VERTEBRA

GROW THE SPINE. BREAK THE EMPIRE.

INSTRUCTION MANUAL

A shoot 'em up roguelite of bone and fire

D. B. WALDTIER · 1 PLAYER · KEYBOARD OR GAMEPAD

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THE EMPIRE OF GEARS WELCOMES YOU

This manual explains everything a new skull needs to know, and several things an experienced one would rather not think about. Read it in any order. Or not at all: the game teaches as you fly, and the Codex remembers everything you meet.

PHOTOSENSITIVITY WARNING

Bursts, explosions, lightning and boss attacks in this game produce bright flashes and screen shake. If you or anyone in your household is sensitive to flashing light, turn off **Screen shake & flash** in Settings before playing, play in a well-lit room, and stop if you feel unwell.

"Every bone they took from the sky is still listening for the sky."

— FOUNDRY COAST GRAFFITI

CHAPTER I

The Bones of the Empire

The sky used to belong to the serpents. They were longer than rivers and older than the mountains, and they flew over the world on spines of living bone. Then the Empire of Gears learned what serpent bone could do. A single vertebra, set humming in an engine, could drive a furnace for a hundred years. So the empire hunted the serpents, and mined them, and rendered them, and its cities grew bright on their bones.

The last serpent fell a century ago. Its vertebrae still hum inside the empire's engines: in the keel of a battleship that never stops growing, under glass gardens, inside storm cages and ore-presses, and at the very centre of the ring city, where the Engineer-Queen keeps its heart beating so the lights of the capital never go out.

◆ THE SKULL

A skull lay in a scrapyard on the Foundry Coast, too thick for the saws and too old for the furnace. One night the furnaces sang a note it knew. It opened its eyes. It did not know what it was. It only knew that its bones were calling, from every engine and every gun of the empire, and that it wanted them back.

That skull is you. You start with almost nothing: a head that breathes fire and a few plates of borrowed bone. Everything the empire throws at you is made, somewhere deep inside, of the serpent you used to be. Break it, and take it back.

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INTERCEPTED IMPERIAL SIGNAL
FOUNDRY COAST, SLIPWAY 9: Unidentified skull
airborne over the scrapyard. Breathing fire.
DRYDOCK COMMAND: Size?
FOUNDRY COAST, SLIPWAY 9: Small. It is
picking up the drones we shoot down. It is
getting longer.
```

◆ YOUR BODY IS YOUR BUILD

Every enemy you destroy can leave a vertebra behind, and every vertebra becomes part of you, chained behind the skull in the order you collect it. Plates soak up bullets. Turrets fire with your breath. Mirror scales send shots back where they came from. Bombs, healers, magnets, amplifiers, relics torn out of the empire's great machines: there are more than fifty kinds of bone, and the way you arrange them is the whole game.

Your body is a shield, a weapon and a liability at once. It blocks the bullets aimed at your skull, but it is long, and heavy, and the empire has hooks, saws and thieves made for exactly this kind of problem.

"Every bone they took from the sky is still listening for the sky."

— GRAFFITI, FOUNDRY COAST SLIPWAY

THE ROAD TO THE CAPITAL

The empire lies along a single road, from the burning docks of the coast to the ring city in the clouds. Each stretch of it is a **region**, guarded by one of the empire's great engines. You cross a region on a branching route of battles, shrines, forges, markets and stranger things, and at the end of it you fight its **boss**. Kill it, and you pull a **Relic** out of the wreck: one of the serpent's original vertebrae, older and stranger than anything else you can grow.

REGION	GUARDED BY
I · The Foundry Coast	The Drydock
II · The Spire Gardens	The Gardener
III · The Storm Engines	The Conductor
IV · The Ossuary Mines	The Bonewright
V · The Imperial Ring	The Engineer-Queen
VI · ???	*The lore remembers.*

WHEN YOU FALL

Vertebra is a **roguelite**. When your skull loses its last Scale, the run is over and your body scatters. But nothing is wasted: the bones you broke become **Bone Memory**, and in the **Ossuary** you can spend it on new segments, new Skulls and new ways to start. The skull remembers. Each run goes a little further.

A full run, from the coast to the capital, takes about an hour. A run that ends in the first region takes ten minutes. Either way, you can always try again.

A WORD BEFORE YOU FLY

You do not have to read this manual to play. The first sectors teach the controls as they go, the Codex records every enemy you meet, and every segment explains itself when you draft it. But skulls who read the manual, as the old bones say, break more of the empire.

"They built a whole city out of us. It seems only fair to take it back one bone at a time."

— THE WAKING SKULL

FIG. 1 *A full spine over the Imperial Ring. Ten vertebrae, two relics and a lot of fire.*

CHAPTER II

Getting Started

Vertebra runs in your web browser. It draws its pixels with **WebGPU** and falls back to **WebGL 2** on browsers without it, so any recent desktop browser will do; Chrome and Edge give the best results. Play with the keyboard or with any standard gamepad.

STARTING THE GAME

- **On the web:** open the game page on waldtier.com or itch.io and press *Run game*. Click the game once so it can hear the keyboard.
- **Downloaded copy (Windows):** unzip it and double-click **play.bat**. A tiny local server starts and the game opens at **http://localhost:8080/**. You need Python 3 installed.
- **Downloaded copy (other systems):** in the game folder, run **python3 serve.py 8080** and open the same address.

Browsers refuse to load the game straight from a folder (file://), which is why the downloaded version needs the little server.

THE TITLE SCREEN

FIG. 2 *The title screen. Press any key to wake the music.*

OPTION	WHAT IT DOES
Continue Run	Returns to a run in progress (saved at every map screen).
New Run	Choose a Skull, a difficulty and Heat, then fly.
Daily Run	Today's seed, the same for everyone. One attempt.
Arcade Gauntlet	A fixed route with a body that grows on schedule.
Practice	Any unlocked fight with any body you like.
Ossuary	Spend Bone Memory on unlocks. Read the lore.
Records	Your best scores per mode, Skull and Heat.
Codex	Every enemy and segment you have met.
Settings	Sound, controls, CRT filter and more.

A NEW RUN

FIG. 3 *Setting up a run: Skull, difficulty and (after your first win) Heat.*

Before each run you choose three things.

The Skull. The Waking Skull is the one you start with. Five more can be unlocked in the Ossuary, each with its own breath, Burst and starting body. See *The Six Skulls* on page 18.

The difficulty. *Story* gives you two extra Scales, slower bullets and a body that almost cannot be broken. *Standard* is the game as designed. *Arcade* is one Scale, fragile bones and three credits to continue. See page 27.

Heat. Once you have beaten the game, up to ten Heat modifiers make the next run harder and worth more points.

YOUR FIRST HOUR

The first sectors of the Foundry Coast show short hints at the top of the screen as each new idea appears: moving, breathing, blocking, curling, whipping. Drones and gunboats are slow and forgiving. Use them to learn the most important lesson in the game:

Your skull is fragile. Your body is not.
Put the body between the bullets and the skull.

Every bullet your body blocks costs it a little integrity, but it also fills your **Charge**. Every bullet that touches your skull costs a **Scale**. Lose them all and the run ends.

After each sector you **draft** a new segment, which joins the tail end of your body. At **Shrines** you can rearrange it. Within a few sectors you will have a body that shoots, shields and heals itself, and you will start to feel how its order matters.

HINT FROM THE OLD BONES

Do not chase enemies with the skull. Fly where the bullets are not, keep your breath on the enemy, and let the body trail through the danger behind you. A long body swept through a bullet curtain is the safest place in the sky.

CHAPTER III

Controls

Vertebra is played with eight actions. The default keys sit under your hands: the arrows (or WASD) move, and the right hand works the body. Every key can be changed in **Settings › Controls**.

KEYBOARD

KEYS	ACTION
← ↑ → ↓ / W A S D	Move the skull
Space / J	**Breathe.** Your Skull's attack. Hold it.
K	**Curl.** The body orbits the skull as a shield.
L	**Brace.** The body locks in place for a moment.
I	**Whip.** The tail sweeps an arc.
U	**Burst.** When Charge is full.
O (hold)	**Shed** the tail end segment.
Shift	**Focus.** Slow, precise movement.
Esc / P	Pause
Enter Esc	Confirm / back in menus

GAMEPAD

BUTTON	ACTION
Left stick / D-pad	Move (the stick is analogue)
A	Breathe / confirm
B	Shed / back
X	Whip
Y	Burst
LB / RB	Curl / Brace
LT / RT	Focus
Start	Pause

CHANGING KEYS

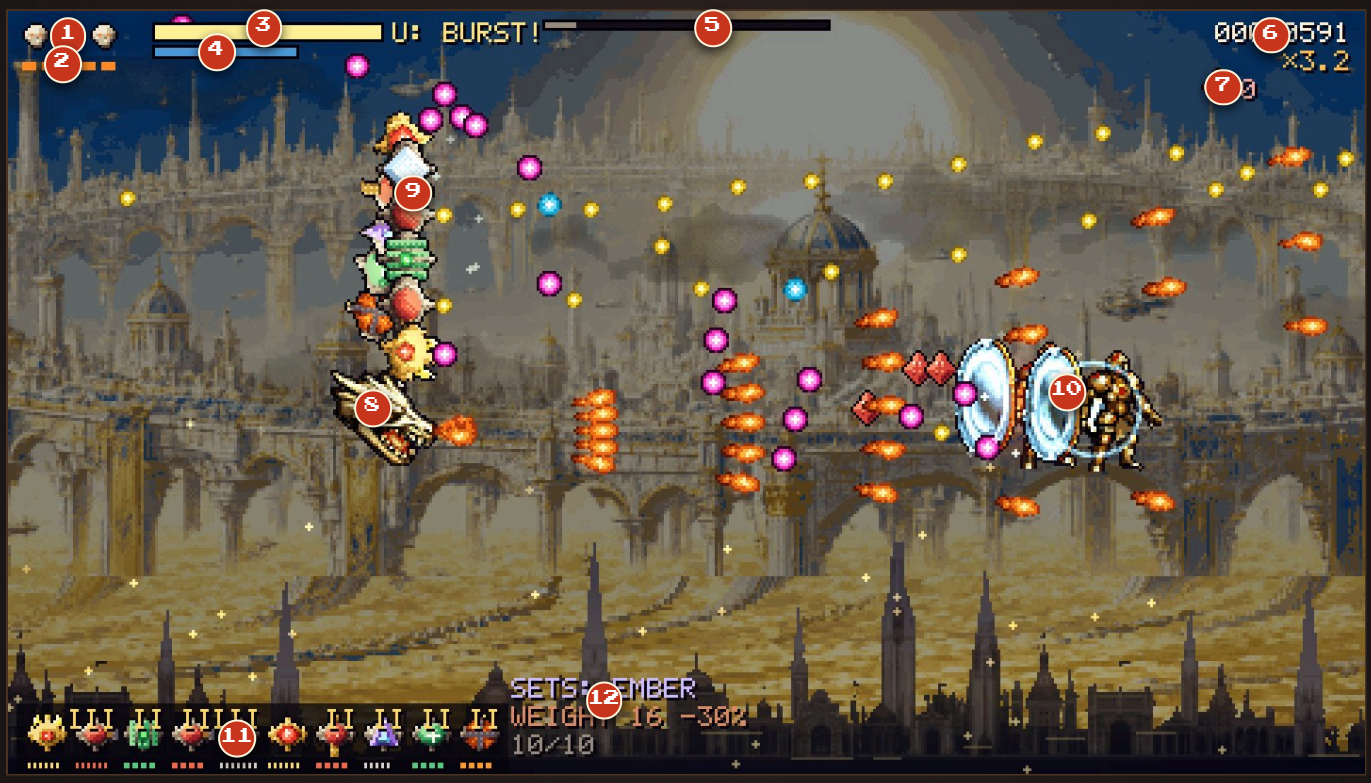
FIG. 4 *Settings › Controls. Select an action, then press the new key.*

Select an action, press confirm, then press the key you want. *Reset to defaults* restores everything. Gamepad buttons are fixed.

In Settings you can also make Curl and Brace toggles instead of held keys, and turn on auto-fire so the skull breathes all the time.

CHAPTER IV

The Screen



1. **Scales.** Your lives. A hit to the skull costs one, and one Breath level.
2. **Breath level.** One to five. Embers raise it; hits lower it.
3. **Charge.** Fills as your body blocks bullets. Full, it reads U: BURST!
4. **Brace and Whip.** The blue bar is your Brace meter; the small bar is the Whip cooling down.
5. **Progress.** How far through the sector you are, or the boss's health.
6. **Score and multiplier.** The multiplier grows with your chain and with the length of your body.
7. **Marrow.** The currency of the road: markets, forges, events.
8. **The skull.** The only part of you that can lose a Scale. Its hitbox is smaller than it looks.
9. **The body.** Every segment in the order you collected it, head to tail.
10. **An enemy.** This Mirror Guard sends your shots back. Whip it.
11. **The body bar.** Each segment with its integrity pips and tier.
12. **Sets, weight, slots.** Active bone sets, the weight penalty and slots used.

through it. Breath level. the skull.

READING THE SKY

ENEMY SHOT Small, aimed or fanned. Block it.

HEAVY SHOT Slow, big, hits harder.

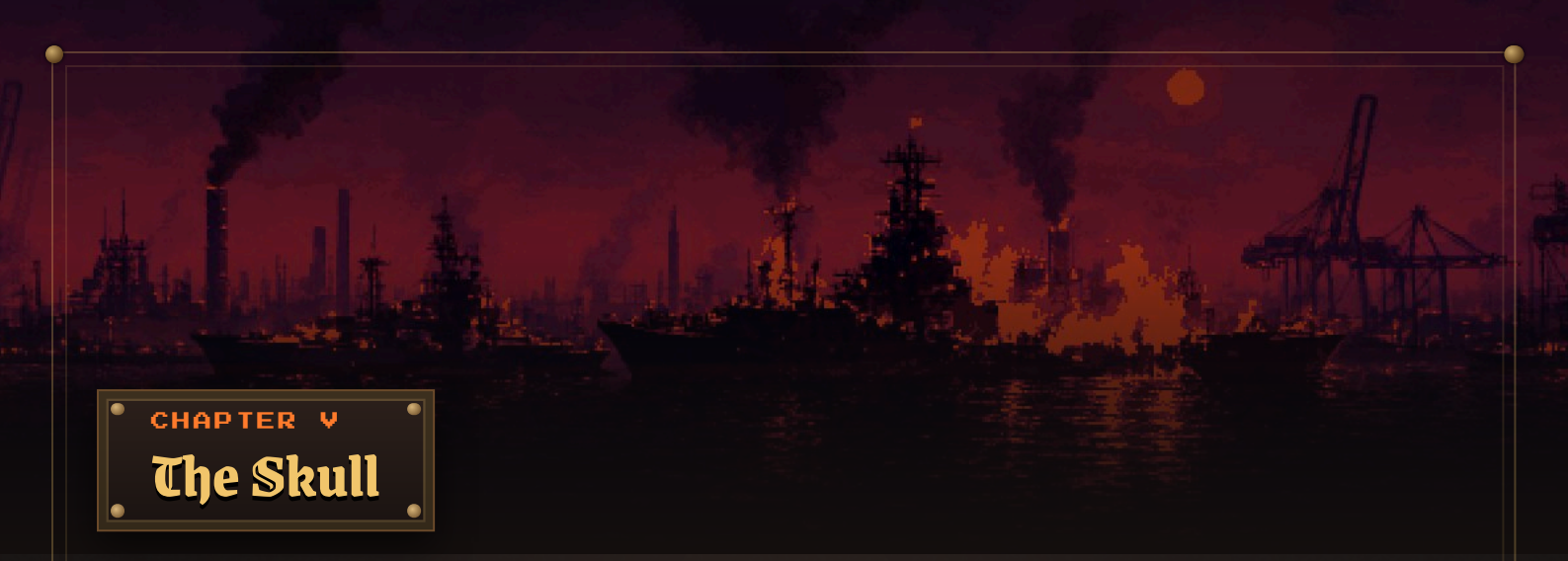
NEEDLE Fast streams. Graze them.

MARROW Currency. Fly

EMBER Raises your

SCALE One life of

Banners in the middle of the screen announce sector names, hints, elites and bosses. A red **WARNING** means a boss is coming. Enemy bullets can be recoloured amber or cyan in Settings.



CHAPTER V

The Skull

The skull is you. It flies, it breathes, and it is the only part of you the empire can actually kill. Everything else is armour.

◆ BREATH

Hold Space to breathe. The Waking Skull breathes a stream of fire; other Skulls breathe lightning, bolts, cannon shot, needles or twin streams. Turrets on your body fire in time with your breath, so if you stop breathing, most of your body stops shooting too.

Breath has five **levels**. Each level widens and strengthens the attack. You raise it by catching **Embers**, the glowing sparks some enemies drop, and you lose a level every time the skull is hit.

◆ SCALES

Scales are your lives, shown at the top left. You start with three (more on Story, one on Arcade). A hit to the skull costs a Scale and makes you briefly invulnerable. Scales come back at Shrines, at markets, with the Heart Bone relic, and one at the start of each new region.

◆ CHARGE AND THE BURST

Every bullet your body blocks adds to **Charge**. So does grazing bullets with the skull, whipping and coiling enemies. When the bar is full, press U to unleash your Skull's **Burst**: the Waking Skull's is a fire beam across the whole screen that erases bullets and melts almost anything in its path. You are invulnerable while it lasts.

BLOCKING IS ATTACKING

A body that blocks a lot charges a lot. The more bullets you let your spine eat, the more often you can Burst. Absorber segments triple the Charge from each block; the Glass Skull doubles it.

◆ GRAZING

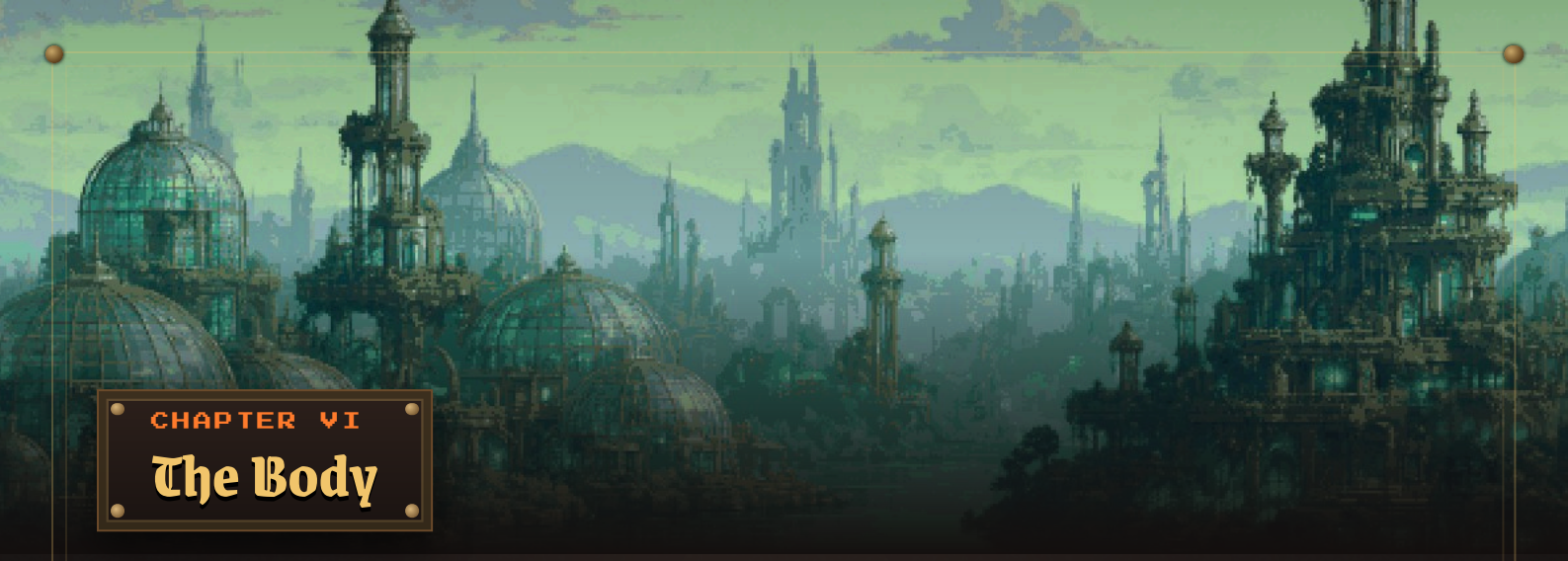
A bullet that passes very close to the skull without touching it is a **graze**. Each graze adds a little Charge, a little to your chain and two points to your score. Brave pilots charge faster.

◆ CHAIN AND SCORE

Every kill adds one to your **chain**; the chain breaks if you go a few seconds without one, or if the skull is hit. Your score multiplier is (1 + chain/10) × (1 + 5% per segment), so a long body and a long chain multiply each other. A sector cleared without a single hit to the skull is worth a 2,000 point bonus.

"The head is for thinking. The rest of you is for getting shot."

— THE IRON SKULL



CHAPTER VI

The Body

Your body follows the exact path your skull has flown, segment after segment, like a train on a track you are laying as you go. If you stop, it stops. If you loop, it loops. Learning to steer the skull so that the body ends up where you want it is the heart of the game.

BLOCKING AND INTEGRITY

Enemy bullets that hit a segment stop there. The segment loses a little **integrity** (the pips under it on the body bar) and you gain Charge. When its integrity runs out, the segment **breaks**. A broken segment falls away as a loose bone: fly the skull into it within about two seconds to **catch** it and reattach it at the tail.

Between sectors, every segment knits back one point of integrity. After a boss, the whole body is mended.

ORDER MATTERS

New segments join at the **tail end**. The segment right behind the skull is your front line; the tail end is the part that whips and sheds. Many segments affect their **neighbours** (see Adjacency, page 15), and Shrines let you rearrange the whole spine.

WEIGHT

Each segment has a weight. Up to 6 points of weight cost nothing; every point beyond that slows the skull by 3%, up to a maximum of half your speed. Fins cancel weight; the Gale Bladder adds speed; the Wing Root relic makes the body weightless.

SLOTS

A spine holds 8 segments (10 with the two Ossuary sockets, 12 for the Hollow Skull). When it is full, a new segment must replace an old one, or be left behind.

THE BODY IS LONG

Narrow corridors, crushers and turrets on the walls all punish a long body that scrapes the terrain. In tight spaces, Curl or fly through the middle of the gap and let the body follow your line exactly.

CURL

FIG. 5 *Curl: the body orbits the skull as a ring of armour.*

Hold K and the body wraps into a ring around the skull. Curl closes every gap: nothing gets through except lasers and lances. Side guns fire outwards all round. The skull flies at 70% speed while curled.

BRACE

Hold L and the body locks rigidly in place for up to three seconds, while the skull keeps moving. Use it to leave a wall of plates across a bullet stream, to stop a tractor beam dragging you, or to swing past a crusher. The meter refills when you let go.

WHIP

FIG. 6 *The tail end sweeps a wide arc, smashing small enemies and deflecting bullets.*

Press I and the last third of the body sweeps a fast arc. The whip deals double damage, deflects bullets, knocks hooks, crawlers and welders off you and gives Charge on every hit. It needs just over a second to recover.

COIL

With six or more segments, fly the skull round in a tight loop so that the body closes a circle. Anything trapped inside the **Coil** is crushed: small enemies die at once, bigger ones take heavy damage, and every crush gives Charge. Some bosses have weak points made for coiling.

SHED

Hold O for half a second to **shed** the tail end segment on purpose. What it does depends on what it is: bombs and cluster pods explode, guard plates become a floating wall, turrets keep shooting on their own for a while. Shedding is also how you get rid of a hooked, rooted or crawler-infested bone.

BURST

FIG. 7 *The Waking Skull's Burst: a fire beam across the whole screen.*

CHAPTER VII

The Catalogue of Bones

There are thirty-seven kinds of ordinary vertebra, in five families, plus the Relics. Segments marked **Ossuary** must be unlocked before they can appear in drafts. WT is weight, INT is integrity; each tier above the first adds two integrity and makes the effect stronger.

Guard

Ivory and steel. They block, reflect and soak.

PLATE VERTEBRA WT 1 · INT 4 · PLATED SET
High integrity. The basic shield. Tier III grows spines.

SPINED PLATE WT 1 · INT 3 · PLATED SET
Damages enemies that touch it. Takes half contact damage.

MIRROR SCALE WT 1 · INT 3 · MIRROR SET
Reflects bullets and lasers back at the empire. Reflecting wears it slowly.

ABSORBER WT 1 · INT 3 · STORM SET
Blocked bullets give triple Charge.

PRISM WT 1 · INT 3 · MIRROR SET
Splits lasers into harmless sparks. Tier III reflects them.

BULWARK OSSUARY WT 3 · INT 7 · PLATED SET
Wide hitbox, huge integrity. Heavy.

ABLATIVE SHELL WT 2 · INT 9 · PLATED SET
Huge integrity, but it can never be repaired. Drops off when spent.

REGENERATING BONE OSSUARY WT 1 · INT 3 · PLATED SET
Heals itself slowly.

Arms

Brass and red. Turrets that fire with your breath.

SPIT TURRET WT 1 · INT 2 · EMBER SET
Fires forward in sync with your breath.

SIDE GUN WT 2 · INT 2 · EMBER SET
Fires perpendicular to the body. Deadly in Curl.

HOMING NEST WT 2 · INT 2 · HIVE SET
Launches slow homing shots.

FLAK NODE WT 2 · INT 2 · HIVE SET
Shotgun bursts at enemies that come close.

ARC COIL WT 2 · INT 2 · STORM SET
Lightning jumps to nearby enemies, chaining to a second one.

LANCE OSSUARY WT 2 · INT 2 · EMBER SET
Charges while you breathe; releasing Fire looses a piercing lance.

MINE LAYER OSSUARY WT 2 · INT 2 · HIVE SET
Drops proximity mines along the trail.

REAR GUN OSSUARY WT 1 · INT 2 · EMBER SET
Fires backward. Covers your tail.

Utility
Green enamel. They change the bones around them.

MEDIC MARROW WT 1 · INT 2 · HIVE SET
Slowly repairs BOTH neighbours.

AMPLIFIER WT 1 · INT 2 · STORM SET
The turret BEHIND it fires 50% faster.

MAGNET WT 1 · INT 2
Pulls Marrow, Embers and loose segments.

CONDUIT WT 1 · INT 2 · STORM SET
Passes its neighbours' adjacency effects one step further.

BATTERY WT 1 · INT 2 · STORM SET
Brace lasts 50% longer and refills faster. Curl spins faster.

SCANNER OSSUARY WT 1 · INT 2 · STORM SET
Reveals weak points (elites and bosses take +20%) and what waits on the route map.

ANCHOR OSSUARY WT 2 · INT 3 · PLATED SET
Brace lasts twice as long. The body cannot be knocked back or pulled.

SPARE RIB WT 0 · INT 1
Weak and light. When another segment breaks, the Spare Rib takes its place.

GALE BLADDER WT 1 · INT 2 · STORM SET
The skull flies 10% faster (+5% per tier). They stack, up to +30%.

FIN OSSUARY WT 1 · INT 2
Cancels 4 points of body weight (+1 per tier), so a heavy body stays fast.

Volatile
Orange glow. They explode, on purpose or not.

BOMB VERTEBRA WT 2 · INT 2 · EMBER SET
Explodes when it breaks or is shed. As the tail tip, Whip detonates on hit.

GAS SAC WT 1 · INT 3 · HIVE SET
Leaves a corroding cloud when hit by a bullet.

CLUSTER POD WT 2 · INT 2 · HIVE SET
Breaks or sheds into four bomblets.

CHAIN CHARGE OSSUARY WT 2 · INT 2 · EMBER SET
Explodes when it breaks or is shed, and sets off the next Volatile behind it.

OVERLOADER OSSUARY WT 1 · INT 2 · STORM SET
Doubles the segment BEHIND it, then burns out after 30 seconds of fighting.

Special
Violet. Strange gifts that bend the rules.

TIME KNOT WT 1 · INT 2 · MIRROR SET
Enemy bullets near it slow to a crawl.

GRAVITY NODE OSSUARY WT 2 · INT 3
Bends nearby enemy bullets into itself (and your body).

PHASE JOINT OSSUARY WT 1 · INT 2
On Whip, the segments behind it pass through walls for a second.

HOOK OSSUARY WT 1 · INT 2 · HIVE SET
Whip grabs a small enemy and drags it behind you as a temporary shield.

SPLITTER OSSUARY WT 1 · INT 3 · MIRROR SET
The body behind it forks into two strands.

ECHO OSSUARY WT 1 · INT 2 · MIRROR SET
Copies the segment IN FRONT of it at half strength.

Relics

The serpent's original vertebrae. One per boss.

Relics weigh 3 and take a slot like any other bone, but their effects belong to the old serpent and break the usual rules. After each boss you choose one of three, or leave it for 60 Marrow.

HEART BONE WT 3 · INT 6
Every 2 sectors cleared, the skull regains a Scale.

WING ROOT WT 3 · INT 6
The body is weightless: no speed penalty, ever.

JAW HINGE WT 3 · INT 6
Whip becomes a bite that eats bullets and turns them into Charge.

CROWN SPINE WT 3 · INT 6
Every adjacency effect works one tier higher.

TAIL PEARL WT 3 · INT 6
The tail end segment can never break.

Old Bones

Alternative relics, unlocked in the Ossuary.

SERPENT EYE WT 3 · INT 6
Enemy bullets near the skull slow to half speed.

VENOM FANG WT 3 · INT 6
Breath poisons what it hits: a slow burn that stacks.

MOTHER SCALE WT 3 · INT 6
+2 maximum Scales while it is carried.

DORSAL CREST WT 3 · INT 6
Every Guard segment grows spines.

TALON WT 3 · INT 6
Whip hits twice as hard and recovers twice as fast.

STORM LUNG WT 3 · INT 6
Charge fills 50% faster.

MARROW STONE WT 3 · INT 6
Every Marrow pickup counts twice.

COIL SINEW WT 3 · INT 6
Coil needs only 4 segments and crushes twice as fast.

FORKED TONGUE WT 3 · INT 6
The breath also fires backward.

SERPENT EGG WT 3 · INT 6
Once per region, a killing blow leaves the skull at 1 Scale instead.

CHAPTER VIII

Adjacency, Sets and Tiers

A good body is more than the sum of its bones. Three things multiply what each segment does: who its neighbours are, which sets it belongs to, and its tier.

◆ ADJACENCY

Some segments act on the segment **in front of** them, some on the one **behind**, some on both. The Shrine draws a link between segments that affect each other.

SEGMENT	AFFECTS
Amplifier	The turret behind it fires 50% faster.
Overloader	Doubles the segment behind it, then burns out.
Medic Marrow	Repairs both neighbours.
Echo	Copies the segment in front at half strength.
Conduit	Passes its neighbours' effects one step further.
Chain Charge	Sets off neighbouring Chain Charges when it blows.
Crown Spine	Every adjacency effect works one tier higher.

FIG. 8 *At a Shrine, coloured links show which segments affect each other.*

◆ BONE SETS

Many segments belong to one of five **sets**. Carry three or more of the same set and its bonus switches on; the active sets are listed above the body bar.

SET	BONUS AT 3+
PLATED	Guard segments take 25% less damage.
STORM	Every blocked bullet sparks an arc at the nearest enemy.
HIVE	Homing, Flak and Arc fire 35% faster.
MIRROR	Reflections hit twice as hard; mirrors wear half as fast.
EMBER	Breath and turret shots deal 30% more damage.

◆ TIERS AND THE FORGE

Segments come in tiers I, II and III. At a **Forge**, two identical segments of the same tier fuse into one of the next tier: more integrity, a stronger effect, and a free slot. Some segments change at tier III: plates grow spines, prisms start reflecting lasers.

A CLASSIC SPINE

Plate · Amplifier · Spit Turret · Medic · Spit Turret · Mirror. The plate takes the first hits, the amplified turret does the killing, the medic keeps both turrets alive and the mirror at the tail sends bullets back during a whip.

CHAPTER IX

The Road

Each region is a branching map of eight steps. You start at the left, pick one of the nodes connected to where you are, and work your way to the boss on the right. You cannot go back, so choose the path that gives you what your body needs.

FIG. 9 *The map of the Foundry Coast. The skull marks where you are.*

SECTOR
A scrolling combat section. Draft a segment after.

ELITE
A harder sector with an elite. Better draft and more Marrow.

SHRINE
Rearrange your body. Heal Scales or segments.

FORGE
Fuse identical segments, or reforge one.

MARKET
Spend Marrow on segments, healing, embers.

EVENT
Something waits in the smoke.

BOSS
The region boss. It guards a Relic vertebra.

◆ SECTORS AND DRAFTS

A sector is a stretch of scrolling battle built from several waves. Clear it and you **draft**: choose one of three segments, or skip it for 15 Marrow. Elite sectors end with an elite enemy and offer better segments. Every new region adds new segments to the drafts.

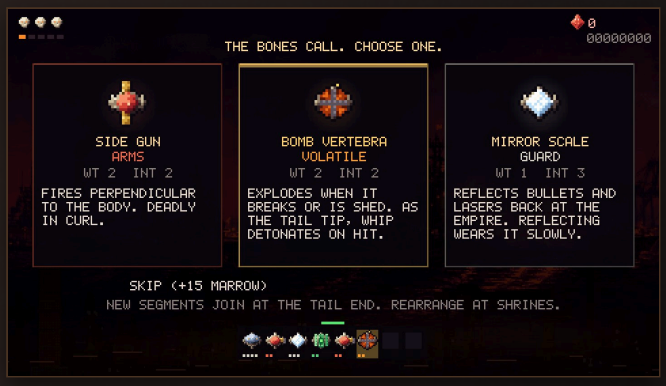


FIG. 10 *The draft. The new bone joins at the tail; the preview shows where.*

◆ THE BOSS AND THE RELIC

At the end of the map waits the region boss. Beat it and you choose one of three Relics (or 60 Marrow), your body is fully mended, and you fly on to the next region with a Scale restored.

SHRINES

FIG. 11 *Rearranging the body at a Shrine. Pick a segment up and carry it.*

Shrines are quiet places. Here you can **rearrange the body** as much as you like (with the keyboard, or by dragging segments with the mouse), and then take **one** blessing: mend the skull (+1 Scale) or mend every bone. You can also **test the body** on a firing range of harmless drones before you commit.

FORGES

Fuse two identical segments into one of the next tier (20 Marrow), or **reforge** a segment into another of the same family (10 Marrow). The result of a reforge is random.

SMUGGLERS' MARKETS

FIG. 12 *A market on the Foundry Coast.*

Markets sell segments, Scales, Embers, full repairs and, now and then, a **breath mod** (55 Marrow) that permanently changes your Skull's attack for the rest of the run:

MOD	EFFECT
SPREAD	extra streams fan out
PIERCE	shots pass through one more enemy
RICOCHET	shots bounce to a second enemy
BURN	hits set a slow poison burn
SLOW	hit enemies move and fire at half speed

EVENTS

Something waits in the smoke: a furnace vent, a smuggler's barge, a wounded gunboat, a shrine of ribs. Events offer choices, some generous, some risky. Read them carefully. The empire is not the only thing out there that wants your bones.

CHAPTER X

The Six Skulls

The serpents had many heads, and more than one of them survived. Each Skull flies the same road with a different breath, a different Burst and a different starting body. Unlock them in the Ossuary.

The Waking Skull

BREATH: FIRE · BURST: BEAM · STARTING SKULL

Fire stream that spreads with level. Burst: a wide fire beam.

SCALES 3 SLOTS 8 STARTS WITH PLATE VERTEBRA, PLATE VERTEBRA, PLATE VERTEBRA

The Storm Skull

BREATH: LIGHTNING · BURST: CHAIN · UNLOCK IN THE OSSUARY

Short lightning arcs that chain. Arc effects +50%. Burst: chain lightning across the screen.

SCALES 3 SLOTS 8 STARTS WITH PLATE VERTEBRA, PLATE VERTEBRA, ARC COIL

The Hollow Skull

BREATH: BOLT · BURST: LANCE · UNLOCK IN THE OSSUARY

Slow piercing bolts. 12 spine slots, weaker breath. Burst: a piercing lance.

SCALES 3 SLOTS 12 STARTS WITH SPARE RIB, PLATE VERTEBRA, SPARE RIB, FIN, SPARE RIB

The Iron Skull

BREATH: CANNON · BURST: SHOCK · UNLOCK IN THE OSSUARY

Heavy cannon shots. +2 Scales, but slower. Burst: a shockwave.

SCALES 5 SLOTS 8 STARTS WITH BULWARK, BULWARK

The Glass Skull

BREATH: NEEDLE · BURST: MIRROR · UNLOCK IN THE OSSUARY

Rapid needles. 1 Scale; blocked bullets give double Charge. Burst: every bullet on screen turns on its owner.

SCALES 1 SLOTS 8 STARTS WITH MIRROR SCALE, MIRROR SCALE, MIRROR SCALE, MIRROR SCALE

The Twin Skull

BREATH: TWIN · BURST: TWIN · UNLOCK IN THE OSSUARY

Two weak breaths, up and down. Starts with a Splitter. Burst: two diagonal beams.

SCALES 3 SLOTS 8 STARTS WITH SPLITTER, PLATE VERTEBRA, PLATE VERTEBRA, PLATE VERTEBRA, PLATE VERTEBRA

STORM *The Storm Skull's chain lightning jumps from target to target.*

HOLLOW *The Hollow Skull's bolts pierce whole formations.*

IRON *The Iron Skull's cannon and shockwave Burst.*

GLASS *The Glass Skull turns every bullet on screen against its owner.*

TWIN *The Twin Skull breathes up and down at once.*

CHOOSING A SKULL

Waking is the all-rounder. **Storm** loves Arc Coils and the Storm set. **Hollow** trades breath for the longest spine in the game. **Iron** is slow but forgiving. **Glass** is for pilots who never get hit. **Twin** covers both flanks and grows a forked tail.

CHAPTER XI

Bestiary

The empire builds its war machines the way it builds everything: out of serpent bone and spite. Every enemy you meet is recorded in the Codex. These are the ones you will meet most.

Drone

FOUNDRY COAST

Cheap flying fodder from the Foundry Coast assembly lines. Every bullet they waste on your body feeds your Charge.

Gunboat

FOUNDRY COAST

Coastal patrol craft. Fires aimed bursts at the head. It is how the empire teaches you to block.

Crane Hook

FOUNDRY COAST

Dockyard cranes that hook vertebrae out of anything. Pull away hard, whip the hook, shoot it, or shed.

Welder

FOUNDRY COAST

Repair drones with short-range torches. They melt segment integrity quickly. Whip them away.

Thief

EVERYWHERE

A sleek scavenger that steals your tail end and runs. Kill it and catch your bone.

Dock Turret

FOUNDRY COAST

Fixed guns on girders and gantries. Bodies scraping past them take the worst of it.

Glass Wasp

SPIRE GARDENS

Fast glass hunters from the Spire Gardens. They thread the gaps in a loose body to reach the skull. Curl shuts the gaps.

Pruner

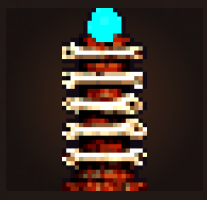
SPIRE GARDENS

Gardening drones that cut along a marked line. Anything of you behind the cut falls away. Catch it.

Seed Turret

SPIRE GARDENS

Planters that spit seeds. Seeds that hit a segment take root and weigh it down. A Breath Burst burns them off.



Arc Pylon

STORM ENGINES

Pairs of storm pylons that close a circuit of lightning between them. Destroy one to open the gap.

EMP Mine

STORM ENGINES

Drifting mines that pulse. Segments inside the pulse go dark for three seconds: no guns, no shields.

Storm Kite

STORM ENGINES

Lens-kites that fire lasers straight through ordinary bone. Only Prism and Mirror segments stop them.

Bone Crawler

OSSUARY MINES

Mine vermin with ribs for legs. They run along the cave walls and leap onto your body to gnaw a vertebra. A latched crawler is dead weight. Whip it off.

Crusher

OSSUARY MINES

Ore-presses older than the empire. Indestructible. Every pass between them is a question of timing, and of how long you are.

Mimic

OSSUARY MINES

A cage of serpent cartilage that learns the shape of your tail end and grows the same gift. Change your tail, change the fight.

Lancer

IMPERIAL RING

Courier of the ring city. Its lance pierces every vertebra in a line: Mirror and Prism are no help. Move the body.

Tractor Frigate

IMPERIAL RING

A white hull with a violet dish that drags anything bony toward it. Brace and the field slides off you.

Mirror Guard

IMPERIAL RING

Imperial guard behind a shield of polished glass. Your shots come back at you. Whip, Coil, bombs and the Burst still bite.

ELITE VARIANTS

Deeper into the road, and with Heat, some enemies arrive **shielded** (a glowing ring that soaks damage), **splitting** (they burst into two drones) or **enraged** (faster and tougher). Their markings tell you which.

◆ ELITES

The Foreman

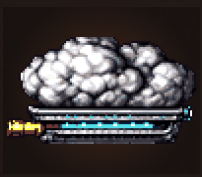
FOUNDRY COAST

Elite overseer gunship. Fans, rings and needle streams. Drives drones before it.

The Espalier

SPIRE GARDENS

Elite lattice frame of brass and glass, trained like a fruit tree. Fires seed walls and releases wasps.



The Thunderhead

STORM ENGINES

Elite cloud-ship. Sweeping lasers, EMP mines and rings of charged shot.

The Excavator

OSSUARY MINES

Elite drill-tractor. Charges along a marked line and brings the ceiling down after it.

The Praetorian

IMPERIAL RING

Elite of the palace guard. Twin lances, tractor field, mirror plating and an escort of guards.

FIG. 13 *The Thunderhead sweeps lasers across the Storm Engines.*

CHAPTER XII

Regions and Bosses

The road to the capital crosses five regions, each harder than the last, each with its own enemies, terrain, music and guardian. There are rumours of a sixth.

I · The Foundry Coast

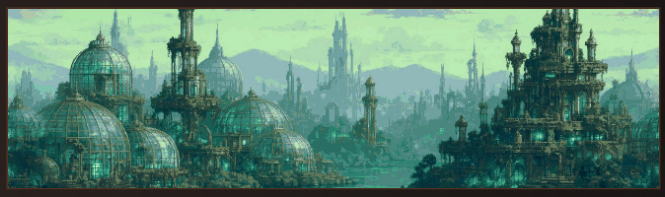
The burning docks where the empire builds its fleet. Drones, gunboats and cranes that hook bones out of anything. Learn to block here.

The Drydock

REGION BOSS

A half-built battleship with a serpent spine for a keel. It welds new guns onto itself while you fight it.

Old bones say: Kill the welding arms first: while they live, the furnace core is armoured. In the second phase, cranes drag hooked segments into the furnace. Whip them, or shed what they grab.



II · The Spire Gardens

Glasshouses built on the serpent's ashes. Wasps slip through the gaps in a loose body, pruners cut it in half, and seeds take root in your bones.

The Gardener

REGION BOSS

A towering pruning machine that grew gardens on the serpent's ashes. Its heart sits in a ring of vines: Coil it, or burn the vines.

Old bones say: The Gardener's heart sits in a ring of vines. Burn the vines, or Coil the heart. Curl against wasps; catch what the pruners cut.

III · The Storm Engines

Storms kept in cages of copper. Pylons close circuits of lightning, EMP mines blind your segments and kites fire lasers that go straight through bone.

The Conductor

REGION BOSS

A captive storm in a cage of capacitors. Its lasers ignore ordinary shields. With a Prism or a Mirror you can send them back.

Old bones say: Its lasers ignore plates. Bring a Prism or a Mirror and send them back. Break the capacitors to weaken the cage.

IV · The Ossuary Mines

Tunnels where the empire still digs bones. Crawlers leap onto your body, crushers close on the long-bodied, and mimics copy your tail.

The Bonewright

REGION BOSS

Built from the serpent's ribs. It studies your body and grows the same one, bone for bone. At half strength it studies you again.

Old bones say: The Bonewright grows a copy of your body, bone for bone, and studies you again at half strength. Change your arrangement and its copy is wrong.

V · The Imperial Ring

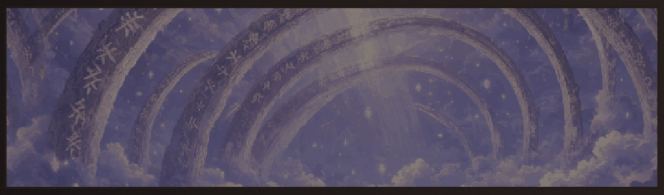
The capital in the clouds. Lances that pierce a whole spine, tractor frigates, mirror guards. Everything here is polished, and everything shoots back.

The Engineer-Queen

REGION BOSS

She keeps the serpent's heart beating to light the capital. A ring of mirrors, tractor fields that pull relics out of a spine, and at the end, the heart itself.

Old bones say: The Engineer-Queen hides behind a ring of mirrors and tractor fields that pull relics out of a spine. Brace against the pull. At the end, the heart itself.



VI · ???

The lore fragments in the Ossuary speak of a place above the capital where the last serpent did not fall, but rose. They say the way is only open to a skull that reaches the queen's gate carrying three relics, and that has never let go of its tail.

What waits there, and the endings it leads to, we leave for you to find.

CHAPTER XIII

Difficulty and Heat

Choose how hard the empire hits back. The difficulty is chosen at the start of every run; Heat unlocks after your first victory.

MODE	WHAT CHANGES
Story	+2 Scales and slower bullets. Segments are almost immortal: only thieves, hooks and flame can take them. Half score.
Standard	The game as designed. Segments are twice as tough as in Arcade.
Arcade	One Scale and base segment toughness. Three credits: when you fall, continue with half your body. Score ×1.25.

◆ HEAT

Heat modifiers stack. Each one you switch on adds 10% to your final score, and each Heat level has its own leaderboard in Records.

HEAT	EFFECT
BRITTLE BONES	Segments start every sector at -1 integrity.
HUNGRY EMPIRE	Enemies have +25% HP.
TIGHT SPACES	More length-sensitive terrain.
THIEVES' GUILD	Thieves appear in every sector.
NO SHRINES	No Shrines in region 1.
HEAVY MARROW	Weight penalties doubled.
PIERCING FIRE	One bullet in five pierces a segment.
STARVED FORGE	Forges cost double.
FAST FORWARD	Scroll speed +20%.
BONE TAX	Each boss takes one segment of your choice.

THE CONTINUE SCREEN

In Arcade, falling shows a ten-second countdown. Press confirm to spend a credit and fly on with half your body and one Scale; press back to give up and see your score.

CHAPTER XIV

Other Ways to Fly

DAILY RUN

FIG. 14 *Today's Daily Run. Same seed, same Skull, for everyone.*

Every day there is one Daily Run: the same map, the same waves and the same Skull for every player in the world, on Standard with no Heat. You get **one attempt**. At the end you receive a **daily code** that encodes the date, your score and your Skull, ready to share and compare.

ARCADE GAUNTLET

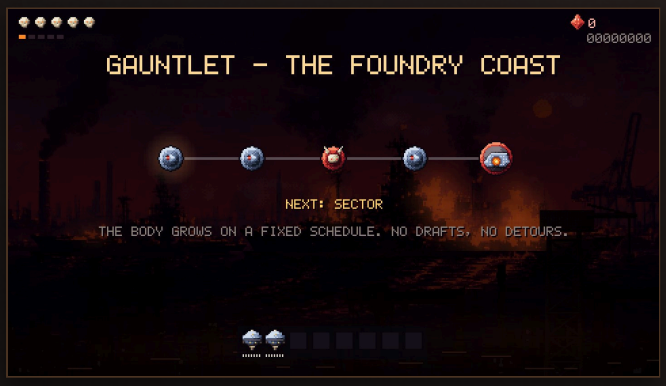


FIG. 15 *The Gauntlet: five fights per region, no detours.*

The classic shooter experience: a fixed route of five fights per region (sector, sector, elite, sector, boss), no drafts, no shops. Your body grows on a fixed schedule after each fight, the way a power-up chain grows in an arcade game, and each boss still gives a relic. It has its own music and its own leaderboard.

PRACTICE

FIG. 16 *Practice: pick a region, a fight, a Skull and up to ten segments.*

Practice lets you replay any region you have reached, against an ordinary sector, its elite or its boss, with any unlocked Skull and any body of up to ten segments built from the segments you have unlocked. There are no rewards and no Bone Memory: it is a place to learn a boss or test a build.

RECORDS

FIG. 17 *Records keeps your top five scores per board.*

Records keeps your five best scores for every combination of mode, Skull and Heat level: Waking at Heat 0 is a different board from Storm at Heat 3, and Gauntlet and Daily runs have their own boards. The final score includes the Heat bonus and the difficulty multiplier.

CHAPTER XV

The Ossuary

Every run, won or lost, leaves something behind. The bones you broke, the sectors you cleared and the bosses you killed become **Bone Memory**, and the Ossuary is where you spend it.

Unlocks broaden your options rather than making you stronger: new segments in the drafts, new Skulls, extra spine slots, a second look at drafts, a hidden shrine. The full list is on the next page.

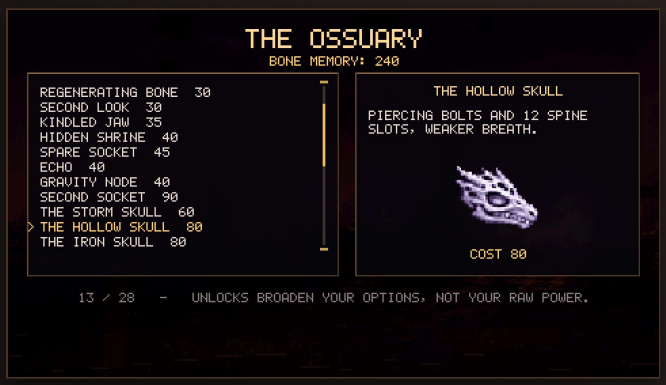


FIG. 18 *The Ossuary. Bone Memory is shown at the top.*

◆ LORE FRAGMENTS

As your total Bone Memory grows, eight fragments of the serpent's story surface in the Ossuary. Read them. Some of them are instructions.

◆ THE CODEX

Every enemy you meet and every segment you grow is recorded in the Codex, with a portrait and a few lines of advice. Unseen entries stay dark.

FIG. 19 *The Codex.*

◆ ECHOES

The skull remembers its last bodies. The bones of your recent runs may return as pale **Echoes** that fly against you deep in the empire, shooting the way you did.

◆ ENDINGS

There is more than one way for this story to end. The summary screen counts the endings you have found.

OSSUARY UNLOCKS

UNLOCK	COST	EFFECT
Rear Gun	20	Adds the Rear Gun to the draft pool.
Fin	25	Adds the Fin to the draft pool.
Bulwark	25	Adds the Bulwark to the draft pool.
Regenerating Bone	30	Adds Regenerating Bone to the draft pool.
Second Look	30	Reroll one draft per run.
Kindled Jaw	35	Start runs at Breath level 2.
Hidden Shrine	40	An extra Shrine on the Foundry Coast map.
Spare Socket	45	+1 spine slot (9 segments).
Echo	40	Adds the Echo to the draft pool: it copies the segment in front of it.
Gravity Node	40	Adds the Gravity Node to the draft pool: it bends bullets into your body.
Second Socket	90	+1 more spine slot (10 segments).
The Storm Skull	60	Lightning breath that chains; arc effects +50%.
The Hollow Skull	80	Piercing bolts and 12 spine slots, weaker breath.
The Iron Skull	80	Heavy cannon, +2 Scales, slower. Starts with two Bulwarks.
The Glass Skull	100	Rapid needles, 1 Scale, double Charge from blocks.
The Twin Skull	140	Two breaths, up and down. Starts with a Splitter.
Lance	35	Adds the Lance: hold Fire to charge, release to pierce.
Mine Layer	35	Adds the Mine Layer: proximity mines along the trail.
Scanner	35	Adds the Scanner: weak points and route previews.
Anchor	40	Adds the Anchor: long Brace, no knockback.
Chain Charge	40	Adds the Chain Charge: volatile chain reactions.
Overloader	45	Adds the Overloader: doubles the segment behind it, then burns out.
Phase Joint	45	Adds the Phase Joint: whip through walls.
Hook	45	Adds the Hook: whip grabs small enemies as shields.
Splitter	50	Adds the Splitter: a forked tail.
Old Bones	120	Ten alternative Relics join the boss rewards.

CHAPTER XVI

Options and Sound

FIG. 20 *Settings, reachable from the title screen and the pause menu.*

SETTING	WHAT IT DOES
Auto-fire	The skull breathes all the time.
Curl / Brace as toggle	Tap once to start, again to stop.
CRT filter	Scanlines, a curved screen and a soft vignette.
Screen shake & flash	Turn off to calm explosions and Bursts.
Always show hitbox	Draws the skull's real hitbox at all times.
Music / SFX	Volume, in steps of 10%.
Game speed	70% to 100%. Slower is easier.
Enemy bullets	Magenta, amber or cyan, for colour-blind players.
Controls	Remap every action (page 7).

PHOTOSENSITIVITY WARNING

Bursts, explosions, lightning and boss attacks produce bright flashes and screen shake. If you or anyone in your household is sensitive to flashing light, turn off **Screen shake & flash** before playing, play in a well-lit room, and stop if you feel unwell.

◆ SAVING

Your Bone Memory, unlocks, settings and records are saved in your browser automatically. A run in progress is saved at every map screen: close the tab and choose *Continue Run* next time. Clearing your browser data for the game's site erases the save.

CHAPTER XVII

Wisdom of the Old Bones

The serpents were old when the empire was young, and their bones remember a great deal. Here is some of it, free of charge.

1. BLOCK ON PURPOSE.
Every block is Charge. Steer the body into bullet streams; the skull belongs in the gaps.

2. KEEP BREATHING.
Your turrets fire with your breath. Silence the breath and half the body goes quiet.

3. ORDER BEATS RARITY.
An Amplifier in front of the right turret is worth more than a rare bone in the wrong place. Visit Shrines.

4. MEND BEFORE YOU SPEND.
At a Shrine, a Scale is usually worth more than repairing bones that will knit anyway.

5. SHORT IS SAFE, LONG IS STRONG.
A long body scores and blocks more but scrapes walls and feeds crushers. Know when to shed.

6. WHIP EARLY, WHIP OFTEN.
The whip recharges fast. Use it on hooks, crawlers, welders and mirror guards before they hurt you.

7. COIL THE BIG ONES.
With six segments, a tight loop around a heavy enemy does more damage than a full breath.

8. SAVE THE BURST FOR THE BOSS.
Or not: a Burst that clears a hard wave saves Scales. Bursts recharge faster than you think.

9. PRISMS AND MIRRORS FOR STORMS.
From the Storm Engines on, lasers ignore plates. Carry at least one.

10. CATCH YOUR BONES.
A broken segment can be caught for two seconds. Turn round for it; it is usually worth it.

11. READ THE TAIL.
Mimics copy your tail end. Thieves steal it. Put something you can spare there.

12. FAIL FORWARD.
Every run earns Bone Memory. The Ossuary turns failure into options.

"They took our bones to light their streets. Light them better."

— A LORE FRAGMENT

CHAPTER XVIII

Quick Reference

CONTROLS

←↑→↓ WASD	Move
Space J	Breathe
K	Curl
L	Brace
I	Whip
U	Burst (Charge full)
O hold	Shed tail
Shift	Focus
Esc P	Pause

MAP NODES

SECTOR

ELITE

SHRINE

FORGE

MARKET

EVENT

BOSS

NUMBERS WORTH KNOWING

Spine slots	8 (+2 Ossuary, 12 Hollow)
Free weight	6, then −3% speed per point
Brace	3 seconds
Whip	1.2 s cooldown, ×2 damage
Coil	6+ segments
Catch window	~2 seconds
Draft skip	+15 Marrow
Relic skip	+60 Marrow
Fusion / Reforge	20 / 10 Marrow
Breath mod	55 Marrow
No-hit sector	+2,000 points
Heat	+10% score each

BONE SETS

PLATED	Guard segments take 25% less damage.
STORM	Every blocked bullet sparks an arc at the nearest enemy.
HIVE	Homing, Flak and Arc fire 35% faster.
MIRROR	Reflections hit twice as hard; mirrors wear half as fast.
EMBER	Breath and turret shots deal 30% more damage.

You are a skull. A small one.

The Empire of Gears built its cities from the bones of the last sky-serpent. Fly from the burning docks to the capital in the clouds, tear the empire's war machines apart, and grow a new spine from the pieces: plates and turrets, mirrors and bombs, healers and relics, chained behind you in whatever order you dare. Block with it, curl it, whip it, shed it, and when the Charge is full, burn everything in a straight line.

SIX REGIONS · SIX SKULLS · FIFTY BONES · ONE SPINE

GROW THE SPINE. BREAK THE EMPIRE.

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