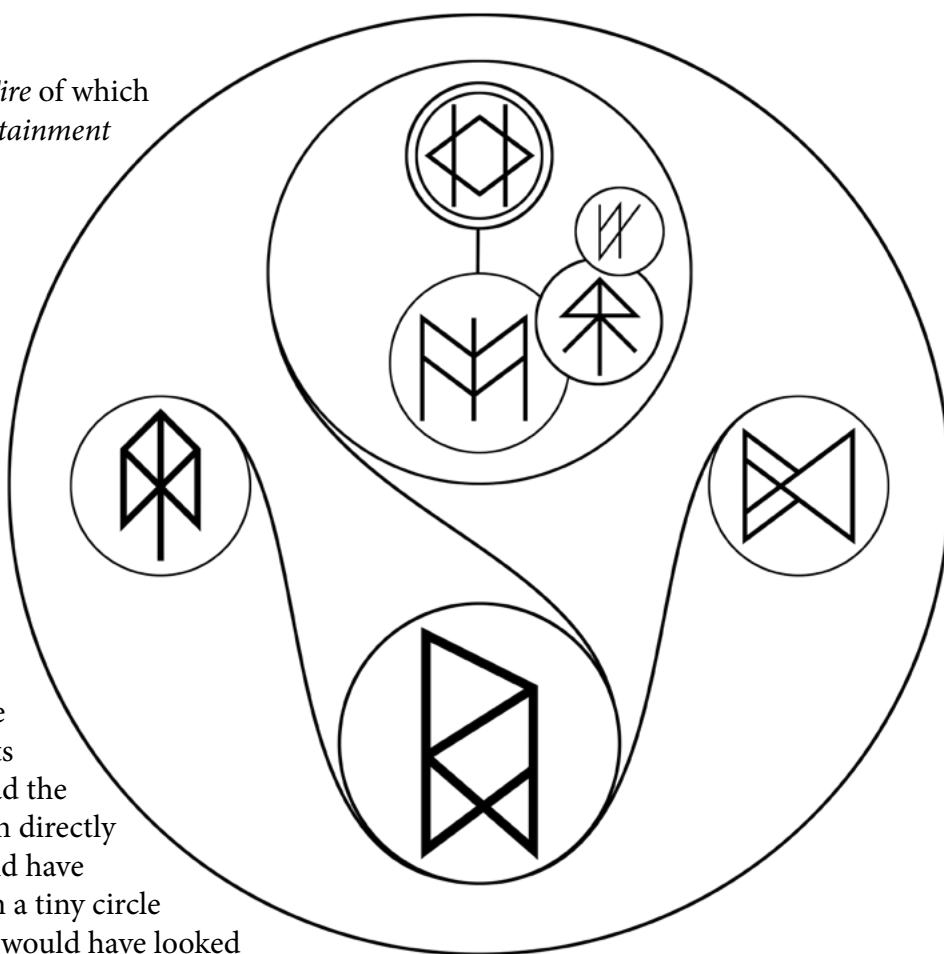
NOTATION

Create and Sustain a Fire of which the lowest 0.1% is a *Containment* field that *Excludes Heat*.

DESCRIPTION

This array is all about fire safety. It creates fire while the base of it has no heat. The reason for this is that this array is mostly used on weapons and you don't want the fire you creating to melt or damage your blades and bullets. Just note the inner array and its effects on the fire. Normally, had the *Contain-Circle-Tiny* been directly affecting the fire, it would have contained the fire within a tiny circle that excluded heat. This would have looked pretty, but have been functionally useless. That is why it is in its own array, because remember that when an array affects a locus, it is not the runes inside which are affecting the locus, but the effect of the array that is affecting the locus. This means that there is no containment field on the fire itself, but a containment field excluding heat is placed over it.

Another holdover of the War of Independence, this time from the other side of the trenches. Supposedly the favourite array of the mad king Markus VI himself, this array found its way to van Strauss' weapons by way of the mad king's descendant, an old friend of van Strauss. For the obvious connotations to the War of Independence and the havoc that the mad king wreaked across Middelburg, this array sees little use in Middelburg. The memories of the fires the mad king started are still fresh in the minds of Middelburg's citizens.



PEACE OF MIND

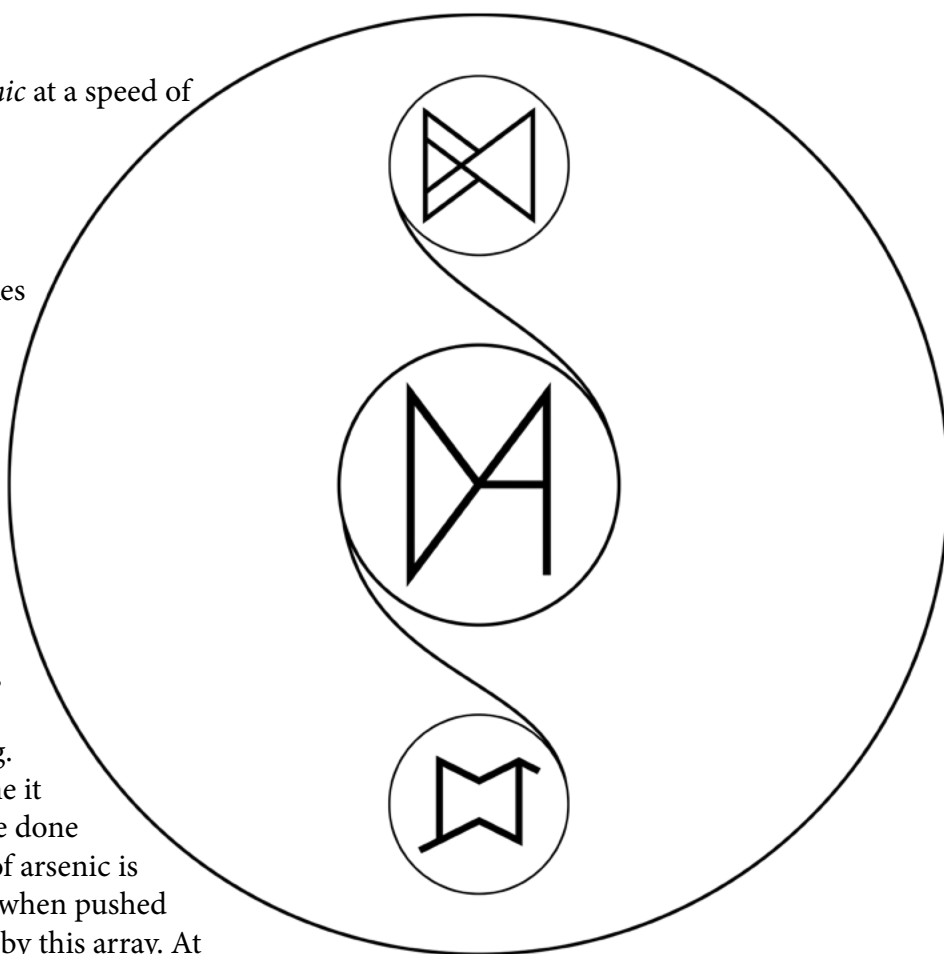
NOTATION

Create and Push Arsenic at a speed of 1m/s.

DESCRIPTION

Only three runes makes this a very simple array to design but is perhaps the most inhumane out of all the arrays shown in this section. At least the *Manstopper* and *Blood Drinker* will kill you quickly. Arsenic won't. Whether it's put on a blade bullet, this array is designed to be inside a human being. No matter how little time it spends there, it will have done it's job. 300 milligrams of arsenic is a lethal dose, especially when pushed forcefully into the body by this array. At such doses, and beyond (easily achieved if this gets stuck in the body), symptoms appear within 30 minutes and include confusion, dizziness vomiting and diarrhea. Then comes convulsions, cramps, pigmentation colouring, blood in the urine, hair loss, troubled breathing, immense pain all before collapsing into a coma 24 hours later and dying not long after.

When you need to be 100% sure he's dead, when you don't have the time, when you need that peace of mind, you turn to the *Peace of Mind*. There is no real cure for arsenic poisoning, so you can be safely assured that it only takes one hit to be lethal. The best cure you can hope is to stick something inside the fresh wound with a Pull-Arsenic array and pray to whatever gods you believe in that it got most of it out. The Peace of Mind has always been a favourite of the poor and downtrodden as the effects of arsenic poisoning does somewhat mirror diseases such as cholera



and may go unnoticed for some time if the dose is low enough. It's safe to say that there is no good use for this array other than killing someone. If the constables find this array on you then it is an automatic gaol sentence. No trial, no jury. This is precisely that serious.

QUICKSILVER METTLE

NOTATION

Transmute Human into Mercury if Human Blood is present and Contain that transmutation.

DESCRIPTION

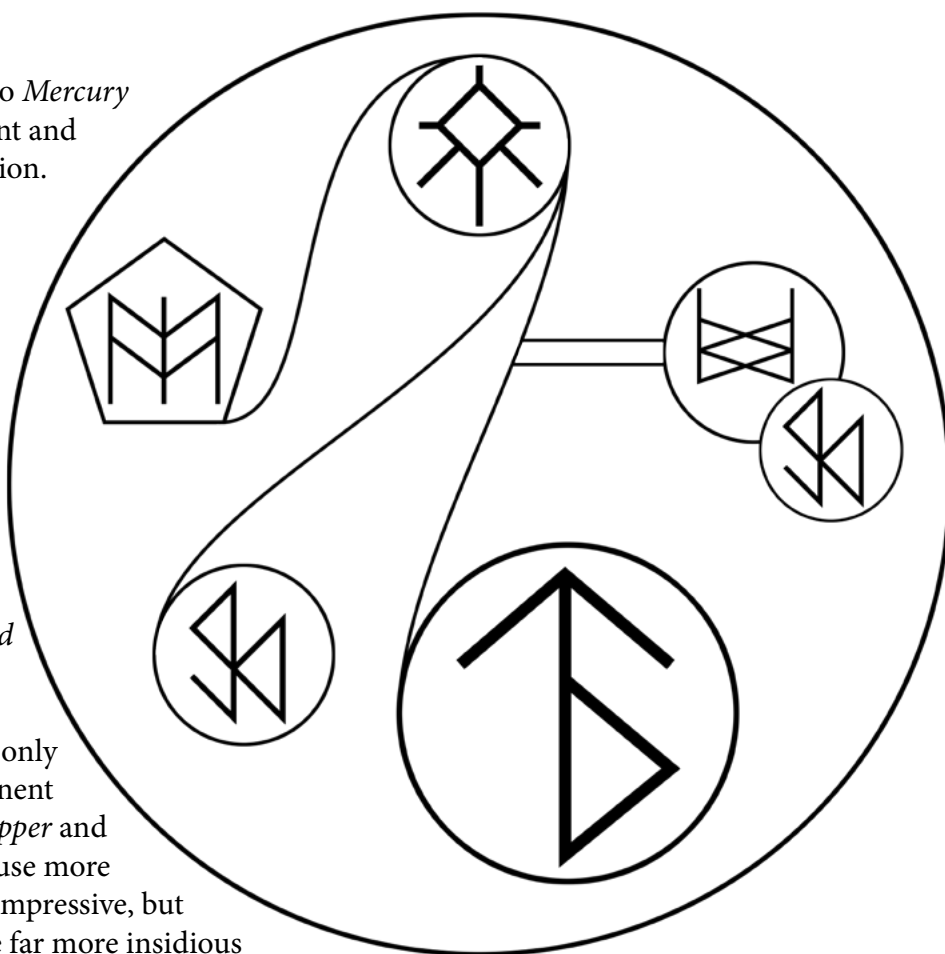
Ever saw a man bleed silver? It is as painful as it sounds. The *Quicksilver Mettle* array falls under the broad category of “poisonous” arrays along with the likes of the *Crypt’s Breath* and *Peace of Mind* arrays. These arrays are much more lethal than most arrays in that they only need to scratch an opponent to be lethal. The *Manstopper* and *Hatchling* arrays may cause more damage and look more impressive, but the poisonous arrays are far more insidious threat.

Where other poisonous arrays use arsenic, this array, as its name implies, uses mercury and this is for two purposes. Mercury poisoning is a slower death sentence than that brought on by arsenic, and it is one that you know is coming. Gang members, warlords and politicians are often found shot with rounds inscribed with this array as it sends a powerful message to those left alive. Mercury poisoning begins with a terrible itch as if live insects are crawling under your skin. The itch never stops, no matter how much you scratch. Then comes the swelling, the skin and hair discolouration and skin peeling. This progresses to sweating, increased heart rate and blood pressure, hair and teeth falling out, before the mercury begins attacking your liver and your stomach starts bloating and your eyes turn yellow.

That is not the worst, however. The worst is the madness. There is a reason they say

someone is “as mad as a hatter”. Hatters use mercury in felt production, and they all lose their minds eventually. So do victims of the *Quicksilver Mettle*. That is why this array is used. It’s all about sending a message. And that is also the second characteristic of this array: the silver blood. It’s not truly blood, and it’s not truly silver. It’s simply the mercury leaking out through the bullet hole. But it sends a message to the victim. It tells the victim that they will die in pain and madness.

It’s all about sending a message.



SCULPTOR

NOTATION

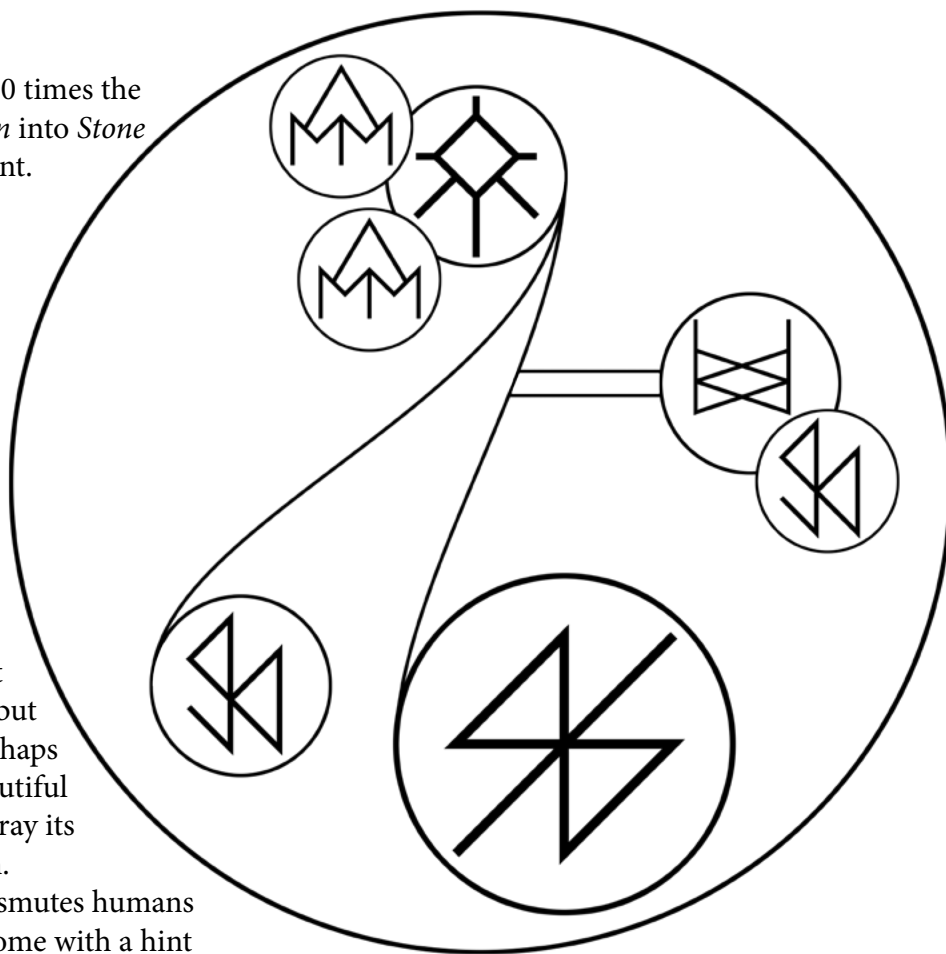
Transmute, an area 200 times the area of the array, *Human into Stone* if *Human Blood* is present.

DESCRIPTION

Not everyone can be a sculptor in the styles of the Great Masters of old, but with the *Sculptor* array, you no longer have to have any artistic talent to create the most lifelike of sculptures. It is perhaps one of the most straightforward arrays, but it is the effect that is perhaps more terrifying and beautiful that has garnered the array its controversial reputation.

The array simply transmutes humans into stone, but it does come with a hint of safety feature: it requires the presence of human blood to activate. This ensures that the array doesn't accidentally turn any human nearby into stone at the wrong time. This array is also meant for pistol and musket rounds, so you don't want it to activate while it is still in the barrel of your own pistol and musket. Much better that it activates only when inside someone else.

This array is specifically meant for pistol and musket rounds and that is why the area of affect is so large: because pistol and musket rounds are so small. You can always of course use this array as a trap, drawn to any size you want, all you have to do then is adjust the size runes as needed. In fact, the old emperors, or Shāhanshāhs, of Tanfakech use to be turned to stone sculptures by using this very array.



SPLINTER

NOTATION

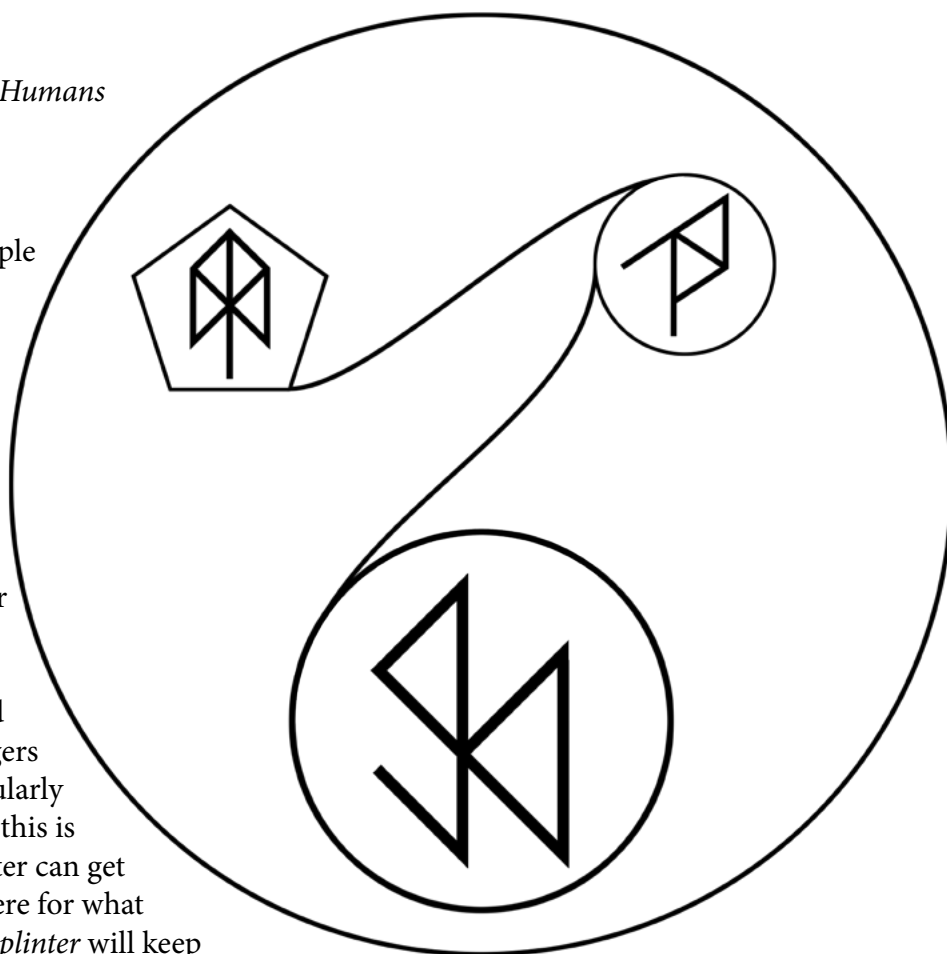
Sustain the Pulling of Humans

DESCRIPTION

The array is fairly simple to understand, but the ingenuity comes not from its design, but from its use. The *Splinter* is meant for projectiles, but specifically enough: projectiles that aren't bullets. It is designed for arrows, crossbow bolts, throwing knives and daggers, blow darts, and perhaps even push daggers if you are feeling particularly devious. The reason for this is because just like a splinter can get under your skin stay there for what seems like forever, the *Splinter* will keep these projectiles stuck inside the body by pulling on the flesh around it.

That is why it isn't quite the right array for bullets. Bullets are already lodged deep inside the body, by having them fixed in there with the *Splinter* array will only become an irritation after battle, when the outcome will have already been decided. The purpose of the *Splinter* is to irritate, distract and encumber your enemies by having arrows and knives and whatnot be stuck in them and not being able to pull them out. The arrow shafts and knife handles sticking out of your enemies will make movement all the more difficult, and that movement will cause the projectile inside to be moved around, causing even more pain.

Theoretically, all this distraction and pain will give you more than enough time to finish off your enemies. However, if you are particularly feeling diabolical, you can always add an extra array onto whatever projectile you are using. The *Splinter* will hold the



projectile inside your enemies more than long enough for you to create nearly any effect inside them.

TERMINATOR

NOTATION

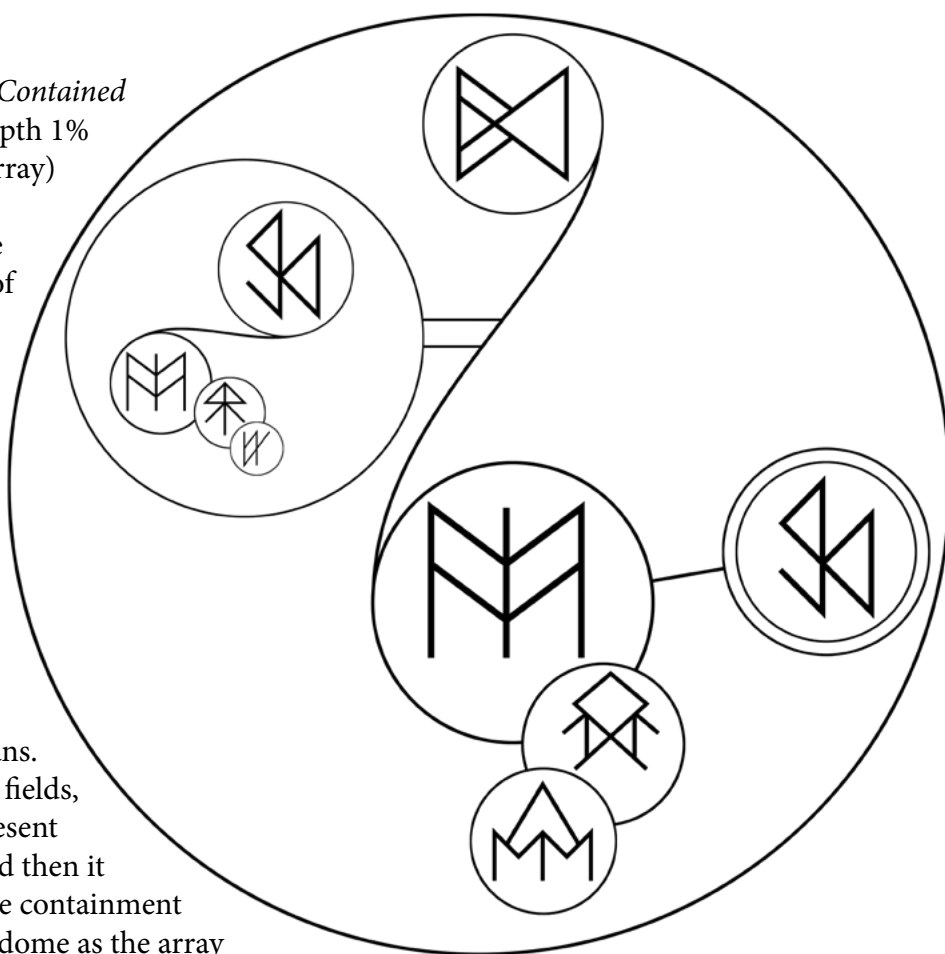
Create (if a Human is Contained within a Circle with a depth 1% the surface area of the array) a *Containment Field* in the shape of a *Dome* one hundred times the size of the array's surface area that excludes Humans.

DESCRIPTION

The *Terminator* does exactly what the name says: it terminates, humans specifically. It does this by creating a very large containment field that excludes humans. As with all containment fields, if a human is already present when it is being excluded then it will be disintegrated. The containment field is in the shape of a dome as the array will be carved three times on the musket or pistol ball, to ensure better coverage and to make the final shape of the effect as close to a sphere as possible.

This sphere will be roughly 1 metre in diameter. This means that wherever a Terminator bullet hits you, everything within half a metre will be destroyed in a blink of an eye. As long as you don't hit someone's hand or foot, you are almost guaranteed that the containment field will overlap either their torso, head or a major artery. It takes a miracle for someone to survive this.

You might be wondering "Why not a 2 metre diameter? Surely that will always make sure they're dead", and there is a very good reason why it isn't that big: collateral damage. The array doesn't destroy humans, it creates a containment field that destroys humans. A fine but important distinction as the containment field doesn't stop at the extremities of the person being shot, it keeps



going until it hits its 1 metre barrier. This means that if you are standing right next to someone that got hit by a Terminator, you could very well be terminated yourself.

For something so violent and deadly, the *Terminator* surprisingly enough comes with a safety feature. Much like the *Constable's Friend* array, this array will only activate if a human is within a very thin containment field on the array. This means that you can pick up a *Terminator* bullet or arrowhead and as long as you are wearing gloves then the array won't activate. You don't want to accidentally terminate yourself.

WALKING BOMB

NOTATION

Transmute Human, of a size one hundred times that of the array, into *Stone*; and push *Stone* at a speed of 64 m/s

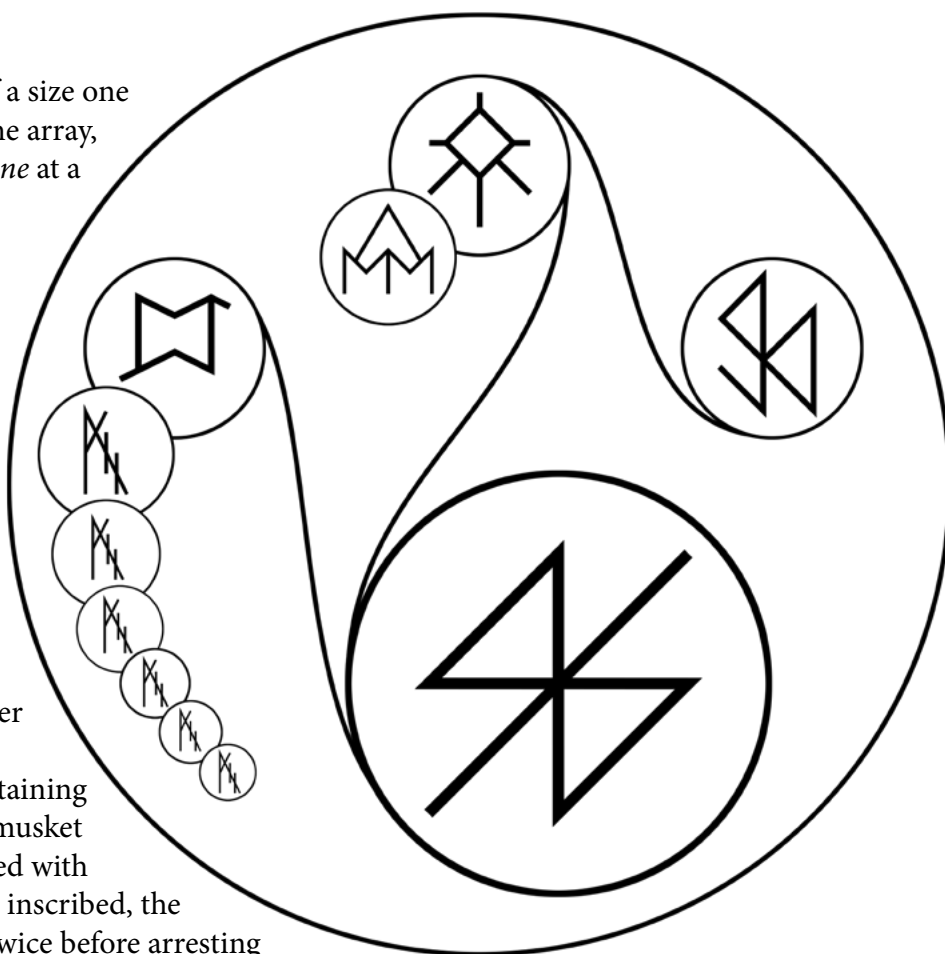
DESCRIPTION

By just looking at the array, you can immediately see why the constabulary of Middelburg have taken such a dim view of the *Walking Bomb* array. The name alone tells anyone that this array wasn't made for any other reason than for murder, except perhaps an entertaining execution. If you carry musket or pistol rounds inscribed with the *Walking Bomb* array inscribed, the constables won't think twice before arresting you.

The danger, and effectiveness, of the *Walking Bomb* comes not from transmuting human flesh into stone, but rather from the runic explosion that comes afterward. Turning a human into stone will kill them regardless of the *Push* rune in the array or not. The *Sculptor* array does this quite well. The true malice, or genius depending on who you ask, is that *Push* rune. By pushing the newly created stone so quickly, and from inside that very stone, the array creates an explosion.

The speed of the force rips apart the ex-human statue and flings it at everyone in the vicinity at a speed of 64 metres per second, or 230 kilometres per hour. This array was not created to kill only one person, it was designed to kill a room full of people.

As with all violent arrays there are some safety features built in. The *Gargantuan* rune modifying the *Transmute* rune means that there is an energy threshold that needs to be



reached before the array activates, a threshold the energy from a musket and pistol won't reach. This ensures that the array doesn't turn your arm into a stone bomb as you fire the round. The *Quicken* runes modifying the *Push* rune works in the same way. This also ensures that the round goes into the victim's body first before activating, causing maximum damage.

ARMOUR OF LIGHT

NOTATION

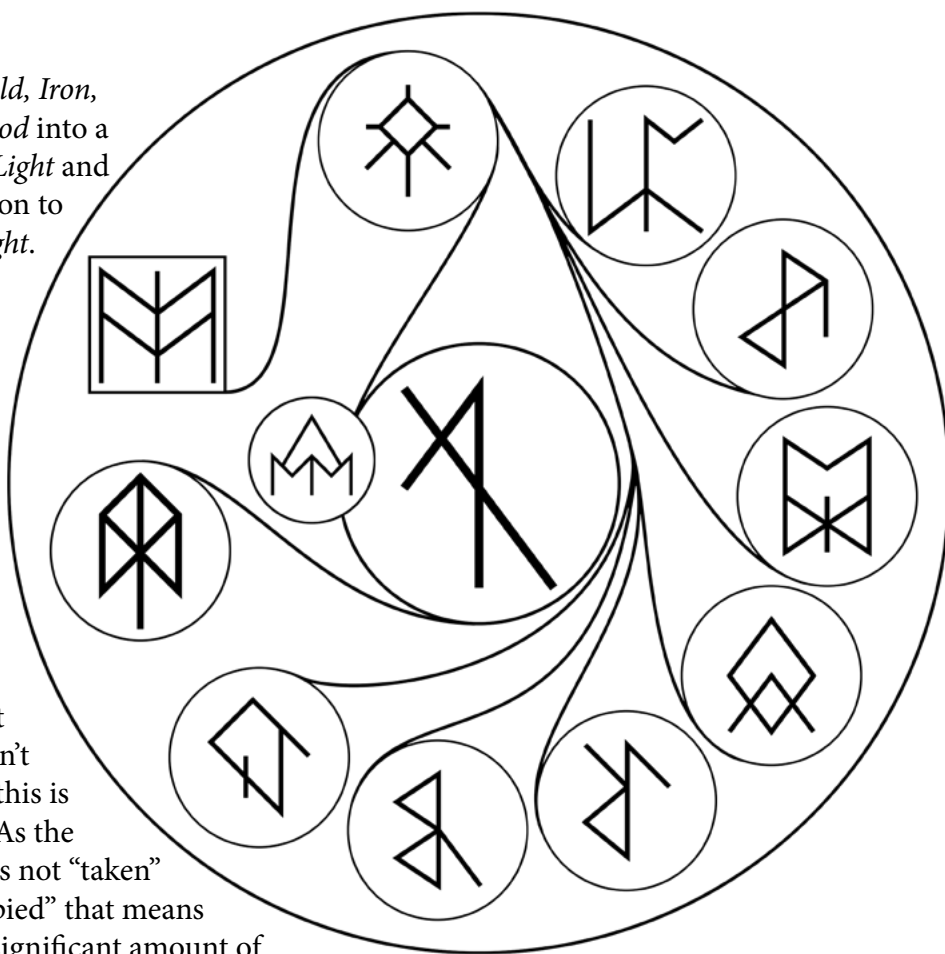
Transmute Copper, Gold, Iron, Lead, Silver, Tin and Wood into a Gargantuan amount of Light and Contain the transmutation to the array. Sustain the Light.

DESCRIPTION

A derivative of the *Middelburg Standard*, although instead of disintegrating and then preventing materials from penetrating the array, this array transmutes materials into light. The end result is the same, materials can't penetrate the array, but this is more of a risky gambit. As the energy from an impact is not "taken" by the array, merely "copied" that means that there will still be a significant amount of energy hitting the array. Not all the energy, as the transmutation will be nigh instantaneous, but enough that repeated hits will damage whatever the array is made from.

There are a few things to note. While the transmutation is contained, the light itself is not. This means that the light will still originate from within the array boundary even though there is a gargantuan amount of light being created. If you would contain the light, it will contain all light not just what is being created, meaning no light would escape and you would just see blackness. By using the *Contain* rune in this way, you are getting around this problem.

The amount of light that is produced will vary depending on the size of the array as the Light rune creates 1 lumen per cm². 1 lumen is roughly the amount of light produced by a candle in a straight line. For practical purposes, assume that the clothing



and armour worn by the enemies you meet are completely covered in Armour of Light arrays that are 1cm in diameter. This means that each array has a surface area of 0.79cm² which equates to 0.79 lumens that a Light rune would normally produce. However, as a *Gargantuan* rune increased the effect a 100 fold, it would be the equivalent of an area size of 7,853.98cm² or ~7,854 lumen confined to that 1cm diameter array. To give you an idea of how bright that is, a normal household 100 watt incandescent light bulb gives off 1,600 lumens. The *Armour of Light* effectively creates a spotlight.

As GM, don't worry about the lumens if you don't want to. You don't have to tell your players how many lumens they are looking at. It's bright, very bright, blindingly bright. That's the take home message. The math can be done, but it is not to be placed before the narrative.

FLAME WARD

NOTATION

Transmute Copper, Gold, Iron, Lead, Silver, Tin and Wood into Fire and Push the Fire at a speed of 4m/s. The Fire excludes Water.

DESCRIPTION

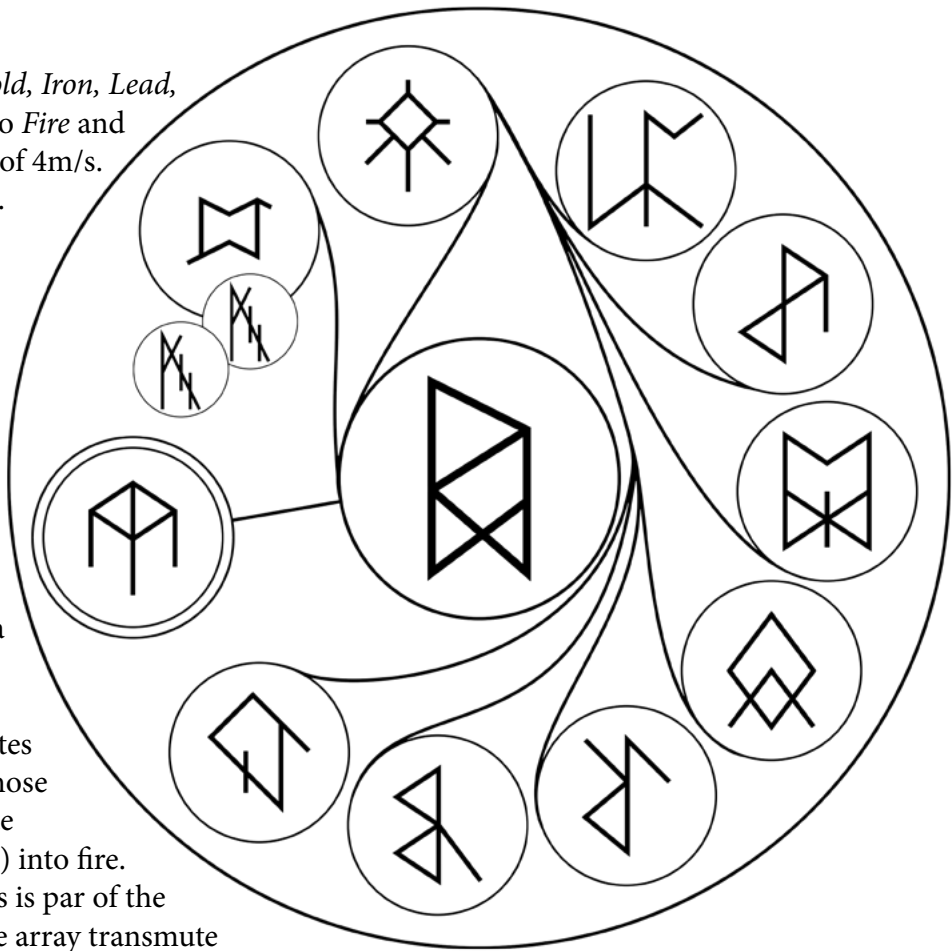
An unsubtle name for an unsubtle array. The *Flame Ward* array takes the idiom of “a best defense is a good offence” to heart and makes every attack on the bearer of this array a lethal risk.

At its core, it is a very simple array. It transmutes a variety of materials (those most often used to create weapons and projectiles) into fire. As a defensive array, this is par of the course. You can have the array transmute the materials into air, light, sound, water and it will protect you just as well. The *Flame Ward*, as its name implies, has a specific use for the fire and that is to fling it back at the enemy.

After the materials have been transmuted into fire, this fire is then pushed away from the array at a speed of four metres per second. This shows how this array was meant to be used on shields for melee combat, since if you are within striking distance of a person, you are definitely within four metres and that means a ball of flame will take less than a second to make it back to you.

For ranged combat, this array is less than ideal. Over any significant range, the fire will take far too long and will die out before it hits the attacker, although a skilled user might be able to angle to fire to a closer enemy. At the very least, the array will still protect you from incoming projectiles.

The other unique bit about this array is that the fire excludes water. This means that



while the fire is inside the array's area of effect, it cannot touch water. Not useful until you remember that this means that water cannot touch it either, meaning it is unquenchable as long as the fire remains inside the array's area of effect.

MIDDELBURG STANDARD

NOTATION

Create and Sustain a Circular Containment field that is twice as Large as the array's area size that Excludes Wood, Silver, Copper, Lead, Iron and Gold.

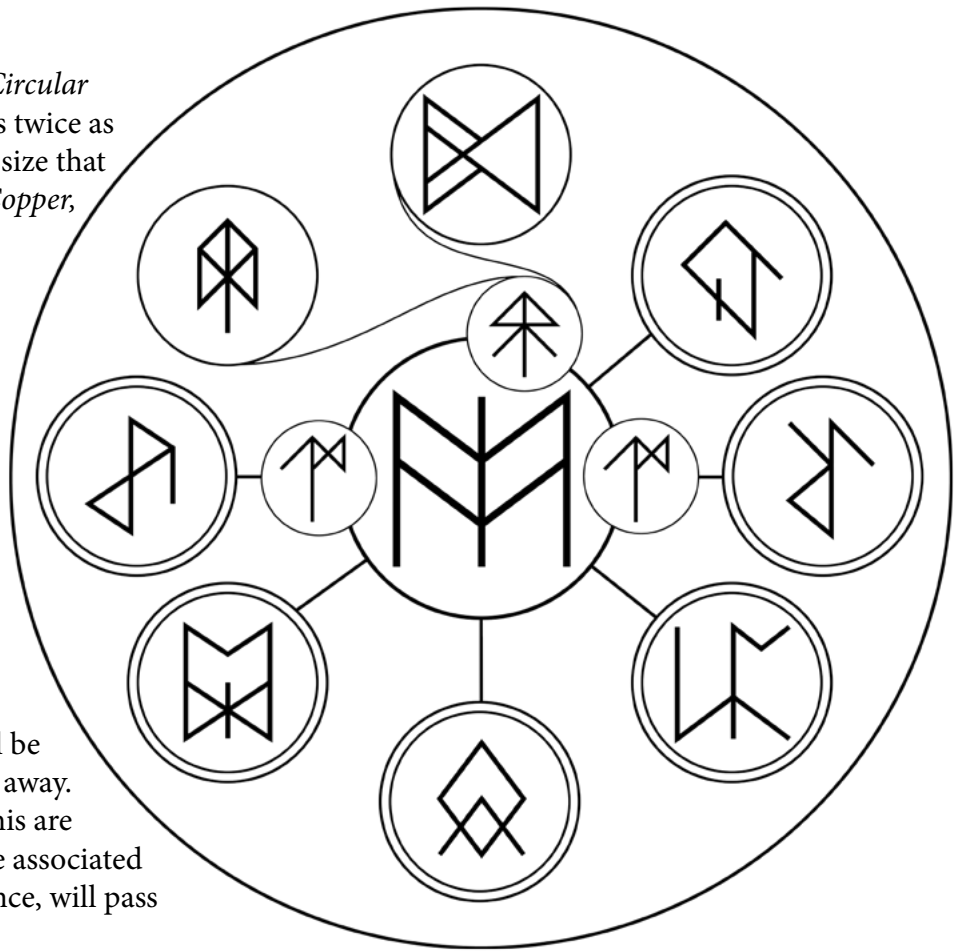
DESCRIPTION

The only purpose of this array is to act as a shield. It creates a containment field in which the listed materials can't exist, which means that if a bullet, blade, arrow or anything else tries to go through the array, it will be stopped a hair's breadth away. The only limitation to this are materials that don't have associated runes. Bronze, for instance, will pass straight through.

Also note that there are size runes on this, which means that there is a (small) threshold of energy that needs to be reached before the array will activate. For this reason, these arrays are usually sewn quite small onto clothing and scattered across the article of clothing so that the threshold is equally small.

Like many other things in Alfresia today, the Middelburg Standard found its inception in the tumultuous times of the War of Independence. A very simple array that can be drawn fairly quickly, the *Middelburg Standard* saw widespread use among the citizen militias that fought tooth and nail to defend Alfresia.

In the hundred odd years since the war, the *Middelburg Standard* has seen little change to its overall structure as it has been as successful in recent times as it was a hundred years ago. What minor changes have been made to it have been in what materials it excludes, as the ever continuing arms race between offensive



and defensive arrays means that every man and woman is looking for that certain something to put them ahead of the rest.

Whatever the latest fashion may be, however, the people always return to the Middelburg Standard at the end of the day, making it the most widespread defensive array in the city.

SAVING GRACE

NOTATION

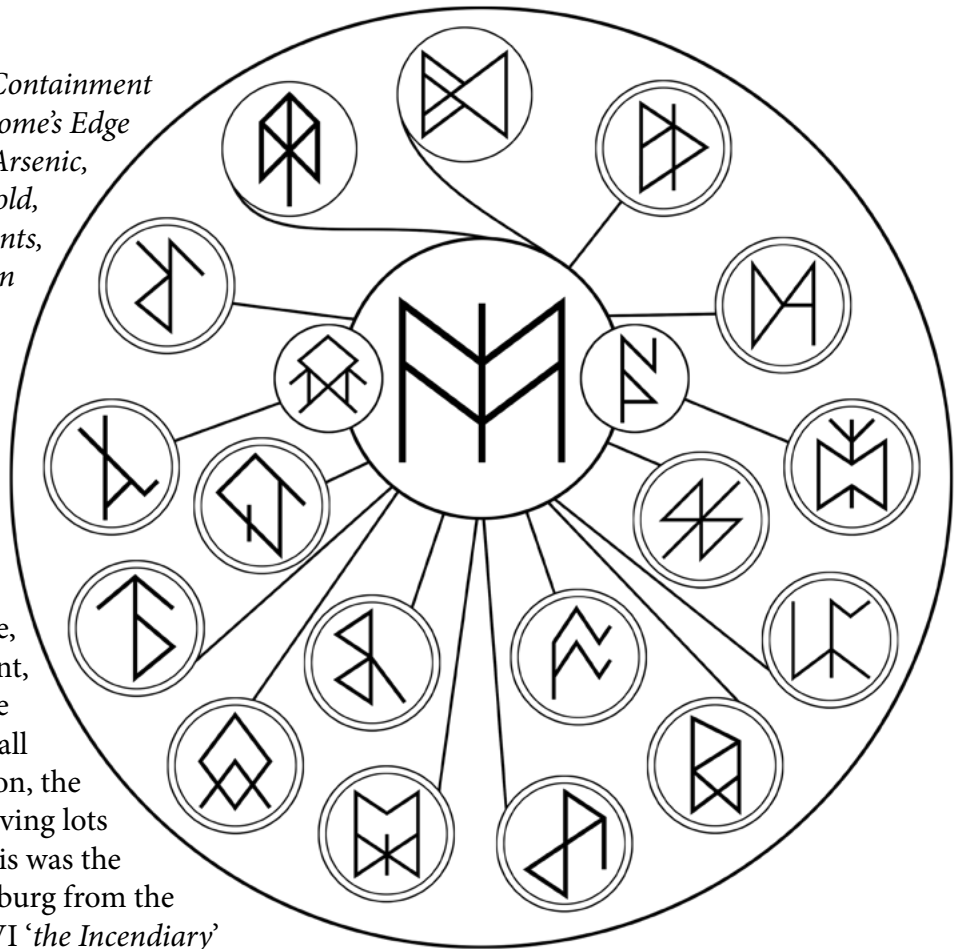
Create and Sustain a Containment field in the shape of a *Dome's Edge* that excludes *Animals, Arsenic, Carbon, Copper, Fire, Gold, Iron, Lead, Mercury, Plants, Silver, Stone, Sulphur, Tin* and *Wood*.

DESCRIPTION

At first glance the *Saving Grace* may seem like a supercharged *Middelburg Standard* array and that is because, from a certain standpoint, it is. However, where the *Middelburg Standard* is all about personal protection, the *Saving Grace* is about saving lots of people all at once. This was the array that saved Middelburg from the wrath of King Markus VI 'the Incendiary' during the Alfresian War of Independence. It was carved across the city so that the dome would encompass nearly everyone inside and once it was up, almost nothing could go in or out. The Alfresians sealed themselves off to protect themselves.

Of interest in this array is the use of the *Shell* rune. What this rune does is create a wall around the edge of the containment field and restricts the effects of the array to that wall. If this was not the case, the effects would happen inside the entire domed containment field, and seeing as it excludes almost everything, it would disintegrate everything inside it. With the *Shell* rune, you can stay safely inside the containment field without it harming you.

Of course, it can't stop everything. By necessity air and water is allowed through, but all those things that the runes and array can't target can come through, like bronze. As an alloy, the runes and arrays can't target bronze and for this reason most of the musket



and cannon balls fired during the war for Middelburg were made of bronze. However, this had to be done from a distance as the *Saving Grace* array excludes animals, and humans are animals.

THE PROPHET'S BLOOD

NOTATION:

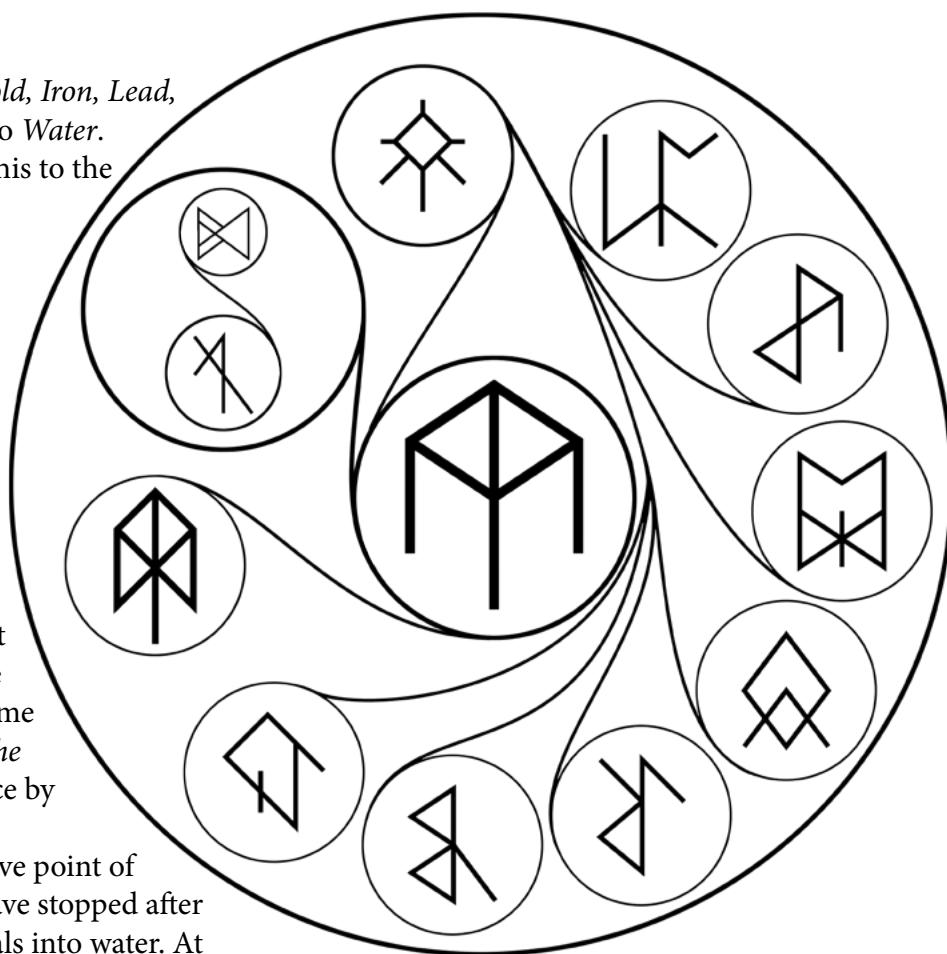
Transmute Copper, Gold, Iron, Lead, Silver, Tin and Wood into Water. Create Light and apply this to the transmuted Water.

DESCRIPTION:

The other side of the coin of the *Flame Ward*. Other than the opposite elemental natures of the *Flame Ward* array and *The Prophet's Blood* array, there is also a significant thematic difference. The *Flame Ward* is the epitome of defence by offence. *The Prophet's Blood* is defence by unyielding will.

From a purely defensive point of view, this array could have stopped after transmuting the materials into water. At that stage whatever needs protecting has been protected. Other than a clever technical use of the array, the secondary array that creates light plays a vital psychological role in the defence that this array creates. The secondary array simply creates light, but by applying this effect it means that all the water in the area of the array's effect creates light. This in effect means that this array creates glowing water.

At first glance, creating glowing water may not seem at all to be much of a psychological advantage, but have a second think about it. Imagine that you have just been shot and rather than seeing blood spurt out (or noticing anything at all because your *Middelburg Standard* saved you) you see a patch of brightly glowing liquid. You know for a fact that your life had just been saved, you know your arrays work and you know the enemy just wasted a shot. If you were of a religious persuasion, you might also see it as your divinity of choice literally taking a bullet or



blade for you. I would say that would put a spring in any man's step.

As to your opposition, the psychological effects depend entirely on being ignorant of *The Prophet's Blood*. If you didn't know this array existed you would see a man you just shot bleeding light. You don't even have to be of a religious persuasion to see this as something supernatural, something otherworldly. It would be even more of a fright if this enemy expected this to happen and is even glad to see it. What sort of monster would be glad to see itself glowing blood? More than one man in Middelburg has thought that discretion is the better part of valour after shooting someone with *The Prohphet's Blood*.

ANGEL WINGS

NOTATION

Float a Human and *Push* said Human at a speed of 1 m/s, contain both the *Float* and *Push* effects to the circumference of the array.

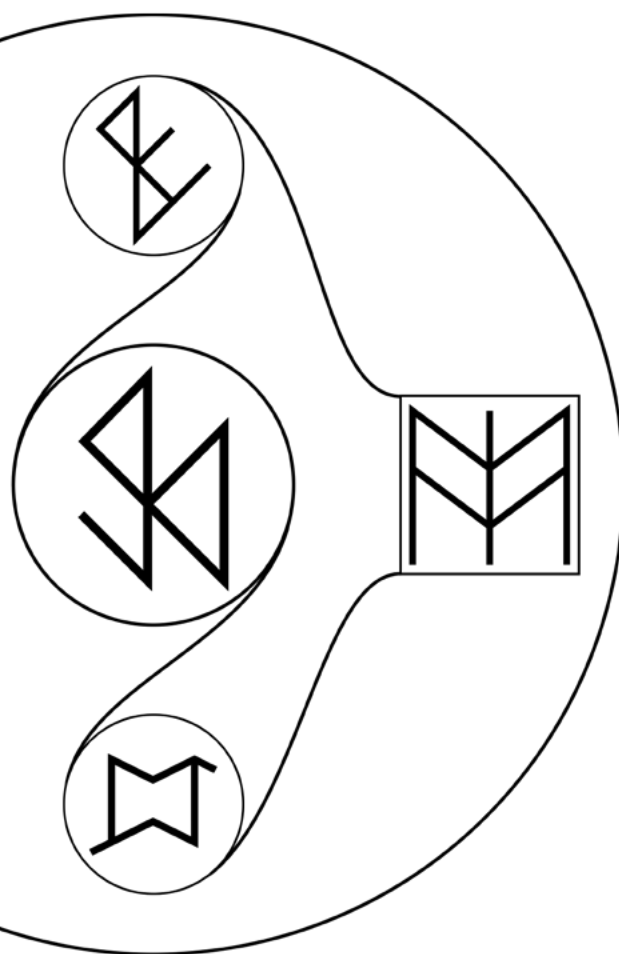
DESCRIPTION

It's straightforward and simple to draw and this is for a very good reason: the *Angel Wings* array is used most often by criminals to escape pursuit. Whether you're going up or down, the *Angel Wings* is there to make sure you do so safely.

The array works quite simply, it removes the effect of gravity from a human (only a human, not their clothes or equipment or anything else they're carrying) and pushes said person at a speed of one metre per second away from the array. To make sure this 'pushing' is only in one direction, the effect is contained, along with the gravity nullification, to the array; so it can't affect anything outside the array.

In short, this works like a lift or elevator and a gentle one at that. One metre per second isn't very quick, it's only walking pace, but that is all part of the plan. The *Angel Wings* is not meant only take someone up, but bring them down again too. Anything falls at a rate of 10 metres per second squared, so if you happen to fall over this array it will slow you down at one metre per second so you can, hopefully, hit the ground running.

To help you go up quicker if you are in any hurry, the *Float* rune negates gravity from humans, this means that (excluding any clothing or equipment you're wearing) you are weightless, so you can easily pull yourself up along any building you're trying to scale with



that added push from the *Push* rune.

Also note that the *Contain* rune is not linked the *Human* rune, only the *Push* and *Float* runes. This means that you can "get off the elevator" whenever you want to.

BLESSED SOLITUDE

NOTATION

Create a *Containment Field* in the shape of a wall twenty times as large as the array's diameter that excludes *Sound* if there is *Sound* present.

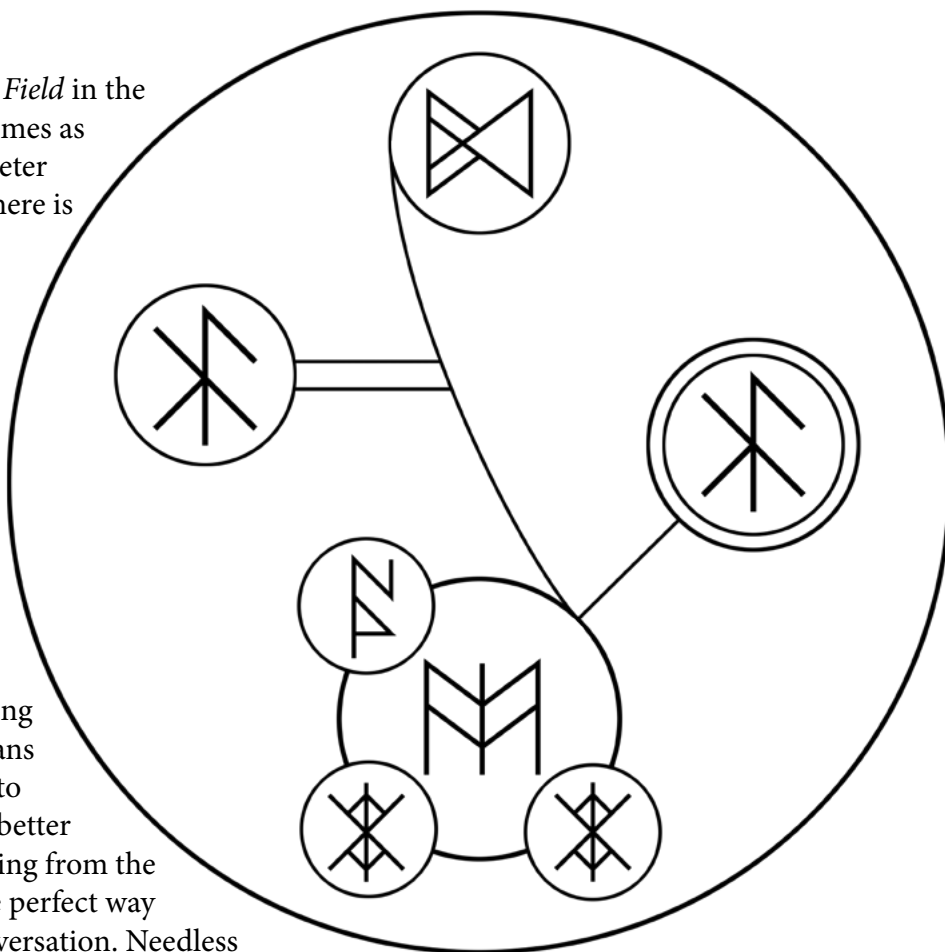
DESCRIPTION

The Middelburg version of the *Cone of Silence*. All you need is a little disk (say about 10cm in diameter) inscribed with this array on the floor, or table, between you and whomever you are sharing your secret plots and plans and no one will be able to eavesdrop on you. And better still, you won't hear a thing from the outside, making this the perfect way to have a nice quiet conversation. Needless to say, many in the criminal underworld, and politicians (as if there is a difference), use this as often as any other array.

One thing to note is that this array only excludes sound if there is sound. You might think "well there is always sound, so it will always be on" and to a degree you will be right. However, if it simply excluded all sound all the time, it would simply be as if you are in a soundproofed room. No sound would be able to enter through the containment field, but the sound created inside would simply bounce off the invisible wall around you echo endlessly inside.

By making the containment field appear only when there is sound means that it will constantly flicker on and off faster than the eye could see (if the eye could see an invisible, intangible wall) destroying each little bit of sound as it passes through. So no echoes and a much more pleasant conversation.

Always remember to keep a good eye on



your surroundings when using this array. No one can hear you, but you also can't hear anyone else. It's all too easy to sneak up on someone using this array, so be careful.

CARTRIDGE IGNITION

NOTATION

Top array: *Create Fire* if *Copper* is present and *Send* the *Fire*. *Contain* the *Sending*.

Bottom array: *Receive* the *Fire* and *Push* it at a speed of 1 m/s

DESCRIPTION

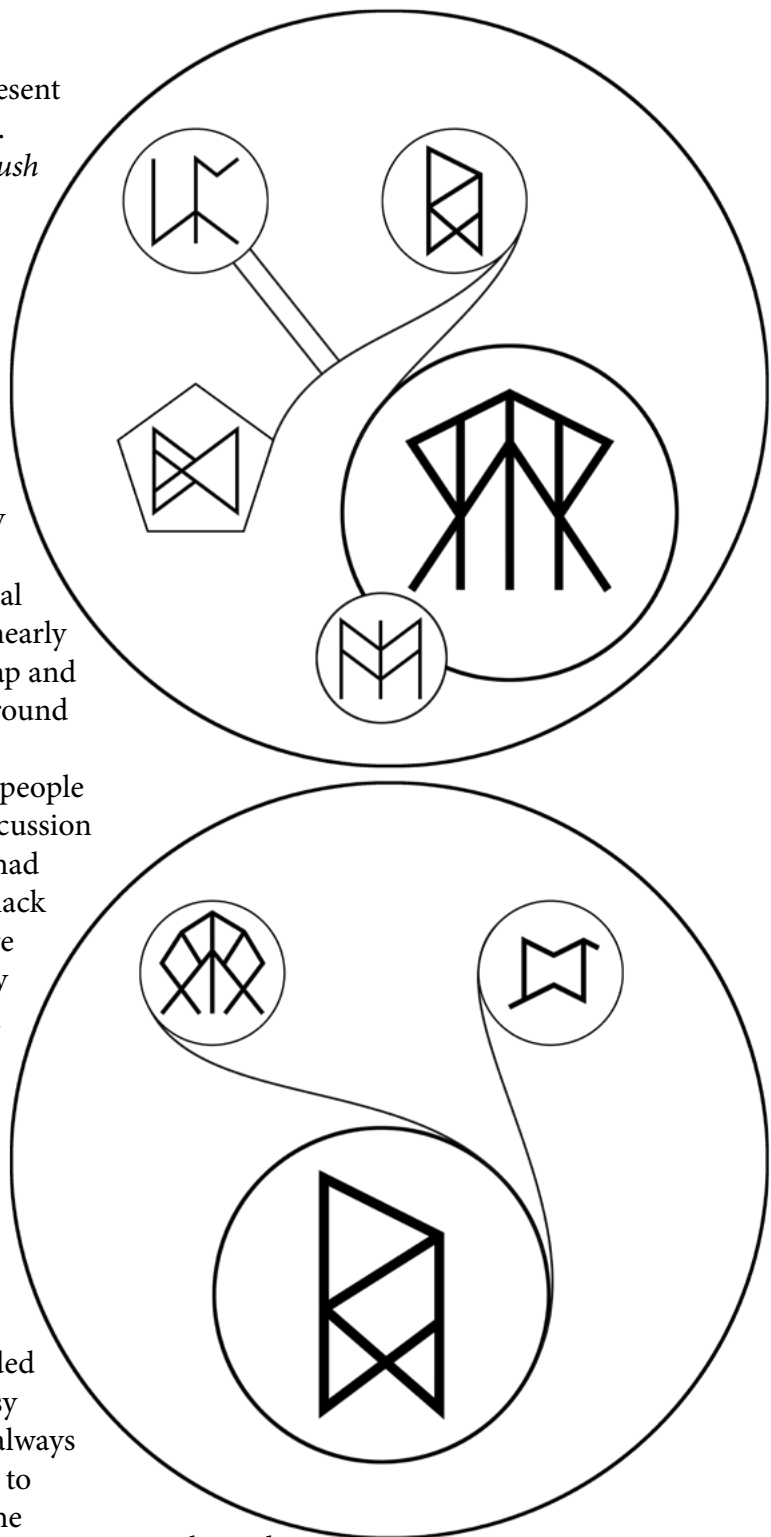
If the arrays didn't give it away, the name most definitely did. These arrays can be found on firearm cartridges and are responsible for igniting the black powder in the cartridges, thereby propelling the pistol or musket balls out of the barrel at a, hopefully, terminal velocity. You will find these arrays on nearly every cartridge in Middelburg, it's cheap and reliable and will therefore be staying around for quite a long time.

Because of the runes and arrays, the people in the Runed Age never developed percussion or priming caps. Because of this, they had to get creative with how they ignited black powder. The earliest runic primers were simple arrays of *Create-Fire*, but merely the act of carrying these around would impart enough energy into the arrays to activate them. Fire was a constant risk.

It was never that big of a concern until a century ago when cartridge bullet were invented. No longer would you have to load the musket/pistol ball, black powder and runic primer separately. Now you can carry "preloaded shots" in your pocket for quick and easy reloading. Now that the primers were always attached to the black powder, they had to come up with a safety mechanism so the bullets don't ignite in your back pocket.

The *Send & Receive* arrays were the answer. By putting the *Send* array on the back of the cartridge and activating it only when copper (the firing pin) was in contact with it, there was no longer any risk of accidental ignition. The *Send* array would then send the fire

through time and space to the *Receive* array on the inside of the cartridge where it would be pushed through the black powder, ensuring an even ignition.



COACH EXPRESS

NOTATION

Cool (at a rate of 1 degree Celsius every 8 minutes) and increase the speed (by 100%) of *Animals*.

DESCRIPTION

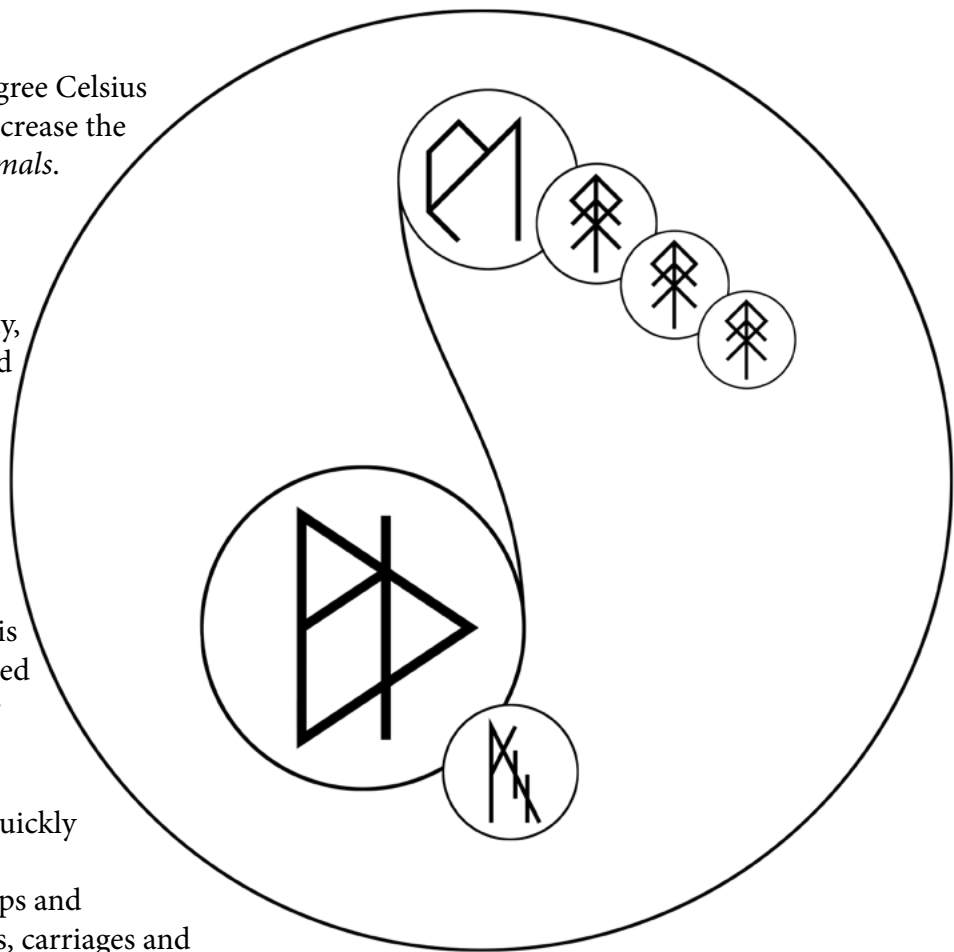
In the age of electricity, technology in the Runed Age is moving faster than ever before. The ability of electricity to quickly and conveniently transfer energy to runic arrays, which can then store this energy, has revolutionised every technology under the sun. Unfortunately, those left behind in this technological race are quickly forgotten.

In a world with airships and electrically driven trains, carriages and coaches are quickly becoming yesterday's news. The coaches and carriages have decided to fight back with an ancient array that has had some new life breathed into it.

The *Coach Express* has been in use for centuries, albeit sparingly as storing energy in an array was a time consuming affair before the advent of electricity. Now, however, you would rarely see a professional coach or carriage without one.

Simply put this array increases the speed of animals (most often horses) by 100%, meaning they move at twice their normal speed. This means that a horse at full gallop can now average 80-100 km/h. This is utterly fantastic if you are delivering goods and passengers between cities, or if you are running away from the constabulary, but it isn't so good on the horses.

On a good day, a horse at a gallop can overheat within 20 minutes. At double speed that is only exacerbated. It is for this reason



that the array also cools down the horses. If your horse dies on you because of heat exhaustion then no amount of speed will save you.

This array is also rife for modification. You can easily change the speed increase of the *Animal* rune as well as the rate at which the *Cool* rune cools the animals. This array is meant to be changed what you expect you will be facing.

CYNIC

NOTATION

Create Light if Human Blood is present.

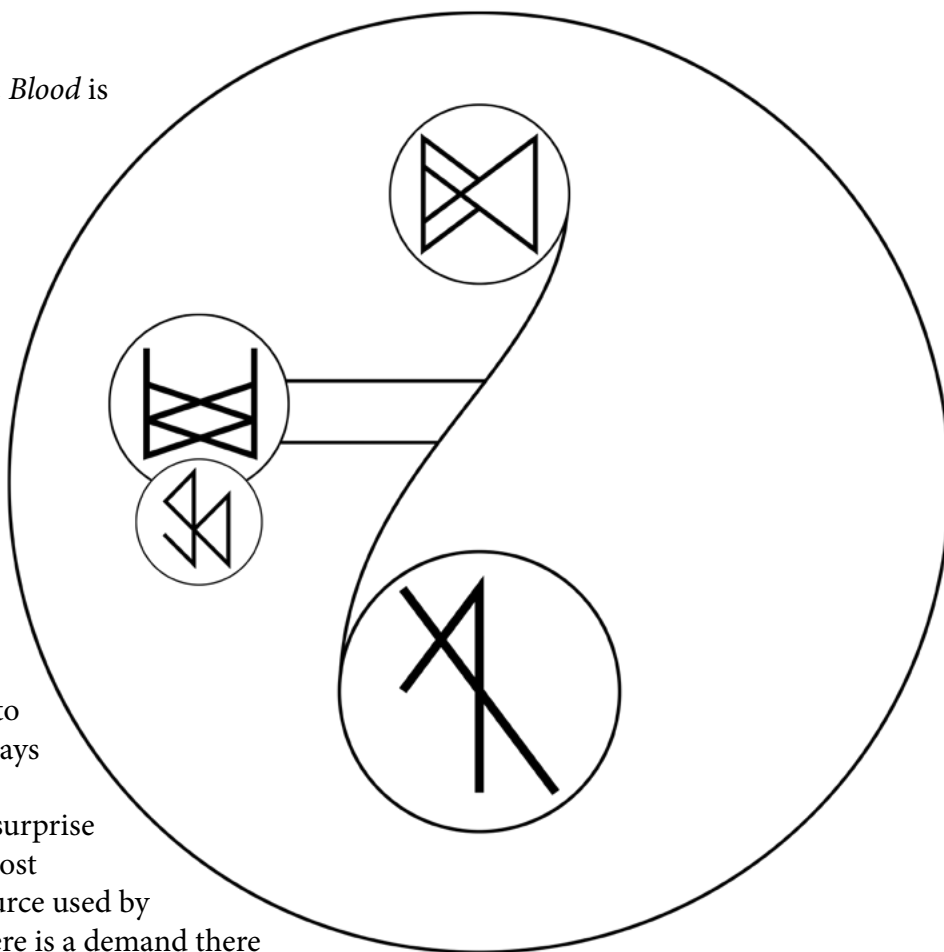
DESCRIPTION

Energy may be the most ubiquitous source of fuel for the arrays and orichalcum may be the most powerful source of fuel for them, but it is blood that is the simplest. More powerful than energy and far easier to obtain than orichalcum, blood has always been the go-to option for activating arrays quickly.

It should come as no surprise then that blood is the most commonly used fuel source used by criminals and where there is a demand there will always be a market. Blood dealers prowl dark alleys and dimly lit taverns, hawking their ill gotten wares: human blood in glass vials. Everyone knows where this blood comes from, the poor and unfortunate, but if you are the type to go to a blood dealer your only thought is that at least it's not your blood.

But where there is a market, there will always be those wishing to get all the money yet do none of the work. Human blood is easy to create with the arrays but such artificially created human blood can't power the arrays, neither can animal blood. Only pure and true human blood can. That is where the *Cynic* comes into its own. It creates light if there is human blood on it. Only human blood can activate an array, so if you put artificial or animal blood on it, it won't work.

It's simple and straightforward, and very quick to see if you have real blood with you. You don't want to be caught between a rock and a hard place, wanting to use an array to



save your life, only to find you bought pig's blood. It's safe to say then that this is an array most criminals have, most often tattooed somewhere on their arms or hands, in easy reach to sample the blood dealer's wares.

DEATH'S WHISPER

NOTATION

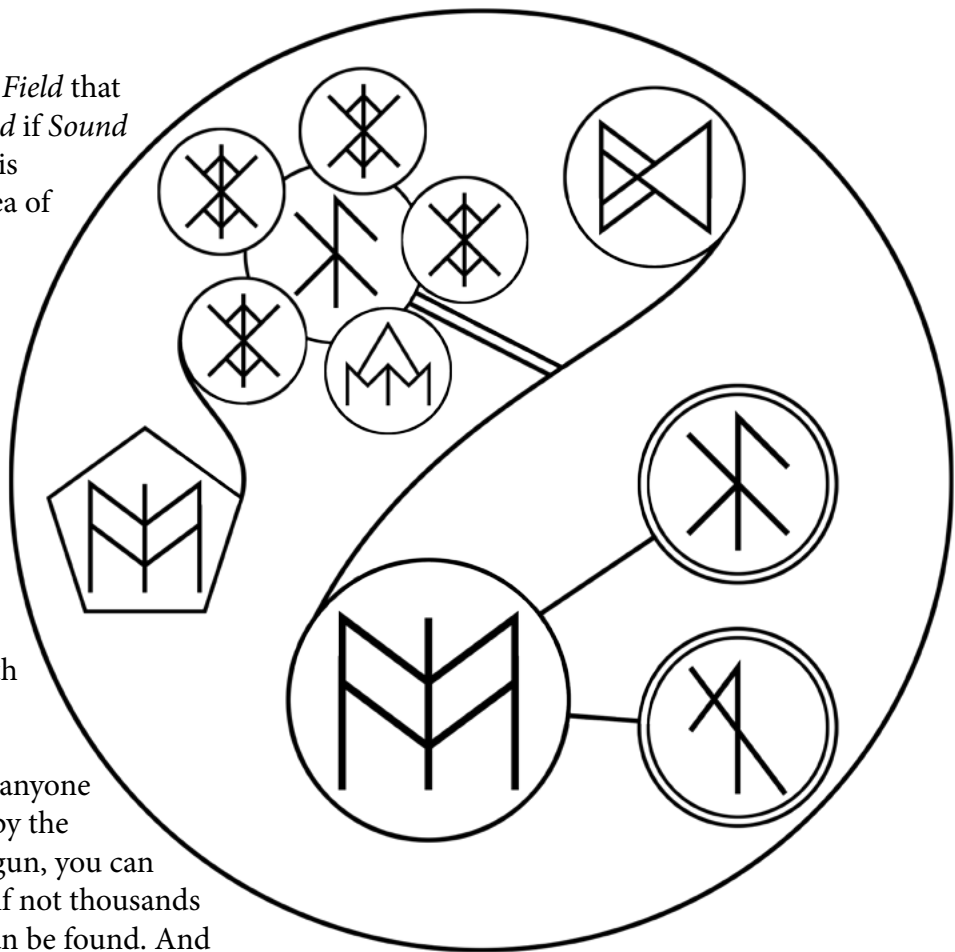
Create a *Containment Field* that excludes *Light* and *Sound* if *Sound* exceeding 140 Decibels is present in the array's area of effect.

DESCRIPTION

They say that discretion is the better part of valour and nowhere is that more true than in the metropolis of Middelburg. The city is packed to the rafters with nearly a million people crowding its streets and alleys, so any noise that anyone makes is quickly heard by the masses. If you fire off a gun, you can be sure than hundreds, if not thousands now know where you can be found. And that means the military and constabulary will not be far behind.

You have two options to get around this. The first thing you can do is to use a bow and arrows, but that is sooo last century. This is the modern age, isn't it? We have electric airships now, after all. No, what you need is a sound suppressed firearm. That is where the *Death's Whisper* array comes into play. This array is designed to be engraved inside the barrel, at the tail end, of a firearm and when activated it destroys all sound and light that passes through it. While there may still be a loud 'thud' coming from your firearm due to the sound reverberating through the metal of the barrel, the gunshot itself will be silenced and there will be no muzzle flare that can give you away in the dark.

The *If-Then* part o the array is highly specific, it only activates the array if the sound passing over the array exceeds 140 Decibels. This is for a very good reason: it means that



the array can absorb energy throughout the time it is not being used so that it is always on and working when you need to it. It takes a good deal of energy to produce 140 Decibels and nothing short of a gunshot or explosion will set it off. Remember that the *Size* runes are thresholds, meaning that anything that exceeds it will also set it off. So if a sound at 160 Decibels passes through the array it will set it off just as a sound of 140 Decibels would.

With this array in your firearms, no one will see or hear you coming. The perfect tool for the streets of Middelburg.

FIRE EXTINGUISHER

NOTATION

Pull Heat and *Transmute*, if *Fire* is present, this into *Water* that is *Contained* within an area twice the size of the array.

DESCRIPTION

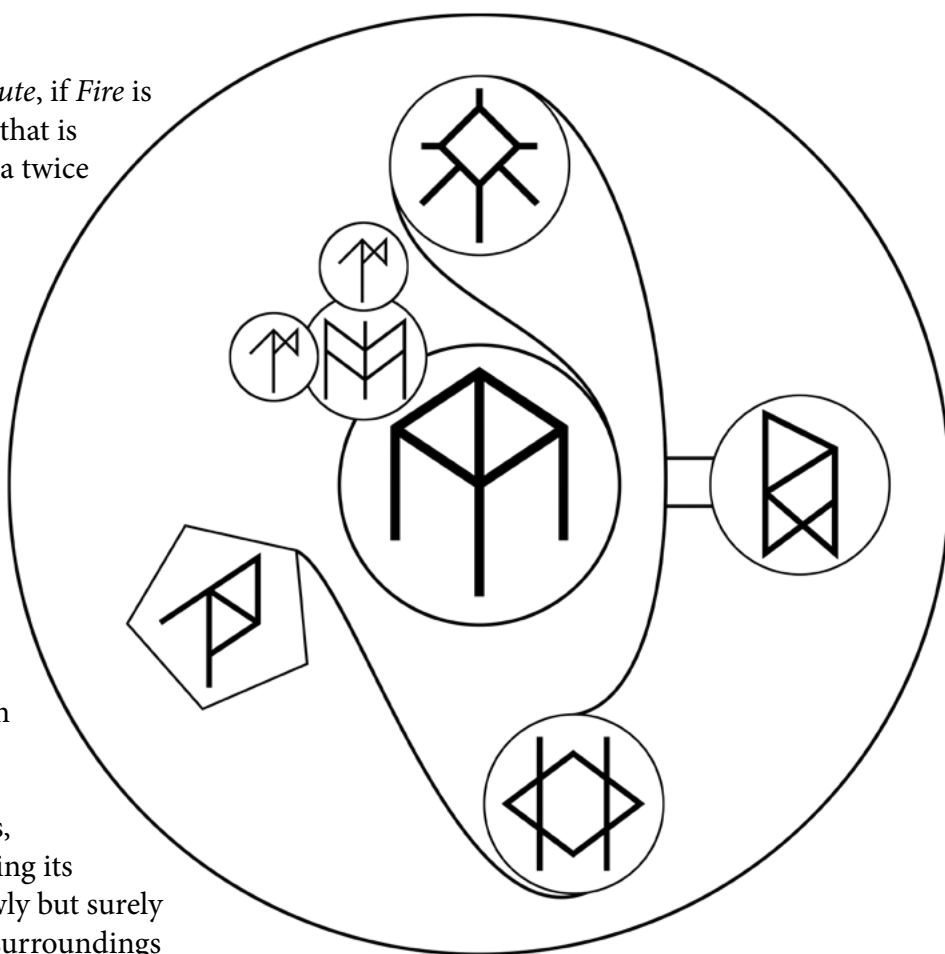
One of the many arrays that are everywhere and nowhere at once. It is an array that you will look at and then immediately forget, because it is simply part of the backdrop of the city, the world and life in general.

The *Fire Extinguisher* does exactly what it says, it extinguishes fire. During its everyday life, it will slowly but surely absorb energy from its surroundings and store it due to the If-Then statement in the array. Then, when it senses fire it will transmute the heat from that fire into water that is contained in a fixed size.

There is a reason for everything in this array. The If-Then statement as said above is there so the array can store energy before it is needed, so that when a fire erupts it can instantly douse it before it spreads.

The reason for containing the water that is being created is so that there is less of a mess to clean up afterwards but also to form a barrier to stop the fire spreading back into areas already doused. The columns of water will also serve as continual heat sinks.

If you think that by containing the water this array is limiting itself to a very small area, you would be correct. That is why you will often find these arrays completely covering the ceilings of buildings, often etched quite thinly or painted in a slightly different shade to the ceiling itself. With so many arrays on the



ceiling, the entire room will be covered should any fire erupt in there or spread to it.

The reason for transmuting water instead of simply creating it is to instantaneously reduce the heat in the surrounding area, so that while the water will douse the fire in the immediate area, the fire around it will not be as fierce. Remember that the *Contain* rune is only modifying the Water rune, not the *Heat* or *Pull* rune, meaning that the heat that is transmuted will come from as far away as necessary.

HIDE AND SEEK

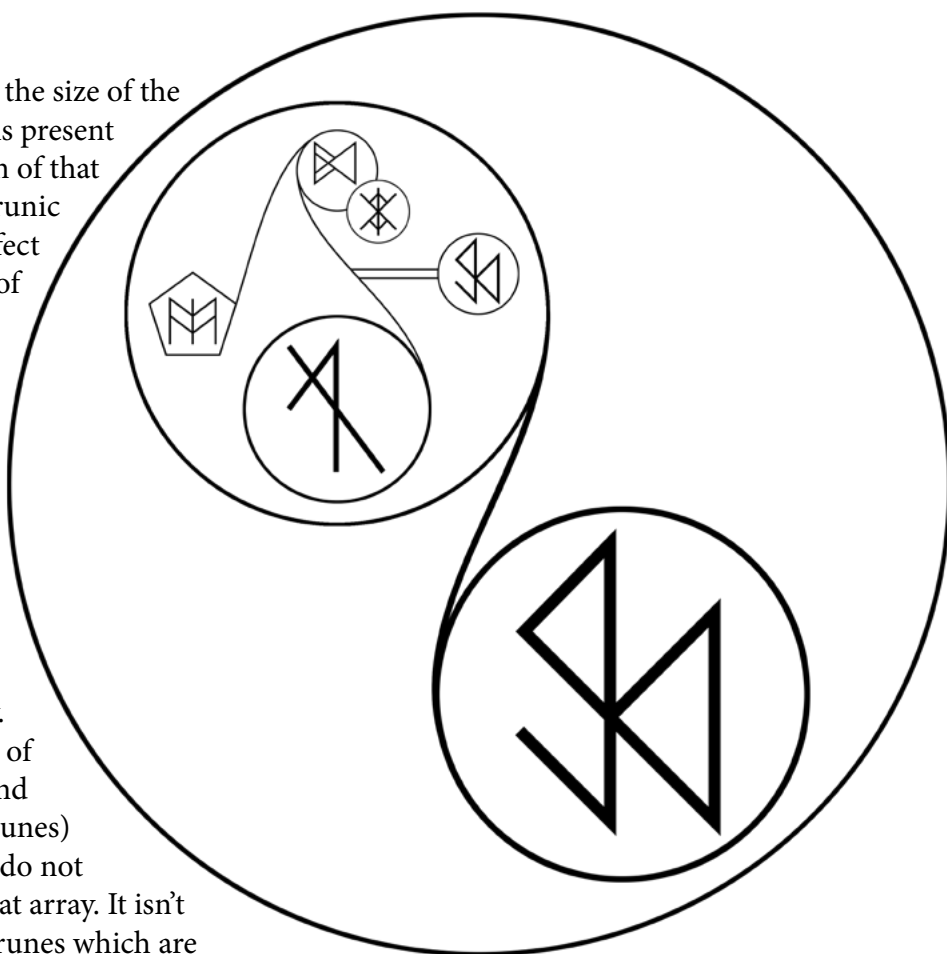
NOTATION

Create *Light* ten times the size of the runic array if a *Human* is present and *Contain* the creation of that light top the size of the runic array; then apply this affect to any *Human* in range of the array.

DESCRIPTION

Other than showing the uses of arrays out of combat, the *Hide and Seek* also shows how the effects of an array can be applied to other loci inside a larger array. The key to the workings of this array is to understand that the loci (and their runes) inside the smaller array do not affect the loci outside that array. It isn't the *Create* and *Contain* runes which are affecting the *Human* rune in the centrum of the larger array. Instead it is the effect of that smaller array (creating a large amount of light in small area) which affects the *Human* rune in the centrum of the larger array. This is a key difference to understand as it will allow you to increase the scope and variety of what you can do with the arrays.

So what happens when you apply the effect of creating a large amount of light in small area onto a human? Well that human will then emit light wherever it comes into the range of the array. This means that this array works light a remote control spotlight. Instead of shining light at a human, this array makes that human shine the light itself. You might think that is an unnecessary step, but it does have its uses. Imagine it's night time, pitch black and you know that there are people close by, but if you were to shine a spotlight around, they would just go into hiding. So what do you do? You wave this array around and if there is



human skin in front of it, that skin will start glowing. Now not only have you caught your opponent off guard, but you know exactly where he is. And if you are lucky, he will have shone a light on his companions nearby.

It is precisely for this purpose that the *Hide and Seek* array is often used by constable and criminal alike. When you are fighting at night, staying hidden from enemy sight will save your life. This array takes that away.

HOSPITALLER'S RESPITE

NOTATION

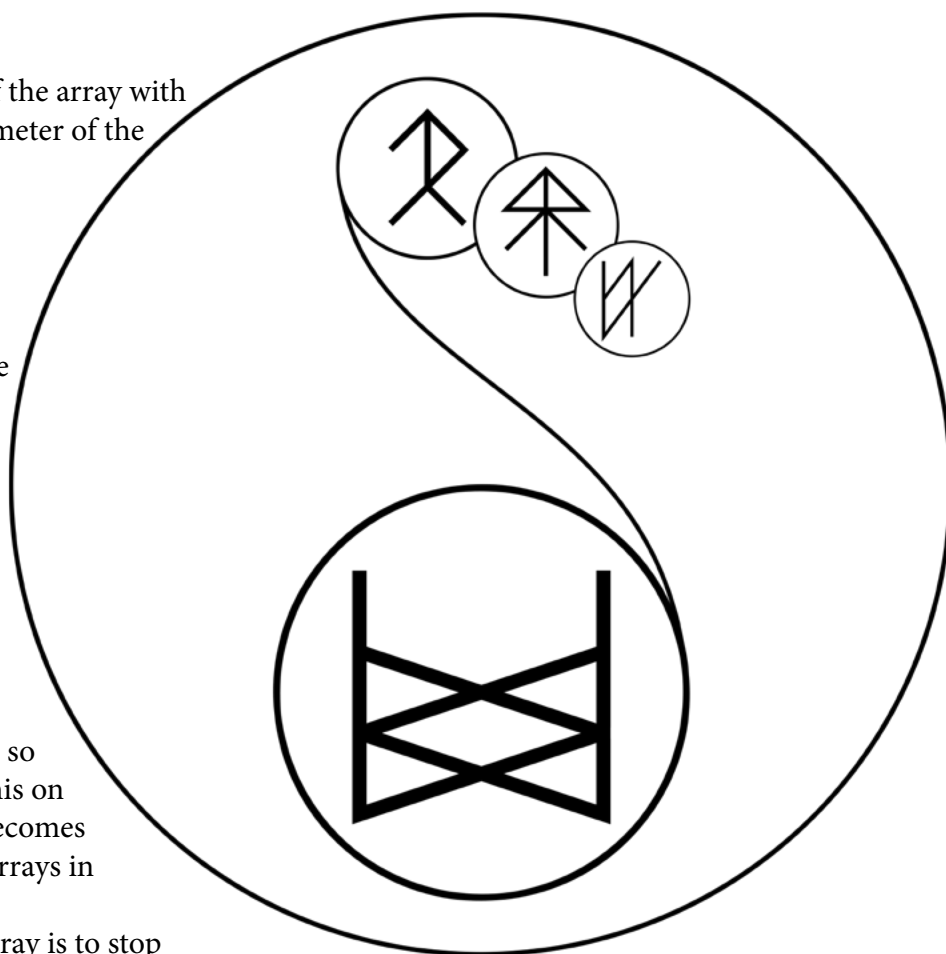
Stop, in an area size of the array with a depth 1/100th the diameter of the array, *Blood*.

DESCRIPTION

The Runed Age is a very lethal system. There is very little chance your characters will escape any combat without some sort of injury, even if its just a scratch. It is precisely for that reason that this array exists. On its own, it's a fairly useless array as the area of its effect is so limited. However, put this on a bandage and then it becomes one of the most useful arrays in existence.

The purpose of this array is to stop bleeding. Since blood can power the arrays, you will never have to worry about an energy source for this array as you will always be applying the bandages with this array on areas where there is blood. As soon as blood touches the array (and is absorbed to power it) the array will stop time for the blood immediately behind that initial blood. When the power is used up, the blood can flow again only to be immediately stopped again. Combined with the pressure that a wrapped bandage can apply to a wound, this array can completely stop the bleeding, or at least slow it down long enough for your character to get some proper medical treatment.

The reason why the *Stop* effect is limited to such a small area is because you don't want to stop all the blood this array can reach, and if you're speaking of an open wound that could mean a lot of your body's blood supply. You only want to effect the blood that can be leaking out, you don't want to cause more



damage than has already been done.

MOCK TURTLE

NOTATION

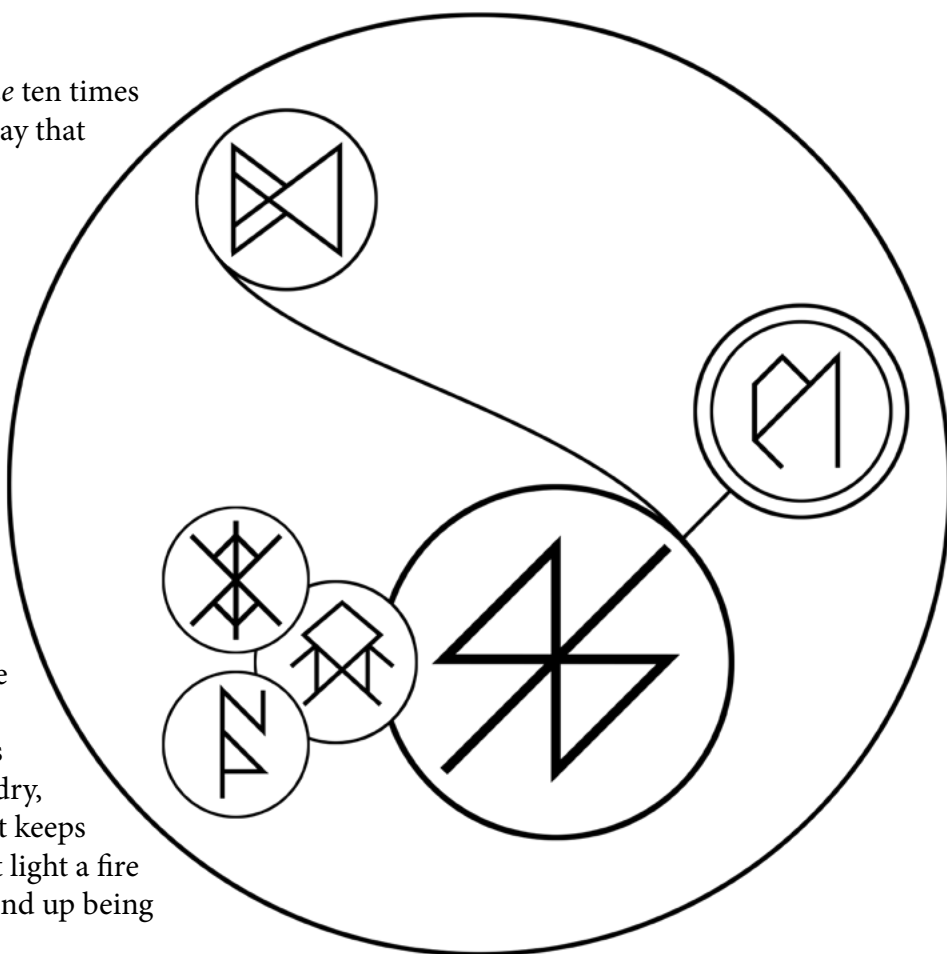
Create a *Dome of Stone* ten times as wide across as the array that excludes *Cold*.

DESCRIPTION

Sometimes you need to lie low for a while; sometimes you just need to disappear for the moment; and sometimes you just don't have a safe place to kip down for the night. For all those times, people turn to the *Mock Turtle* for a little bit of sanctuary in times of trouble. It keeps you dry, it keeps you warm and it keeps you protected. Just don't light a fire inside your might well end up being mock turtle soup.

There are a few things to note with the *Mock Turtle* array. The first is the connection between the *Dome* and *Shell* runes. Ordinarily, *Dome* does not in fact create a dome; it creates a solid half-sphere of whatever you want. This clearly won't work with the *Mock Turtle* as there won't be any place for you inside it. This is where the *Shell* rune comes in. It restricts the effects of the array to a thin wall around the edges of whatever shape rune you are using; in this case the *Dome* rune. So with these two together, you get a nice little stone dome to hide within.

Second thing to note is the *Large* rune. *Large* makes the effect ten times greater than the size of the array, so be careful how small you draw the array or there won't be enough room for you inside. A 20cm diameter array will create a dome 2 metres across and 1 metre tall, the perfect size for a one man tent. You could even fit two or three in there if you cuddle close.



Lastly, note how it excludes cold. This means that the stone dome will exclude all temperature that is less than what the dome is currently. In short, it can't get colder than what it already is. This is perfect for those winter nights, but remember the body heat of anyone inside will slowly raise the dome's temperature, meaning it will exclude even more colder temperatures. This will create a positive feedback loop where the dome will get warmer and warmer and warmer. The upside to this is that you never have to light a fire or create a warmth array as the dome will heat up all by itself. The downside is that, eventually the dome will get too hot for anyone inside to survive. The *Mock Turtle* isn't a permanent solution, only a temporary escape from the world.

PHANTOM CELL

NOTATION

Top Array: *Send Human* within an area twice the size of the array, if *Antimony* and *Sulphur* is present.

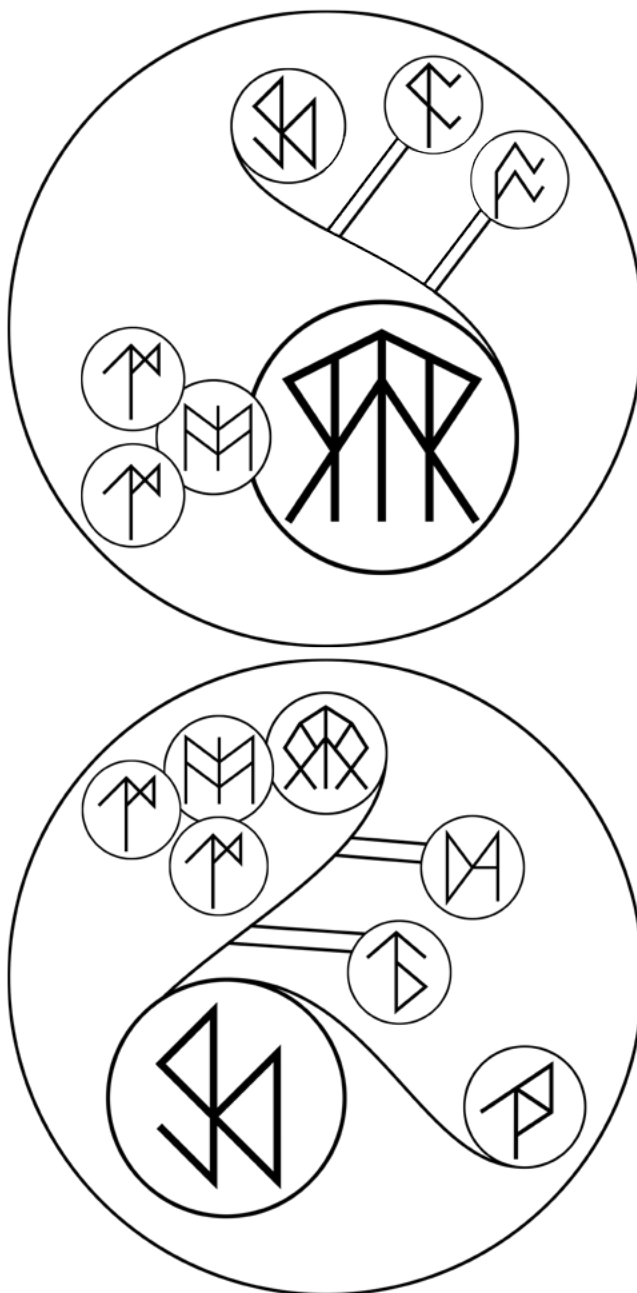
Bottom Array: *Receive Human* from within an area twice the size of the array, if *Mercury* and *Arsenic* is present and *Pull Human*.

DESCRIPTION

The *Phantom Cell* is an example of what can be done when you combine the arrays with technology. At first glance the arrays seems quite simple: they simply teleport a human from one array to another. However, it is the details of it which can confuse you if you don't know how it is used. The arrays only send and receive within a very short distance, they have to be right next to each other, so it seems a rather useless teleport array. Not to mention the odd requirements for activating it: antimony and sulphur to send and mercury and arsenic to receive? Seems rather restrictive doesn't it? Not the sort of thing you would carry around every day. It just doesn't look like something you can use in combat or any other rushed situation.

That is until you know how it is used. The *Phantom Cell* is inscribed onto two metal plates not much larger than the palm of your hand and held inside a metal "booklet" that can fold closed for easy carrying. This metal booklet also holds four vials for the four triggers and handy little levers that, when pressed, will empty the contents onto the send or receive array. So now you have a booklet that can send and/or receive a human at a push of a button. But why would you?

The answer is quite simple. To send anything, the send array needs to be powered. That much is obvious, but it also is true for the receive array. If the receive array isn't powered then it doesn't receive. So, you might be thinking, what happens to something when it is sent but the receive array isn't powered? The answer is that whatever is being sent, a human



in this case, is caught inside the receive array and kept there until it is powered. No time passes for the person inside the receive array and they can stay in there for as long as the array remains intact, but if the array breaks the person disappears forever.

So what does this mean for the *Phantom Cell*? Well simply put that, by pressing one of the levers on the metal booklet, you can capture someone within the array and leave them there until you have need of them. The *Phantom Cell* is exactly that, a prison cell that doesn't actually exist.

SMOKE BOMB

NOTATION

Sustain the *Creation* of a disk of *Carbon* as thick as a thousandth of the diameter of the array if either *Stone* or *Wood* is present; and *Push Carbon* at a speed of 4 m/s.

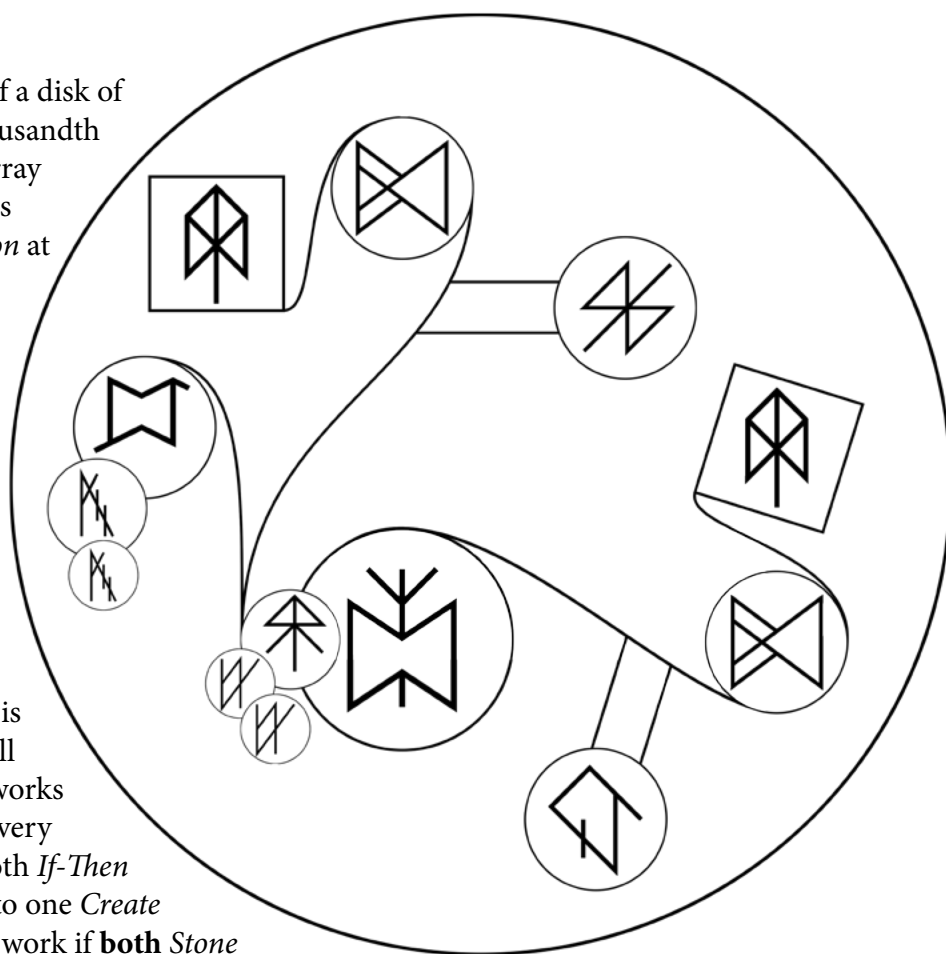
DESCRIPTION

It may look a wee bit odd with two *Create* runes but there is a very good reason for this: each *Create* rune has a different *If-Then* statement attached to it. One only works if there is *Stone* (soil or ground will do) and the other only works if there is *Wood*. This is very important, because if both *If-Then* statements were linked to one *Create* rune then it would only work if **both** *Stone* **and** *Wood* were present.

Notice how there are *Sustain* runes linked to the *Create* runes. This means that the create runes will not just create one disk of *Carbon*, but will instead continue creating until there is no more energy left.

Onto the rest. You might be wondering why this is called the smoke bomb when the array does not actually mention smoke. The trick lies in the size and shape of the carbon produced, and the *Push* rune.

This array is carved onto small marbles so you can imagine just how small this array is. The disk of *Carbon* that is produced is 0.01% as big as the array. It is absurdly small. If you imagine the marble is 1 cm across, the largest the disks of *Carbon* can be made is 10 micrometers thick. Now imagine pushing those 10 micrometer thick disks of fragile amorphous carbon at 4 m/s. They would shatter faster than you can say “oh look, it is a smoke bomb”.



This is how the smoke is made, by breaking apart those disks of carbon and pushing them outwards to be mixed into the air. As there will continually be more carbon made, there will be as much smoke as there were energy invested into the array.

SOFT FALL BOOTS

NOTATION

Top array: *Create a Containment field that Excludes Sound.*

Bottom array: *Reduce the effect of gravity on a Human at the rate of one metre per second and Sustain this.*

DESCRIPTION

Proof that it is often the simpler things in life that matters most. The *Soft Fall Boots* arrays are by no means the most complicated arrays to understand, design or draw and yet they are used more often than nearly every other array in this journal.

And it is all for a very simple reason: they do one thing and they are exceedingly good at that one thing.

As its name implies, the *Soft Fall Boots* arrays work to deaden any sound of boots or shoes on which they have been drawn or etched.

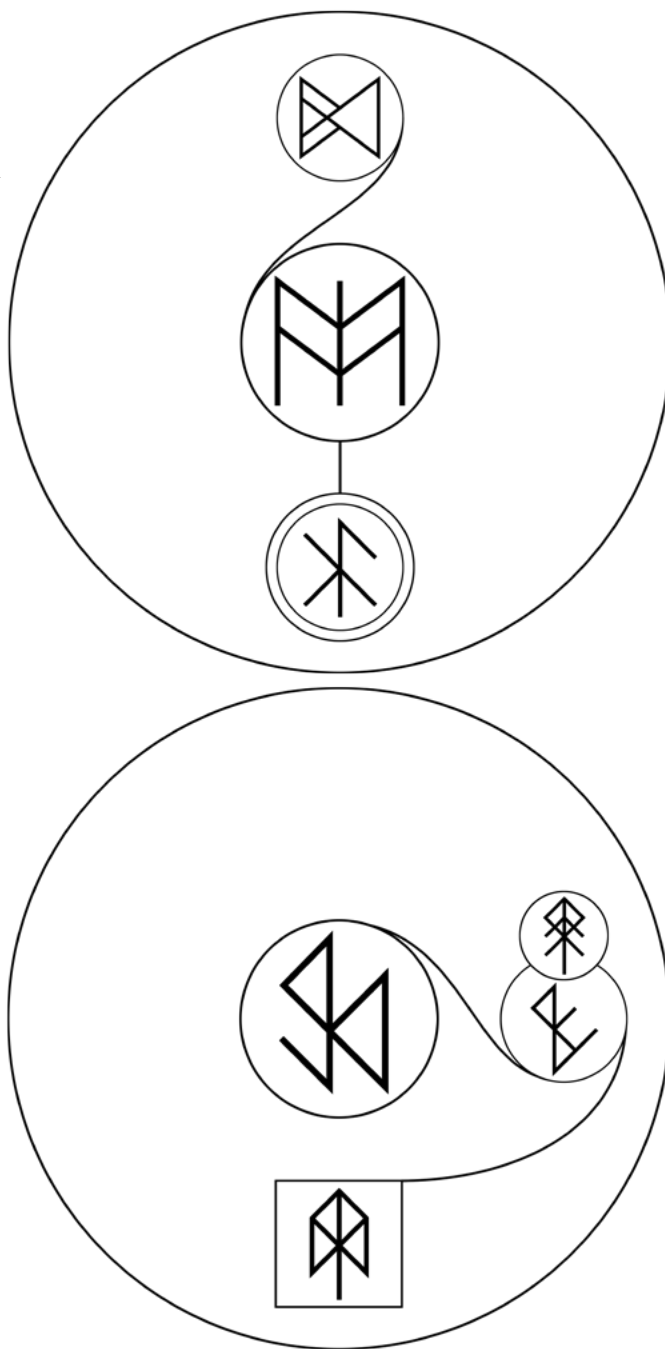
The arrays do this by working in tandem. One array lightens the footstep so the least amount of sound is made while the other array negates any small amount of sound that is made. The top array to the right goes on the bottom of the boot facing down, while the bottom array to the right goes inside the boot facing up to the foot.

You might think that one array that can do both would be more efficient, but the physics behind the arrays shows how wrong you would be.

Remember that the arrays do not absorb energy, they merely copy the energy that passes through them. This means that if two arrays are on top of each other (like these arrays) that means that energy can pass through both arrays to be copied for their own uses.

If one array did both then it would take twice as much energy. In this way, only a single amount of energy is needed to power both arrays.

One thing to also note is the *Sustain* rune



on the bottom array. This means that the bottom array will continue to reduce the effect of gravity until it is completely negated. At a normal walking pace, the amount of energy generated would not be enough for this, but at a quick run, anyone using these arrays should get used to this strange effect before trying to run from the constables.

SOUND BOMB

NOTATION

Contain the Creation of a Gargantuan amount of Sound at a frequency of 2 kHz if Stone or Wood is present.

DESCRIPTION

The sister to the Smoke Bomb that works in exactly the same fashion: two Create runes are linked to the same array and are triggered independently by two separate materials. More than one trigger means more versatility and you can modify this array to include as many triggers as you want.

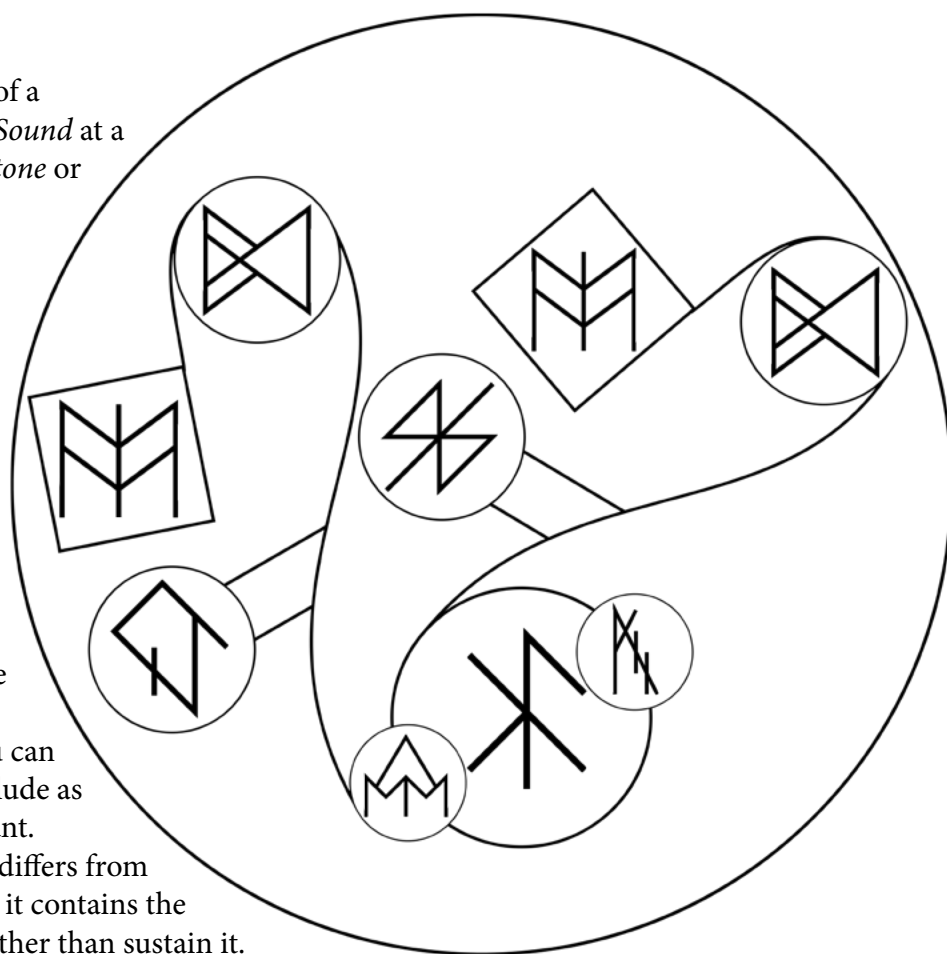
One thing where this differs from the Smoke Bomb is that it contains the creation of the sound rather than sustain it. This is because if you contained the sound it wouldn't just contain the created sound but all sound, making a very useless sound bomb.

What the Contain runes also does is force the gargantuan amount of sound to be produced in the same spot. This condenses the sound for a much larger volume.

As with the Smoke Bomb, this array is most often put one marbles 1cm across, and this means the Gargantuan rune turns the sound up to 100 Decibels. This is like standing in the front row of a rock concert and is more than enough to damage hearing, so if you want to make someone permanently deaf, throw a handful of these Sound Bomb marbles in a room somewhere.

The Quicken rune speeds up whatever it is modifying by a factor of two. Speeding up sound makes it more high pitch so this bomb not only creates a deafening amount of sound but at an annoying high pitch too.

As you can imagine there are two main uses



for this array. The first is as a distraction which it excels at. No one can ignore the hellishly loud sound it makes. The second is, as said before, to deafen people. This is a last resort option because the people you are deafening will clearly know something is afoot and will clumsily try and raise alarm.

One approach is for stealth, the other is for attack. Choose wisely and cover your ears.

STAR FLARE

NOTATION

Create a disk of *Light* and *Push* that light disk at a speed of 4 m/s. *Contain* that pushing to a cylinder with a length one thousand times the array's diameter and as wide as the array.

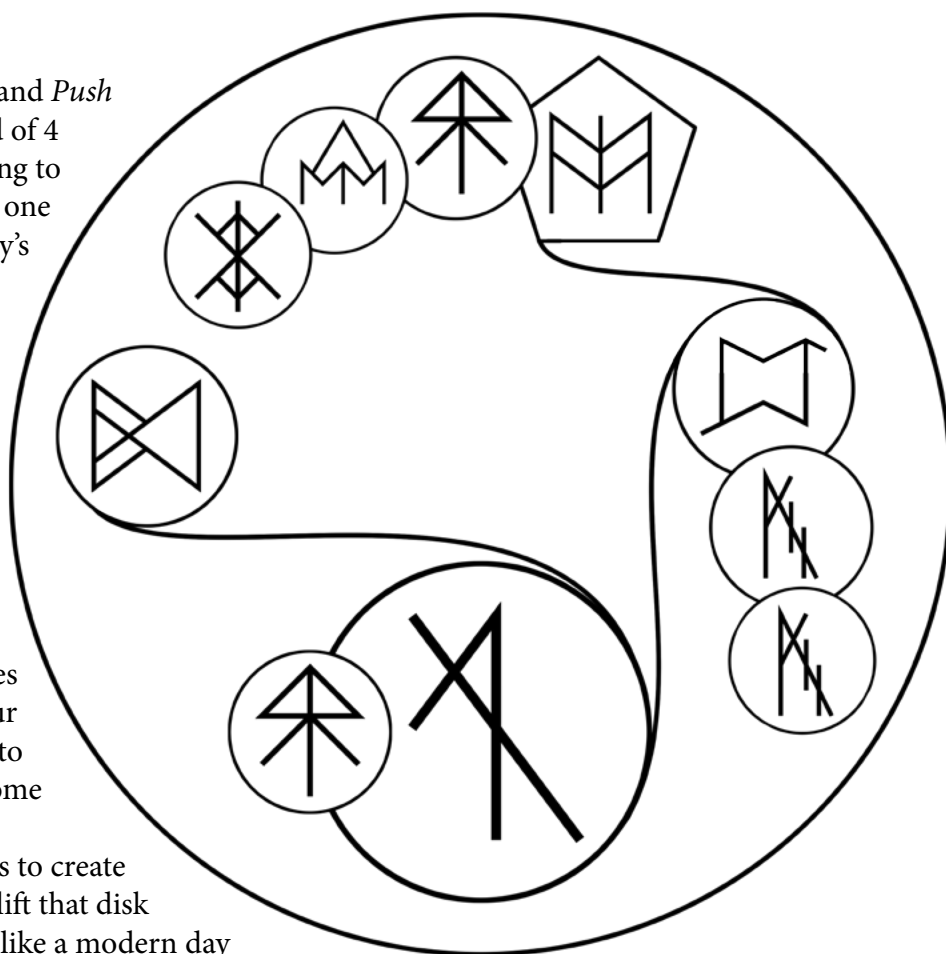
DESCRIPTION

Much like the *Hospitaller's Respite* from last week, the *Star Flare* is an array of last resort. As the name implies, this array creates a flare that points to your position, so if you have to use it, you must be in some serious danger.

The key to this array is to create a disk of light and then lift that disk of light into the air, just like a modern day flare. Except in this case, the flare will hang there in the air for as long as there is energy to power the array.

In Middelburg, these *Star Flare* arrays are inscribed upon bronze disks 10cm in diameter which means the flare is launched 100m in the air. The bronze disks also mean that this array can't be destroyed through the effects of other arrays (as bronze can't be targeted by arrays) meaning there is a good chance your *Star Flare* will be safe until you need it.

Other than being a new, bright star in the night sky, the *Star Flare* ascends slowly enough (at 4 metres per second means it will take 25 seconds to reach its max height) that anyone watching will be able to trace where it comes from. So while the help you are hoping will come will see where you are, so will your enemies and any watchful constable. It goes without saying that you should be careful when using this.



WATERJET

NOTATION

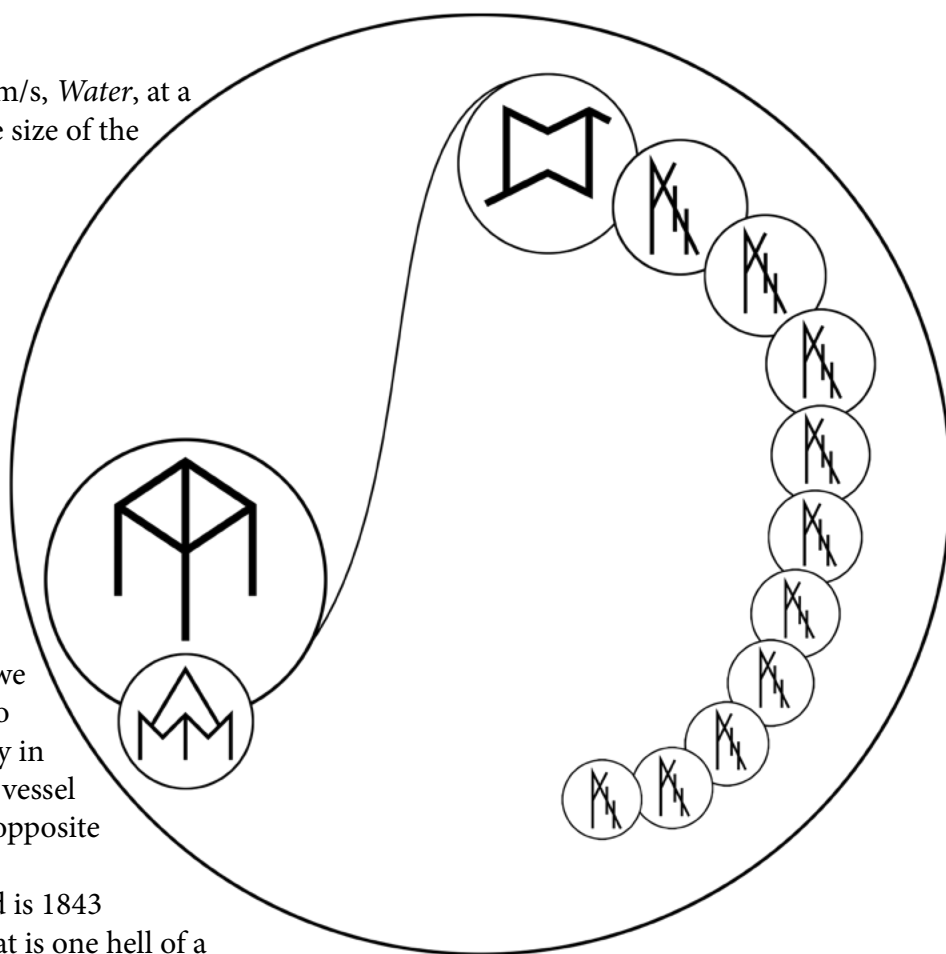
Push, at speed of 512 m/s, *Water*, at a size a hundred times the size of the array.

DESCRIPTION

Between the name and the notation I am sure you have already worked out what this array is. It is a water jet engine. It may be unfamiliar to today's engineers but it serves the same purpose as those water jet engines we have in the real world: to push water really quickly in one direction to make a vessel go really quickly in the opposite direction.

512 metres per second is 1843 kilometres per hour. That is one hell of a speed. It is not surprising that dockworkers die every year when they are unlucky enough to walk in front of this array while repairing ships. For large ships, this array is usually set into a special jet cylinder (to channel and direct the water) that is 1 metre across. This means that 100 cubic metres are pushed out every second at speeds greater than the speed of sound. This could be a weapon in its own right, but it serves a more practical purpose: emergency propulsion for warships.

Warships are large and heavy beasts and during combat they need to be able to move at a moment's notice. With the lethality of the runes, every canon shot coming a ship's way could be the last so dexterity and swiftness is often more important than armour and shields. The *Water Jet* arrays (and their housings) are fitted onto ships to aid this, when these are activated the largest and heaviest of ships can prance around the water like small fishing boats. There are precious



few ships which operated purely by jet power, most are still sail driven, so these jets are purely for combat or emergency use.

The other type of ship that has an everlasting love for this array are pirate ships. Often smaller, sleeker, and more nimble than great warships, pirate vessels still employ these *Water Jets*. They don't use them for combat as such but for that extra boost in speed it can give them to catch up to fleeing merchant vessels. Often times pirate ships will have so many jets on them that when they are activated the ships actually lift off the water with the force of the jets.