

Vampir: Graveyard Shift

6×5 pay anywhere with tumbles, multiplier Bats that add up, Vlado's Bite, and free spins played as one night on the clock. Five bet modes, one RTP, one max win.

● Approved · live on Stake Engine

Stake Engine math SDK

100,000 books per mode

96.50%

RTP in every bet mode (lookup tables: 96.5000%)

25,000×

Max win in every mode; the round ends when it is reached

1 in 3.21

Base game hit rate (31.17% of rounds)

1 in 4.50

Base rounds returning the bet or more (22.22%)

1 in 320

Free spins from the base game (1 in 160 with Night Owl)

14.77

Base std dev per unit cost (3-star limit: 60)

01 How it plays

- **Board and pays.** 6 reels × 5 rows. 8 or more of a symbol anywhere award (8–9, 10–11, 12+), with at least 7 of the symbol itself; Bats complete the rest.
- **Tumbles.** Awarded symbols leave, the rest fall and new ones drop in, for as long as new wins appear. Bats and Coffins stay.
- **Bat wild.** Substitutes for every paying symbol and never leaves in a tumble. Lands at ×1 and gains +1 after every tumble.
- **Bat multiplier.** When the tumbles end, the spin's award is multiplied by the **sum** of all Bat multipliers on the grid. Bats add up; they never multiply each other.
- **Vlado's Bite** (base game). After a spin that ends with an award and at least one Bat, every Bat may double before the multiplier is applied.
- **The Shift.** 4, 5 or 6+ Coffins start the Graveyard, Overtime or Blood Moon Shift: 10 free spins, played as the hours from 21:00. Bats are sticky and keep growing.
- **Midnight** (spin 4): every Bat doubles. **03:00** (spin 7): a new Bat lands at ×2. Overtime: every Bat starts at ×3 (the 03:00 Bat too). Blood Moon: Bats double at midnight and again at 03:00.
- **Retrigger.** 3+ Coffins in a free spin add 5 spins. Midnight and 03:00 happen once per Shift.
- **Night Owl** (2× per spin): reels with more Bats and Coffins; the Shift starts about twice as often. **Bonus buys:** 100×, 300×, 1,000×.
- **Stateless.** No jackpots, gamble or carry-over: base-game Bats last one spin and every Shift starts without Bats.

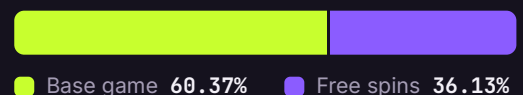
02 Paytable

SYMBOL	8–9	10–11	12+
Uncle Vlado	6.0	15.0	30.0
Blood Goblet	2.5	6.0	12.0
Grave Lantern	2.0	4.0	8.0
Garlic Braid	1.2	2.5	5.0
Skull	0.6	1.2	2.5
Tombstone	0.5	1.0	2.0
Candle	0.3	0.6	1.2
Spider	0.2	0.5	1.0

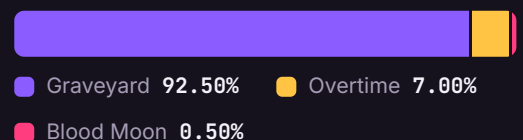
Multiples of the bet, before the Bat multiplier. Bat (wild, multiplier) and Coffin (scatter) do not pay as symbols. Every pay is a 0.1× step.

03 RTP split

Base mode, share of the bet returned



Shift tiers, share of Shifts triggered in the base game



04 Bet modes

MODE	COST	RTP	HIT RATE	≥ COST	MEDIAN	AVG FEATURE	FREE SPINS	25,000× ODDS
Base game	1×	96.50%	1 in 3.21	1 in 4.50	0×	115.6×	1 in 320.0	1 in 6,250,006
Night Owl enhancer	2×	96.50%	1 in 3.13	1 in 4.50	0×	115.6×	1 in 160.0	1 in 3,125,001
Graveyard Shift buy	100×	96.50%	100%	1 in 5.20	31.1×	96.5×	every round	1 in 50,000
Overtime Shift buy	300×	96.50%	100%	1 in 3.29	126.7×	289.5×	every round	1 in 19,984
Blood Moon Shift buy	1,000×	96.50%	100%	1 in 3.65	523.1×	965.0×	every round	1 in 2,500

"≥ cost": rounds that return the mode's cost or more (2× for Night Owl). Median and averages in multiples of the bet; feature figures include the trigger spin. The smallest buy award is 0.2×. Max win is 25,000× in every mode.

05 Volatility and tail

MODE	STD / COST (RAW)	P(≥ 5K×)	P(≥ 10K×)	P(≥ 25K×)	ETL >40× / >10K×	CVAR 99.9% (/ STAKE)
Base	14.77 (14.8)	4.3e-7	1.7e-7	1.6e-7	0.382 / 0.004	207.5× (207.5)
Night Owl	11.05 (22.1)	1.1e-6	4.3e-7	3.2e-7	0.325 / 0.005	276.8× (138.4)
Graveyard	2.13 (213.3)	2.1e-5	2.0e-5	2.0e-5	0.005 / 0.005	2,127× (21.3)
Overtime	1.35 (403.7)	7.4e-5	5.1e-5	5.0e-5	0.004 / 0.004	4,148× (13.8)
Blood Moon	1.21 (1,209.8)	0.00488	0.00080	0.00040	0.000 / 0.015	16,874× (16.9)

Tail probabilities are per round. Expected tail liability (ETL) is normalised by the mode's cost; CVaR is the average of the worst 0.1% of rounds. Standard deviation is read per unit of cost, as the platform's 3-star checks define it.

06 Feature frequencies

PER ROUND	BASE	NIGHT OWL
The Shift (any tier)	1 in 320.0	1 in 160.0
Bat multiplier ×2+ (incl. Bites)	5.75% · 1 in 17.4	13.50% · 1 in 7.4
Bat on the reveal	7.65%	16.55%
Vlado's Bite	1.25% · 1 in 80	3.50% · 1 in 28.5
Retrigger	0.09%	0.17%
Free spins played, average	11.7	11.6
Wins below the bet ("crumbs")	8.95%	9.77%

Bought Shifts retrigger in 20.4% (Graveyard), 23.0% (Overtime) and 21.2% (Blood Moon) of rounds and play 11.3–11.4 spins on average.

07 Shift tiers in the base game

TIER	SHARE · FREQ.	AVG / MEDIAN	25,000×
Graveyard 4 Coffins	92.50% 1 in 346	97.6× / 94.7×	1 in 22,583 Shifts
Overtime 5 Coffins	7.00% 1 in 4,571	292.4× / 245.2×	1 in 8,545 Shifts
Blood Moon 6+ Coffins	0.50% 1 in 63,977	974.8× / 610.0×	1 in 2,442 Shifts

Each tier's average is its buy price × RTP (96.5×, 289.5×, 965×). Night Owl: Graveyard 1 in 173, Overtime 1 in 2,286, Blood Moon 1 in 31,987 rounds.

08 Base-game rounds by payout

ROUND PAYS	SHARE OF BASE-MODE ROUNDS	%
No award		68.83
< 0.5×		4.56
0.5–1×		4.39
1–2×		13.18
2–5×		6.60
5–10×		1.60
10–20×		0.42
20–50×		0.095
50–100×		0.016
100×+		0.0035
The Shift		1 in 320

Base-game books only; rounds that start the Shift are counted separately. Night Owl has the same shares from 2× up at twice the amounts; below 2×: 9.77%, no award: 68.01%.

09 We played it, then re-tuned

BASE GAME	V1	V2 (SHIPPED)
RTP	96.50%	96.50%
Share of the RTP outside the Shift	52.2%	62.6%
Returns ≥ bet	1 in 6.43	1 in 4.50
Wins below the bet	17.09%	8.95%
Vlado's Bite	1 in 145	1 in 80
The Shift	1 in 250	1 in 320
No ≥ bet win in the first 20 spins	3.19%	0.56%
Longest dry streak, median	22 spins	16 spins

Same books; only the base and Night Owl lookup tables changed. Sessions: 20,000 simulated sessions of 200 spins.

10 Simulation method

- **Sample.** 100,000 books (complete rounds) per bet mode, 500,000 in total, generated with the Stake Engine math SDK from seeded, reproducible reel strips.
- **Weights.** The SDK optimizer sets each book's weight in the lookup table so every mode lands on 96.50%. The base and Night Owl tables were then re-weighted by payout band (v2) to give the base game more wins worth having, at the same RTP and max-win odds.
- **Max win reachable.** Forced distributions during book generation guarantee 25,000× books in every mode, reached more often than 1 in 10,000,000.
- **Stats.** Every figure in this sheet is computed from the published lookup-table weights over the books, per round, in multiples of the bet.
- **Natural reference.** Straight off the reels, before optimization (140,000 base and 140,000 Night Owl spins, 28,000 rounds per buy), the features ran 17–26% above their price × RTP; the optimizer trims each mode to 96.50%.
- **Replay check.** Every one of the 500,000 books was replayed against the game rules and the event contract: 0 failures. A strict book and lookup-table check: 0 bad books, 0 bad rows.
- **Scale.** 1.5 million events per base mode and 8.3–8.8 million per buy, under the 10 million limit. A full rebuild of all five modes takes 22 minutes on one 16-core machine.

11 Platform checks

CHECK	WORST	MODE	
RTP within 96.0–96.7%, all modes	96.50%	PASS	
Max payout ≤ 100,000× · cost ≤ 5,000×	25,000× · 1,000×	PASS	
Std dev per unit cost ≤ 60	14.77	PASS	
CVaR per stake ≤ 700 · absolute ≤ 50,000	207.5 · 16,874	PASS	
$P(\geq 5k\times) \leq 0.05 \cdot P(\geq 10k\times) \leq 0.01$	0.0049 · 0.0008	PASS	
$P(\geq 25k\times) \leq 0.005 \cdot P(\geq 50k\times), P(\geq 100k\times)$	0.0004 · 0 · 0	PASS	
$ETL > 40\times \leq 0.9 \cdot > 10k\times \leq 0.8 \cdot \text{sum} \leq 1.5$	0.382 · 0.015 · 0.386	PASS	

All 5 Stake critical tests and all 14 three-star non-critical checks pass: 0 failed classes.

About these numbers. Every value on this sheet comes from our own simulations of the published lookup tables for Vampir: Graveyard Shift (math version 1, base and Night Owl tables v2, 13 October 2026). They are theoretical long-run figures; individual sessions vary widely. Approval is the platform's; this sheet is our own documentation of the math behind the game, not a lab certificate. 18+. Play responsibly.