

SUNSET EXPRESS

FUNERAL TRANSPORT INC.

(Working Title)

GAME DESIGN DOCUMENT (GDD)

2-4 Player Co-op Physics-Based Rage Platformer

Version 0.3 — Team Revision + Decision Updates (Final Concept)

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Engine: Unity (C#) — Target Platform: PC / Steam

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1. Overview

1.1 One-Sentence Description (Elevator Pitch)

2-4 friends run a failing funeral transport company they started for the money, hauling coffins to their destinations at the mercy of physics; every dropped coffin is a laugh, and every completed contract is a miracle.

1.2 Project Snapshot

Field	Value
Genre	Co-op physics-based rage platformer ("friend slop")
Player Count	2-4 (online co-op, host-based)
Engine / Language	Unity / C#
Networking	Fish-Networking + FishySteamworks (primary candidate) or Photon Fusion Host Mode
Platform	PC (Steam), targeting an Early Access release
Camera	Third-person
Session Length	10-30 min per contract; ~2-3 hours of total content at EA launch
References	Chained Together, Log Riders, An Eggstremely Hard Game, Lethal Company (structure), Human Fall Flat (physics feel), Getting Over It (fairness philosophy), Content Warning (social systems)
Tone	Dark humor, absurd, irreverent but charming
Target Audience	Co-op players aged 16-30 who play with friend groups; Twitch/YouTube content creators

1.3 Why This Game? (Opportunity Analysis)

The formula behind the "friend slop" genre is clear: a shared physics burden + precise controls + failure that is funny. Carrying a coffin naturally delivers all three, while also providing a strong thematic hook — taking a body to its burial site is both absurd and rich with storytelling potential.

In Chained Together, the bond between players is an abstract chain; in our game, that bond is a physical object. This is an advantage: the coffin is not passive cargo, but the game's "fifth player." It slides, tips over, the corpse shifts inside it, and the lid opens. The coffin itself generates clips.

Marketing in this genre is driven almost entirely by Twitch/YouTube clips. Every layer of the design should be tested against one question: "Is this moment shareable?"

1.4 Design Pillars

1. **Fair Jank — Every fall should be funny, but it should feel like my fault. Physics should be 90% predictable and 10% chaotic. The line between frustrating and unfair is the lifeblood of the game.**

The success of **Getting Over It** and **Chained Together** comes from making each failure feel like "that was on me."

2. **Coffin = Fifth Player** — The coffin is the star of the game. Its center of mass shifts, the corpse moves inside it, and the lid opens. If it is only a "heavy box," we are no different from any other co-op carrying game.
3. **Coordination Comedy** — Every obstacle follows the formula "easy alone, a nightmare together." Forced coordination is the engine behind the shouting, blame, and comedy between players.
4. **Modular Contract Structure** — A contract-based modular structure replaces a linear story. Every corpse is a mechanical variation, and every level is a self-contained job. Content multiplies combinatorially, making it possible to keep Early Access fresh.
5. **Small Scope, High Polish** — 3-4 excellent contracts by beta are better than 10 mediocre ones. **Chained Together** succeeded with roughly two hours of content. Small team, 3-4 month EA target, high replayability. To stay consistent with that goal, the EA launch set is fixed at four contracts (see 8.2 and 15).

2. Narrative, World, and Tone

2.1 Premise: Sunset Express Funeral Transport Inc.

The players are four friends who got together for the money and entered the corpse-transport business. They work for a cheap, semi-legal funeral transport company that proudly advertises a "48% delivery success rate." Whether the company is a front, who owns it, and why the bodies are always strange is never fully explained; these details are implied through environmental storytelling and contract briefs.

There is no single overarching story. Narrative is carried by the bodies themselves and by the contract text: every deceased person has a short biography, an absurd final request, or a suspicious cause of death. Writing is cheap to produce and adds a great deal of personality.

2.2 Tone Guide

- Dark humor, but not cruelty. The game makes fun of death, not the dead — the deceased are strange and lovable, not victims.
- Corporate absurdity aesthetic: company slogans ("Wherever it is. However it takes."), a customer complaint board, and HR warning posters ("Do not eat on top of the coffin.").
- The game never takes itself too seriously, but the physics system takes itself extremely seriously. The comedy comes from that contrast.

2.3 Contract Brief Format

Each contract is presented on the notice board in the hub using the following template:

Field	Example
Deceased	Hayri "Giant" Kayalar, 54 — retired sumo wrestler
Final Request	"Bury me at the summit of the mountain where I trained."
Delivery Point	Eagle Hill — elevation 1,240 m
Fee	£4,800 + on-time delivery bonus
Company Note	"The deceased is heavy. Wear your back braces. Not covered by insurance."
Difficulty Indicator	Shovel icon x4 (out of 5)

2.4 Funeral Report and Epilogue

At the end of a contract, the team receives a "funeral report" rather than a score. Coffin damage, how many times the corpse fell out, delivery time, and missing parts (lid, shoe, etc.) are turned into a comedic epilogue: "The deceased was buried in three pieces and without shoes. The family is not accepting condolences." The report is also generated as a shareable visual card, feeding the viral loop.

3. Core Gameplay Loop

3.1 Macro Loop

1. **Hub** — The team gathers in the company hub (one small space — warehouse/office) and chooses a contract from the notice board.
2. **Contract Start** — The level loads with the coffin at the starting point. A short 2D cinematic creates the impression that the body has just been placed inside (cheap to produce, but tone-setting). The brief is read out with a short piece of darkly comic text.
3. **Carry** — The team moves the coffin through an obstacle course to the delivery point. Roughly 90% of the game happens here.
4. **Burial** — A grave is ready at the delivery point; the coffin is lowered into the pit, a short burial scene plays, and the funeral report is shown.
5. **Payout and Blame** — The fee and bonuses are deposited. A blame-statistics screen shows who dropped the coffin how many times, Employee of the Month, and similar stats.
6. **Spending and Progression** — Money is spent on equipment and cosmetics; new contracts are unlocked.

3.2 Micro Loop (Second-to-Second)

Approach → grab → lift → move in coordination → take position at the obstacle → crisis moment (sliding/tilting/wind) → shouting → recovery or disaster → try again. The emotional rhythm of the micro loop should be "tension builds → release → laughter → renewed motivation." Checkpoint placement controls this rhythm.

3.3 Checkpoint Philosophy

In a rage game, checkpoint philosophy is part of the game's identity. Our approach is thematic: the delivery route contains intermediate "rest-stop graveyards." A checkpoint is activated when the coffin is placed fully onto the stone platform in one of these graveyards. There are no checkpoints between graveyards — a fall means returning to the last one. Difficulty 4-5 contracts have fewer graveyards; the hardest contracts have none at all (the Getting Over It end of the spectrum).

3.4 Failure States

- If the coffin falls into a lethal zone (bottom of a cliff, end of a river current, lava, etc.): the team returns to the last checkpoint and the coffin damage counter increases.
- If a player falls: the player respawns beside the coffin, on safe ground snapped near it. One second before respawn, the spawn point is telegraphed with a blinking effect. Exploit safeguard: respawning has a 3-5 second delay and can only occur on safe ground near the coffin, so deliberate death cannot become a shortcut for skipping cliffs.
- If the corpse falls out of the coffin: IT IS PERMANENT — the corpse can never be placed back inside and remains where it fell. Players may continue carrying the coffin without the body (as a comedy

element); completing the level without the corpse causes a major reduction to payout and end-of-level rating (see 9.5). A line of shame is added to the funeral report.

4. Coffin: Physics Architecture and Carrying System

4.1 Base Setup

- The coffin is a single Rigidbody using compound colliders (box body + separate lid collider). The lid is attached to the body with a HingeJoint and is not locked.
- Mass: 2-3x the player mass (if the player is 70 kg, the coffin is 150-200 kg). Heavier values strain the physics solver and produce jitter; lighter values fail to feel like a meaningful load.
- Players are never connected to the coffin through a parent/kinematic relationship. Every connection is physical and uses a ConfigurableJoint — this is where the desired "elastic but controllable" jank comes from.

4.2 Grab System

1. **Grab Points** — Defined grab-point transforms are placed at the four corners of the coffin (or in a 2+2 side configuration). When a player approaches and presses grab, they connect to the nearest available grab point. In 2-player mode, two grab points are used (head and foot ends).
2. **Joint Setup** — The joint is created between the player's Rigidbody and the coffin's Rigidbody, not between the player's hand and the grab point; the anchors are set to the hand and grab-point positions.
3. **IK Separation** — Hand IK is purely visual: the hands reach toward the physical connection point through IK but do not participate in the physics simulation. Keeping the visual layer separate from the physics layer is also a lifesaver for network synchronization.
4. **Soft Limit** — The linear limit is not set to zero; 0.1-0.2 m of springy tolerance is left in place (linearLimitSpring). A hard joint causes physics explosions; a soft joint creates controlled flex. This is the source of the Human Fall Flat feel.

4.3 Grip Break (Hand Slip) System

Unity's built-in breakForce is not used — once a joint breaks, it is destroyed, turning reconnection into a state-management problem. Instead:

1. Joint tension is measured every FixedUpdate (currentForce or distance deviation between anchors).
2. When tension exceeds 70% of the threshold, the player receives a warning: hand shake, controller vibration, and an "I'm losing it!" sound cue. The player gets a chance to react, preserving the fairness pillar.
3. If the threshold is exceeded, the code triggers its own "grip slipped" event: the joint is removed cleanly and can be grabbed again after a short cooldown.

4.4 Center of Mass Manipulation (The Heart of the Game)

Rigidbody.centerOfMass is set manually and updated every frame based on the corpse's position inside the coffin. The chain reaction works as follows:

1. The coffin tips forward → the corpse slides forward inside the coffin → centerOfMass moves forward → the coffin wants to tip even farther.

This positive feedback loop drives the panic moments of "keep it level, damn it!" Sliding is intentionally slow (about 1.5-2 seconds for a full shift) so players have time to notice and react. Slide speed is scaled by a multiplier based on the corpse variant (see Section 5.3).

4.5 Carry Feel and Speed

No artificial speed multiplier is applied based on the number of carriers. Character movement force remains constant; slowdown emerges physically from the coffin's mass and friction. With four players carrying, the load is naturally distributed and the team becomes faster. This both feels more honest and lets the physics itself solve the 2-4 player balance.

4.6 Coffin Damage System

- The coffin does not break apart, but it cracks: the damage counter rises with impact severity, and visible cracks/broken boards accumulate.
- Damage affects gameplay: on a heavily damaged coffin, the lid opens more easily and one grab point becomes a "broken handle" with a lower break threshold. If all four players jump at the same time while the coffin is heavily damaged (see 6.5), the chance of the corpse falling out rises significantly.
- The coffin never becomes completely destroyed — the body of the coffin always remains carryable. If the damage counter reaches maximum, only the LID is fully destroyed: it is permanently removed and corpse-loss risk is locked at its highest level. A contract can never enter a soft lock.
- Damage state affects both the funeral report and payout deductions — it is a tool for comedy and light economic pressure, not a score.

4.7 Coffin in Water: Raft Mode

The coffin floats (buoyancy force proportional to submerged volume). In river/swamp contracts, the coffin is used as a raft — this is where the Log Riders DNA comes in. As players climb onto it, however, it begins to sink: in a four-player team, at most two can ride while the others swim and push. The argument over "who is on the raft and who is in the water" is intentional design. The corpse's weight and position also affect raft balance; Raft Mode is the second stage for the center-of-mass system.

5. Corpse System

5.1 Two-Mode Simulation

For performance and network stability, the corpse exists in two separate modes. Fully simulating the body as a ragdoll inside the coffin is forbidden: the colliders rub against the coffin's interior, create jitter, and become a nightmare to synchronize over the network.

Mode A — Inside the Coffin (Default)

- The corpse is a visual mesh plus one simple simulated weight point; there is no real ragdoll.
- A 1D sliding simulation runs in the coffin's local space: based on the coffin's tilt, the corpse slides along the head-to-foot axis and drags the centerOfMass with it.
- The corpse mesh is rendered according to this slide position plus a light procedural swaying animation. Cheap, stable, and network-friendly (sync cost: a single float).

Mode B — Outside the Coffin

- When the lid opens and the corpse falls out, it switches to a simple ragdoll (basic ragdoll; an active ragdoll is not required). The ragdoll is only visual/physical scene dressing — players can bump into and push it, but CANNOT CARRY it.
- The moment the corpse falls out, it can never be placed back in the coffin; it remains where it fell. The loss is permanent (see 3.4) — the team continues without the body and accepts the deduction.
- Scope note: removing ragdoll carrying eliminates both ragdoll grab mechanics and most of the Mode B network synchronization burden (only the fall event + resting pose are synchronized). This is a deliberate cut aligned with the shortened EA schedule.

5.2 Lid Behavior

The lid is attached with a HingeJoint and has a weak latch: if the coffin tilts beyond a certain angle or receives a hard impact, the lid opens. A purchasable "lid lock" (see Section 9) raises the opening threshold but never eliminates the risk entirely — no insurance, no guarantees. If the coffin damage counter reaches maximum, the lid is destroyed completely and corpse-loss risk is locked at its highest level (see 4.6).

5.3 Corpse Variants (Difficulty Modifiers)

Every corpse is a mechanical variation. Crossing corpse type with level design multiplies the content combinatorially. EA launch set:

Corpse	Mechanical Effect	Design Note
Standard Deceased	Reference values: 80 kg, normal slide speed.	Baseline for tutorial and core balancing.
Obese Man (~180 kg)	Total coffin mass x2; almost impossible to lift with 2 players, makes 4 players feel mandatory.	Star of four-player coordination contracts. "Slippery" sub-variant: sweaty — grip-break threshold 30% lower.

Corpse	Mechanical Effect	Design Note
Sumo Wrestler	Center-of-mass disaster: heavily torso-weighted CoM, high slide acceleration.	Use with seesaw and balance obstacles.
Frail Elderly Woman (~45 kg)	The coffin is light — but in wind zones it gets thrown around like a sail.	Designed for wind/cliff contracts. The lightness is a trap: it looks easy, but it is not.
Basketball Player (2.15 m)	Does not fit in the coffin: the lid cannot close and the feet stick out. Feet catch on the environment (extra collider), lid is permanently open = constant corpse-loss risk.	A nightmare in narrow-passage contracts. Extremely high visual-comedy value.
"May Not Actually Be Dead" Man	Kicks under specific triggers (shake threshold, certain zones), applying an instantaneous impulse to the coffin.	Triggers must be predictable, not random. Main corpse for cursed-zone contracts.
Pharaoh (Sarcophagus)	Arrives in his own stone sarcophagus: a sealed sarcophagus is carried instead of the standard coffin. Highest mass class (~2.5x); the lid is SEALED — the corpse can never fall out and the lid-damage system is disabled. Handles are stone rings with a lower-than-standard break threshold (slippery stone).	Weight ↔ safety trade-off: zero corpse-loss risk, maximum carrying cost. In cursed zones, the sarcophagus emits readable tremor waves before entry. Corpse for prestige contracts.

5.4 Restless Deceased (Regional Reactions)

Certain zone types (graveyard, church, cursed forest) trigger shaking and small hops inside the coffin. Critical rule: these reactions are never random; they are tied to visually readable triggers (clear zone boundaries, an audio cue before entry). The amount of chaos increases without violating the fairness pillar.

6. Player, Controls, and Camera

6.1 Control Philosophy: Precision in the Character, Clumsiness in the Coffin

The character is controlled as 80% precise and 20% weighted: agile and responsive on their own, with all clumsiness coming from the coffin. The intended feeling is for the player to say, "I'm playing well; this damn coffin is the problem" — exactly the target emotion (the Chained Together school). Human Fall Flat-style deliberately clumsy character controls are consciously REJECTED: our chaos already comes from the coffin + corpse + three teammates. If the character also handles like they are drunk, chaos compounds and the fairness pillar (Pillar 1) collapses. The coffin and corpse are the sole sources of mechanical chaos — that clarity is intentional.

- Rigidbody-based character (not CharacterController) — required for compatibility with the joint system.
- Acceleration is short but not zero (0.1-0.15 sec): instantly reaching full speed feels wrong in a physics world; a brief acceleration both gives a sense of weight and allows precise platforming tuning. Stopping distance is very short — deaths caused by "I went one step too far" should read as the player's mistake, not as slippery controls.
- Air control is deliberately stingy: only minor correction is possible in the air. Strong air control makes platforming too forgiving; the sense of commitment when jumping/falling must remain.
- The character cannot topple over: the character itself is not a ragdoll. Loss of balance comes only from the coffin (if it tilts too far, it can drag the player through the joint).
- Movement force does not change while holding the coffin; slowdown comes from physics (see 4.5).

6.2 Control Architecture: Three Separate Layers

The control system is divided into three layers, and the layers do not interfere with one another:

1. **Layer 1 — Movement: Defined by the camera — WASD always applies force relative to the camera (camera-relative movement). W = the direction the camera is facing. Tank controls (A/D rotate the character) are NOT USED: combined with a free orbit camera, they add a mental translation layer that breaks players down in panic moments. In a rage game, the difficulty should come from physics, not input translation.**
2. **Layer 2 — Body orientation: Defined by the grab point — While moving freely, the character automatically turns toward their movement direction (smooth rotation toward velocity). While holding the coffin, the body locks facing the occupied grab point (upper-body IK already looks there). The result is natural strafing alongside the coffin without coding a separate strafe system.**
3. **Layer 3 — Coffin rotation: Defined by collective input — Coffin rotation does NOT come from character rotation; it comes only from collective rotation input (see 6.4). This separation is non-negotiable: if character orientation rotated the coffin, one player turning their camera could whip the coffin around and make four-player synchronization impossible.**

Single-control-scheme principle: grabbing the coffin does NOT change the button layout; it only changes the results of those inputs. Muscle memory should rely on one scheme during panic moments.

Backward movement detail: while holding the coffin, standing faced toward it and pressing away from the camera (walking backward) is 15-20% slower than walking forward. The reason is readability, not realism: the carrier walking backward (the front person descending a staircase) occupies the tensest position in the game. The slight slowdown makes that tension physically legible and brings accidents down to a pace players can process.

6.3 Control Scheme (Default, PC)

Input	Free	While Carrying the Coffin
WASD	Walk	Walk (feels the coffin load)
Space	Jump	Disabled (or a very weak hop) — exploit prevention
E (press)	Grab / Interact	Release (always works instantly — panic button)
Mouse Wheel / Q-Z	—	Raise / lower coffin (joint anchor height)
Shift	Sprint	Strong grip: break threshold +40%, movement speed -30% (consumes stamina)
F	Ping	Ping
T	Emote wheel: hold to open the wheel, release to perform the emote. Zero mechanical effect; purely a social signal. First set has ~6 emotes; an "exaggerated mourning wail" (adapted from AEHG's honk button) is the star of the first set.	Same
Enter	Text chat (for players without microphones)	Same
V	Voice chat (proximity, open mic by default)	Same

6.4 Collective Rotation

Coffin rotation is never left to one player: rotation inputs from all current carriers are combined. If everyone inputs the same direction, the coffin receives torque on that axis; conflicting inputs damp one another. Rotating it vertically for narrow passages requires synchronized input from all carriers — simple rule, coordination hell.

6.5 Jumping While Carrying and Four-Player Synchronized Jump

Jumping while carrying is enabled, but scales with participation: if one player jumps, their impulse is small and produces only a weak hop (not enough to clear an obstacle). If all four carriers jump AT THE SAME TIME, their impulses combine and raise the coffin noticeably higher — this is the solution mechanic for the "Ground Obstacle" archetype (see Section 7). There is no charge/cooldown mechanic; synchronized timing itself is the challenge.

- Exploit control is delegated to LEVEL DESIGN: areas that should not be bypassed by the four-player jump are protected with ceilings, overhangs, and geometry; jump height is tuned only to clear intended Ground Obstacle heights. Every new contract is reviewed specifically for four-player-jump exploits as part of the level-design checklist.
- Lid interaction: if the coffin is heavily damaged (and the lid has weakened), a four-player jump can cause the corpse to fall out — the risk/reward decision belongs to the players (see 4.6).
- Physics note: because four instantaneous impulses hit the joints at the same time, the grip-break threshold is temporarily increased during the jump-impulse window so that every synchronized jump does not trigger a mass "grip slipped" event. This behavior is included in the Stage 0 prototype test list.

The "Release" input must work instantly under all conditions — the player's last resort can never be taken away.

6.6 Shared Direction Reference: The "Press Forward!" Problem

The one real cost of camera-relative movement in this game is that when four cameras are facing four different directions, "press forward!" means something different to everyone. Some of this chaos is comedic capital and should not be fully solved. To keep it at the level of "solvable chaos," the head and foot ends of the coffin are made visually distinct, and a faint diegetic direction marker appears on the coffin while carrying. This visual language pushes team communication away from "forward/back" and toward "toward the head / toward the feet," which also fits funeral terminology ("lift from the head end!"). The ping system (F) supports this reference.

6.7 Gamepad

Gamepad is a first-class citizen, not a port left until the end (especially with the possibility of couch co-op; AEHG launched with full gamepad support). Mapping: left stick movement (camera-relative), right stick camera orbit, A/X jump, X/Square grab-release, LB/RB raise/lower coffin, LT or RT strong grip (Shift equivalent), D-pad ping and wail. Full input remapping support.

6.8 Camera Design

Decision: Hybrid Orbit Camera

A freely rotatable, pulled-back, high-angle orbit camera. We take the HEIGHT PHILOSOPHY of An Eggstremely Hard Game's diorama camera, not its camera architecture. Reasons:

1. **Information density** — In AEHG, the object that must be read is small and singular (the egg); ours is large and multi-part: a two-meter coffin, tilt angle, sliding corpse, and four player positions. A 10-degree forward tilt cannot be read from diorama distance — yet those 10 degrees are exactly when the corpse begins to slide. The camera must frame the coffin not as "an object in the scene" but as "an instrument that must be read," which means a medium distance.
2. **Content structure** — The contract catalog (city, mountain, river, interior, vertical) requires camera flexibility. A fixed high camera removes interiors and vertical content from the table — and variety is the core of our replayability story. The camera is chosen around the full content range, not the most restrictive scenario.

3. **Genre proof and clip economy** — The genre's major successes (*Chained Together*, *Human Fall Flat*, *Lethal Company*) use player-controlled cameras: comedy comes from watching your own disaster from YOUR perspective. Four players recording the same disaster from four different angles = four distinct clips from one moment. A diorama camera gives everyone the same image and weakens the viral loop.
4. **Risk balance** — The cost of free orbit is camera collision, a known and solvable engineering problem. The cost of a diorama camera is a structural restriction on content variety, a permanent design ceiling. Between an engineering problem and a design ceiling, choose the engineering problem every time.

Camera Parameters

- Default pitch ~30-40 degrees (noticeably higher than standard third-person — the AEHG lesson); distance is 1-1.5x farther back than a typical action game. During the vertical slice, 30- and 45-degree presets will be A/B tested. Decision criterion: "Do players notice coffin tilt without needing a warning system?"
- Wide FOV (75-85 horizontal): four players + coffin + obstacle must be readable at the same time. In this game, a narrow FOV creates information loss, not claustrophobia.
- When grabbing, the camera target smoothly shifts from the character toward a blend of "character + coffin center of mass," and the distance opens slightly. Orbit remains free — locking the camera to the coffin would be maddening in narrow passages.
- A per-level camera profile (min/max distance, pitch limits, interior settings) is stored as a ScriptableObject — the same architectural logic used for corpse profiles (see 12.3).

Camera Collision and Readability Rules

- Interior geometry is designed generously for the camera: ceilings are higher than the player strictly needs and stairwells are wide (*City Delivery* is the stress test for this rule).
- When the camera is trapped against a wall, WALL TRANSPARENCY is preferred over zooming in: zooming pushes the coffin out of frame, while transparency preserves information.
- Camera shake is used almost never: a physics game already has a screen full of motion; impact is communicated through sound + a brief FOV pulse. (Aligned with the accessibility section.)
- Camera orbit is a MANDATORY tutorial step and is not left for players to discover — a free lesson from AEHG's patch after "players did not notice the camera sign."
- Evaluation-park option: a "coffin camera" toggle — one button briefly centers the camera on the coffin as an inspection tool for the corpse/lid. It is added only if playtesting proves the need, not by default.

7. Obstacle Archetypes

Every obstacle follows the "easy alone, a nightmare together" formula. The archetypes below are the Lego pieces of level design; they are crossed with corpse variants to generate variation.

Archetype	Description	Skill Tested
Asymmetrical Passage	The coffin does not fit horizontally and must be rotated vertically. All carriers must provide synchronized rotation input.	Synchronized input, communication
Seesaw Bridge	A platform that tilts according to weight distribution. The positions of the coffin + 4 players determine balance; if one person panics and runs, everyone goes flying.	Positional discipline, staying calm
Staged Hand-Off	The coffin is lowered over an edge and handed down to players below. The co-op version of a trust fall.	Timing, trust
One-Person Side Task	One player releases the coffin to open a door / turn a winch; the other three wait while holding an unbalanced coffin.	Role distribution, "hurry up!" tension
Moving Ground	Sliding logs (a nod to Log Riders), rotating platforms, swinging gondolas. Easy to traverse alone; synchronization is mandatory with the coffin.	Rhythm, synchronized movement
Wind / Current Zone	The coffin catches the wind like a sail; its angle must be continuously adjusted as the wind changes direction.	Continuous micro-correction
Water Crossing (Raft Mode)	The coffin becomes a raft; at most 2 players can ride while the others push from the water. Current + obstacles.	Role negotiation, balance
Narrow Stairs / Ramp	Corpse sliding is triggered most strongly on slopes; the team must learn to hold the coffin against the incline.	CoM management (teaching archetype)
Ground Obstacle	An obstacle that all 4 carriers must clear by jumping at the same time with the coffin (see 6.5). If the timing is off, the coffin hits the obstacle and takes damage.	Synchronized timing, coordination

Rule: at most two archetypes may be combined at the same time within a single obstacle section.

Combinations of three or more are used only in Difficulty 5 contracts and never as the first obstacle after a checkpoint — fairness pillar.

8. Level and Contract Design

8.1 Structure: Contract Catalog, Not a Linear Campaign

The game does not tell one continuous story. Every level is an independent contract selected from the notice board in the hub. The advantages of this structure are that content production becomes modular (there is no chain of "you cannot start Chapter 4 before Chapter 3 is finished"), one new contract can be added each month during Early Access, and corpse x level crossovers make the same map replayable with different bodies.

Unlock logic is light: contracts are licensed with money according to difficulty tier (for example, buying a "Heavy Load Permit" for Difficulty 3+ contracts). This creates a sense of progression without forcing a fixed order.

8.2 EA Launch Contract Set (4 Contracts + Variants)

To remain consistent with Pillar 5 and the 3-4 month EA target, the EA set is fixed at four contracts. Summit Climb is planned as the prestige contract for the first major post-EA content update.

Contract / Theme	Difficulty	Primary Archetypes	Default Corpse	Notes
City Delivery — funeral home, apartments, traffic	1 (Tutorial)	Narrow stairs, asymmetrical passage, one-person side task	Standard Deceased	Absurd difficulty in an ordinary setting — comedy through contrast. All core mechanics are taught here.
Mountain Route — cliffs, rope bridges	2-3	Seesaw, staged hand-off, moving ground	Sumo Wrestler	Classic rage-platforming stage. The first real wall.
River and Swamp — current, reeds	3	Raft Mode, water crossing, wind	Obese Man	Log Riders DNA. The "who is on the raft and who is in the water" argument is an explicit design goal.
Cursed Zone — abandoned village, foggy forest	4	Restless-deceased zones, asymmetrical passage, one-person side task	"May Not Actually Be Dead" Man	A stage where the laws of physics break in readable ways. Highest chaos dose, but with predictable triggers.
Summit Climb — vertical, no checkpoints (POST-EA — first major update)	5	Vertical combinations of all archetypes	Basketball Player / Pharaoh	The Getting Over It end of the spectrum: pure pain, prestige contract. A dug grave waits at the summit.

Idea Pool (Contract Candidates Awaiting a Decision)

Highway — The team cuts through traffic while carrying the coffin across the road (Frogger with a coffin).
 Logged idea; not part of the EA set. If it enters production, two design rules are mandatory: cars do not kill instantly, they hit and LAUNCH players/coffin (physics comedy + fairness pillar); traffic patterns must be readable and learnable.

8.3 Corpse x Level Cross-Pollination

After completion, every contract reopens with "special request" variants: same map, different corpse, different fee. Example: City Delivery + Basketball Player = a coffin lid that will not close in narrow apartment stairwells. In EA, 4 maps x 7 corpses = 28 theoretical combinations; roughly 12 curated pairings are presented as "official contracts," while the rest enter a randomized daily-contract pool.

8.4 Level Design Rules

1. **Three Acts** — Every contract uses a three-act rhythm: warm-up (learn) → escalation (combine) → final crisis (mastery). The final crisis should always be the most shareable moment on the map.
2. **Checkpoint Rhythm** — Rest-stop graveyards (checkpoints) are placed at the ends of acts; they become less frequent as difficulty rises (see 3.3).
3. **Recovery Cost** — Returning to the route from any fall point should never take more than 45 seconds (except the checkpoint-free Summit). The punishment must not discourage another attempt.
4. **Camera-Friendly Geometry** — Prefer geometry that lets the camera keep the coffin and at least two players in the same frame; camera collision in narrow interiors is one of the largest technical risks.
5. **Share Points** — Every map includes at least one "memorial photo spot": scenery + coffin pose. Designed to generate organic screenshots.

9. Meta-Progression and Economy

9.1 Design Principle: Differentiate, Do Not Simplify

Earned money does not buy power. Upgrades should not make the game easier; they should make it different — otherwise the rage identity dies. The economy flows primarily into cosmetics, while functional equipment always carries trade-offs.

9.2 Equipment (Functional, Trade-Off Based)

Equipment	Benefit	Cost / Trade-Off
Rubber Handles	Grip-break threshold +25%	Coffin raise/lower speed -20% (sticky)
Back Brace Set	Strong-grip stamina cost with Shift - 40%	Permanent movement speed -10%
Lid Lock	Raises the lid-opening threshold	Corpse cannot fall out, but CoM shifting +20% (moves around more violently inside the closed box)

Note: the equipment above is equipped on the PLAYER; the passive upgrades below are installed on the COFFIN — two separate slot systems.

9.3 Passive Coffin Upgrades (Coffin Modules)

An item layer introduced only after the core mechanic is proven. Every item follows the trade-off principle — none simply make the game easier; they change how it plays. A maximum of two modules can be installed on the coffin at once:

Module	Benefit	Cost / Trade-Off
Soft Interior Padding	Corpse slide speed -30% (CoM crises develop more slowly)	Coffin mass +15%
Wheeled Undercarriage	Very low friction on flat ground — the coffin can be pushed	On slopes the coffin begins sliding by itself; a curse in ramp contracts
Flotation Kit	3 players can ride in Raft Mode	More drift in wind zones (larger volume)
Lantern Hanger	A lantern hanging from the coffin lights dark areas	The lantern swings with the coffin; it must be extinguished in restless-deceased zones
Icebox Module	Halves the kick frequency of "may not actually be dead" corpse types	Mass +20%
Ceremonial Bells	A bell rings when the coffin exceeds its tilt threshold — an audio CoM warning without HUD	Constant jingling; counts as a trigger in restless-deceased zones

9.4 Cosmetics

- Company coveralls, helmets, gloves; seasonal shame aprons ("Employee of the Month" — automatically worn by whoever dropped the coffin most often, and it costs money to take off).

- Coffin skins: wood tones, metal, neon, carpet-patterned. The coffin is the most visible object on screen, making it the highest-value cosmetic slot.
- Burial animation variants and gravestone inscriptions.

9.5 Fee Calculation

Contract payout = base fee + time bonus + no-damage bonus – coffin-damage deduction – missing-item deduction – corpse-loss deduction. Deductions can never reduce payment to zero (40% of the base is guaranteed); losing the corpse carries the largest deduction. Even a terrible job still advances progression, preserving motivation to replay.

10. Optional Chaos Layer: Curse System (Post-EA — Prototype If Time Allows)

The core game remains fair; players who want more chaos can opt into "Cursed Contract" modifiers. When a cursed contract is selected, the team receives a random additional curse at each checkpoint and the payout multiplier increases:

Curse	Effect	Payout Multiplier
Sweaty Hands	All grip-break thresholds -20%	+15%
Mirror Spirit	One player's controls are reversed (the curse changes hands every 30 sec)	+20%
Slippery Coffin	Coffin surface friction -30%	+15%
Restless Deceased	Kick-trigger zones appear twice as often	+25%
Fog Bell	Visibility is reduced and proximity voice range is halved	+20%

Curses stack. This system is the cheapest source of post-EA content updates: one new curse = new gameplay with zero new-map cost.

11. Social and Viral Systems

11.1 Voice Chat

Standard team voice chat (non-proximity) is used; proximity voice has been CUT FROM SCOPE. Reason: because players respawn at the coffin (3.4), the team is practically always together, so distance-based voice now creates too few comedy moments to justify its cost. Light voice effects may still be applied in certain zones/events (cursed areas, underwater). Architecture note: choose a voice solution with positional-audio support in the underlying stack (Vivox supports this), so proximity can be enabled later without breaking the code architecture.

11.2 Blame Statistics

The contract-end screen turns team arguments into statistics: who dropped the coffin how many times, who died the most, who spent the longest moving around without holding the coffin (AFK/slacking counter), and who shouted the most (microphone peak level — optional and disableable). The "Employee of the Month" cosmetic is driven by these stats.

11.3 Clip System (Optional — Post-EA Candidate)

A replay buffer stores the final 10 seconds before a death/disaster. When a disaster event triggers, a one-button "Save Clip" prompt appears. Games in this genre live on social media, so sharing friction should be reduced to zero. Technical candidates: a custom Unity Recorder-based solution or GPU frame ring buffer; it can be added post-EA depending on the performance budget, but the architecture should account for it from the beginning.

11.4 Speedrunning and Leaderboards

Contract-based time boards (Steam Leaderboards): no-damage, cursed, and corpse-variant categories are tracked separately. Speedrunners are the long-tail audience for this genre and a key source of post-EA longevity.

11.5 Funeral Report Card

The epilogue from Section 2.4 is rendered as a shareable visual card (team photo + report text + statistics). It can be copied to the clipboard/saved to disk with one button.

12. Technical Architecture

12.1 Technology Stack

Layer	Choice	Rationale
Engine	Unity (LTS version, URP)	Team expertise (C#), physics/joint ecosystem, asset access
Networking	Fish-Networking + FishySteamworks (primary) / Photon Fusion Host Mode (budget alternative)	Free, physics-friendly, strong CSP support; Steam lobbies are free through the transport. NGO is the weakest option for physics-heavy games — rejected.
Audio	Vivox (or Dissonance) + FMOD or Unity Audio	Standard team voice; positional support remains available in the underlying stack so proximity can be enabled post-EA
Platform Services	Steamworks (lobbies, invites, leaderboards, achievements)	One-click friend invites are critical for this genre
Physics	PhysX (built into Unity), FixedUpdate 50 Hz	Solver iterations are increased for joint stability (overridden on the coffin object)

12.2 Network Architecture

Authority Model: Host-Authoritative Physics

1. **Single Authority** — Physics authority for the coffin (and ragdoll corpse) always remains with the host. Inputs from all four players are sent to the host as their joint forces; the host simulates the coffin and broadcasts the result.
2. **Forbidden Path** — Distributed ownership (transferring authority to whoever is holding the object) collapses when two players grab at the same time — this path is not pursued. The decision is final.
3. **Prediction Boundary** — Players use client-side prediction for their own characters; the coffin is not predicted. On clients, the coffin is displayed using interpolation + light extrapolation.
4. **Latency Budget** — At 60-100 ms latency, the coffin responding roughly half a frame late is acceptable for this genre and can even become part of the jank. Target: playable feel up to 150 ms.

Synchronization Costs

- Coffin: position + rotation + velocity (snapshot, 20-30 Hz) — inexpensive because it is a single Rigidbody.
- Corpse Mode A: one float (slide position) — effectively free.
- Corpse Mode B (ragdoll): only the pelvis + 3-4 key bones are synchronized; the remaining bones are simulated locally on each client. Full ragdoll synchronization is a bandwidth monster and will not be used.
- Grab/release, lid, grip break: reliable RPC events; synchronize events rather than continuous state.

Reconnection and Host Loss

Host migration is out of scope for EA; if the host disconnects, the contract can be restarted from the latest checkpoint save (contract progress is written to the host save, not the cloud). If a player disconnects, they may reconnect to the same slot; their character waits at the checkpoint.

12.3 Physics Implementation Notes

- Coffin Rigidbody: mass 150-200, solverIterations 12+, solverVelocityIterations 4+, limited maxAngularVelocity (safeguard against physics explosions).
- ConfigurableJoint: linear motion Limited (0.1-0.2 m), softened with linearLimitSpring; angular freedom is restricted (to create a wrist-flex feel).
- Grip-break detection is verified not only through joint.currentForce but also through anchor deviation (currentForce is unreliable in some Unity versions) — both are measured together.
- CoM is updated in FixedUpdate, from one central point after the slide simulation; multiple scripts are forbidden from writing to centerOfMass.
- All physics constants (mass, thresholds, slide speeds) are stored in ScriptableObject profiles: corpse variant = profile asset. Designers can create variants without touching code.

12.4 Performance Targets

60 FPS on a mid-range PC (GTX 1660 class); fixed physics step at 50 Hz. At most one ragdoll is active at a time (one corpse). Levels remain small enough to avoid streaming (single scene + additive hub).

13. Interface and UX

13.1 Hub

One small space: the company warehouse/office. Notice board (contract selection), equipment locker (purchase/equip), wall of shame (statistics, Employee of the Month photo), garage door (start contract). No deep systems are embedded in the hub — preserve the simplicity of the Lethal Company ship. The hub is also a physics playground: waiting players can throw office objects at one another.

13.2 In-Game HUD (Minimal)

- Grip-tension indicator: appears only after tension exceeds 70% of the threshold (the hand icon shakes). No permanent bar — players should look at the coffin, not the HUD.
- Ping markers (F) and teammate direction arrows when teammates are off-screen.
- Contract objective and distance are shown diegetically in the world only when the player looks toward the delivery point.
- Corpse-distress indicator: when corpse sliding/lid risk becomes critical, a diegetic cue appears on the coffin (rattling lid, arm hanging out) — an in-world signal rather than a HUD bar.
- The emote wheel (hold T), voice chat (V), and text chat (Enter) are indicated by subtle icons in a corner of the HUD.

13.3 Accessibility

- Text chat + quick-message wheel (for players without microphones); the ping system should be rich enough to serve as a full substitute for voice communication.
- Color-blind-safe marker palette; camera shake and vibration can be disabled independently.
- Full key rebinding and full gamepad support.

14. Visual and Audio Direction

14.1 Visual

Stylized low-poly + soft shading (URP): achievable for a small team while remaining highly readable in clips. Characters are chunky and expressionlessly funny (the Human Fall Flat school); coffins and corpses are relatively more detailed because they are the camera's stars. Color language: muted, slightly gloomy environments + vivid orange company coveralls for screen readability and branding.

14.2 Audio

- Physics sounds are first-class content: coffin creaks, corpse-sliding friction, lid hinges. The creaking grows louder as tension rises — the diegetic version of the grip-break warning.
- Music is minimal, with short stings that rise during crisis moments. Silence leaves room for player voices, which are the real soundtrack.
- Readable audio cue before entering restless-deceased zones (bell, whisper) — the audio counterpart of the fairness pillar.

15. Production Plan (Compressed — 3-4 Month EA Target)

This section ties the 3-4 month schedule from Pillar 5 to concrete gates. Every stage has a PASS/FAIL criterion; the next stage does not begin until that criterion is met. The schedule is tight — if any stage runs long, CONTENT is cut (number of contracts/corpses), never the core feel.

15.1 Stage 0 — Physics Prototype (3-4 Weeks)

No level. In an empty scene, two players carry the coffin over the network: grab/joint, CoM sliding (Mode A), grip-break system, host-authoritative synchronization, and four-player synchronized-jump impulse test (physics note in 6.5). PASS criterion: the prototype makes two people laugh for 15 minutes. Carry feel is 70% of the game; if it is not funny, iterate parameters — do not move on to level production.

15.2 Stage 1 — Vertical Slice (5-6 Weeks)

- One contract: an 8-10 minute slice of the Mountain Route theme; 5-6 obstacle archetypes (including Ground Obstacle).
- Two corpses: Standard Deceased + Slippery Obese Man variant.
- Full four-player flow: Steam lobby → contract → burial → report screen. First implementation of voice + blame statistics.
- PASS criterion: meaningful laughter in external playtest groups + requests for "one more run"; completion testing with both 2 and 4 players. The moments that make playtesters laugh are logged, and the mechanics that create those moments are amplified.

15.3 Stage 2 — Early Access Content (6-8 Weeks)

- 4 contracts (Section 8.2), 7 corpse variants (including Pharaoh), ~12 curated crossover contracts.
- Economy, equipment, passive coffin modules (first three), first cosmetic set, emote set (~6).
- Leaderboards and funeral report card. The Curse System and Clip System are NOT part of this stage (post-EA parking lot).

15.4 Post-EA Longevity

First major update: Summit Climb (prestige contract) + Curse System. Monthly cadence: 1 new corpse or 2 new curses (cheap content) + one new contract candidate every 6-8 weeks (starting from the Highway idea pool). Community speedrun seasons.

15.5 Team and Risk Budget

Target: 3-5 person team, 14-18 total weeks to EA release (3.5-4.5 months). The schedule is optimistic and has no slack: any feature that threatens scope moves to the "post-EA" list first; the core (physics feel + four contracts) is never diluted.

16. Risks and Open Questions

Risk	Impact	Mitigation
Physics netcode difficulty	Project blocker	Prototype WITH networking in Stage 0 (never bolt it on later); lock the host-authoritative decision from the beginning
2 vs 4 player balance	Fundamentally affects level design	Speed penalties are delegated to physics (4.5); every contract must be completable with 2 players and funny with 4 — mandatory testing with both during the vertical slice
Frustrating ↔ unfair line	Player churn, negative reviews	90% predictable / 10% chaos ratio; every chaos source uses readable triggers; warning system before a grip breaks
Physics exploits (four-player jump, joint launching)	Obstacles become trivialized	Four-player-jump exploit control is delegated to level design (6.5): ceiling/overhang protection + exploit sweep on every contract; maxAngularVelocity limit; policy of "fun exploits stay, game-breaking ones are closed"
Scope creep	EA delay	Pillar 5; no embedding deep systems in the hub; curse/clip/Summit/Highway live in the "post-EA" parking lot; if the 3-4 month schedule slips, cut content, not feel (15)
Genre saturation / timing	Loss of visibility	Distinctive coffin/corpse hook + clip-first marketing; build an early community through a demo (Steam Next Fest)

Open Questions (Awaiting Team Decision)

1. Game title: "Sunset Express" is a working title; Turkish/English naming and trademark research will be conducted.
2. Pricing: comparable titles sit in the USD 5-10 range; a four-pack discount (as an alternative to a friend pass) will be evaluated.
3. Character customization depth: only colors/cosmetics in EA, or a face/body editor?
4. Launch languages beyond Turkish + English (text volume is low, making localization inexpensive; deciding early is advantageous).
5. Whether the Highway contract should become the first new post-EA map (idea pool; see 8.2).

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