POST-MORTEM · INDEPENDENT PROJECT

SPX Income Trader ("Daily Melt"): what the live test showed, and what comes next

A blameless review of a seven-week live trial of an automated 0DTE S&P 500 options strategy, the rebuilt backtest that explained the result, and the evidence-gated plan for any future live trading.

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Author

October 2026
Date

Mar 10 – May 1, 2026
Live window

Paused
Live status of the strategy

1 Summary

9W / 12L
Live record, 21 trades (42.9% wins)

−$3,326.72
Live net P&L after fees, 1–4 contracts per trade

77.5% → 54.8%
Original backtest win rate, before and after removing look-ahead

−$14.7
Per trade in the honest backtest, 1,082 trades, profit factor 0.87

What happened. Daily Melt sells one at-the-money, $5-wide SPX credit spread per day in the direction of a morning momentum signal. After about five weeks of paper trading it went live on March 10, 2026. Over 21 trades it won 9 and lost 12 and finished down $3,326.72 after fees, about 7% of the account. I paused it after the May 1 session because the live results were far below what the backtest had promised.

Why. Two findings explain the gap. First, the original backtest was wrong. It built its intraday bars from each day's open, high, low and close, and its trend filter used the day's closing price, which is information the live bot never has in the morning. That inflated the win rate to 77.5%. Removing just the look-ahead dropped it to 54.8% (profit factor 0.65). Second, once I rebuilt the backtest honestly on real one-minute S&P 500 data for 1,957 sessions, the strategy itself turned out to lose money: −$14.7 per trade over 1,082 trades, and −$21.1 per trade in the 2023–2026 out-of-sample period (t = −2.2). The signal has a small real edge, worth about $12 a trade, but the round trip costs about $31. The honest backtest agreed with the live result on win or loss on 14 of the 16 days where both traded, so the live loss was not bad luck.

What changed. None of the 19 single-rule changes I tested made the strategy reliably profitable out of sample. The engineering, though, held up and is reusable. Since the review I have fixed the backtester (look-ahead, real minute data, 0DTE pricing, parity with the live rules), added a read-only option-quote recorder, and tightened position sizing. Test count went from 1,514 to 1,642. Daily Melt stays paused.

What is next. The only setup that tested positive is a different, non-directional trade: a 12:00 ET iron condor (10-delta short strikes, $10 wings, stop at 2× credit). On modelled prices it made +$20.9 per trade out of sample with a 69% win rate and a −$2.9k maximum drawdown per contract. **It is not proven.** Its edge depends on how expensive real 0DTE options are, and with option prices about 10% cheaper than modelled it falls to +$3.3 per trade. It will only trade live if it first passes recorded real quotes, then at least 30 days of paper trading, and then only at one contract. Section 8 lists the pass/fail criteria.

2 What the system is

SPX Income Trader is a Python application, with roughly 1,500 automated tests, that trades same-day-expiry (0DTE) options on the S&P 500 index through a broker's REST API without manual input. The user interface calls it “The Daily Melt”, after the time decay that 0DTE option sellers collect. SPX options are European-style and cash-settled, so there is no early assignment and nothing is held overnight.

1 · Bars	2 · Pulse bar	3 · Bias filter	4 · Breakout	5 · Spread	6 · Exit
SPX quotes about every 30 s, built into 30-minute bars	Bar closes in its top or bottom 10% of range (≥ 2 pts), 9:30–10:30 starts	Skip setups against a ±0.25% move from the open	Enter when price breaks the bar's high or low before 11:30 ET	Sell ATM $5 bull put or bear call at the natural price, credit ≥ $1.00	Buy back at 80% of max profit, else hold to 4:00 PM settlement

Around that signal sits production-grade plumbing: budget-based sizing (2% of equity at risk per day) with hard contract caps; daily, weekly and monthly loss breakers (2%, 4%, 8%) and a pause after five straight losses; pattern-day-trader checks; limit-only orders; positions valued at the price it would actually cost to close; reconciliation of every trade against the broker's own transaction records, fees included; alerts; a dashboard; and a backtester that runs the same strategy objects over history. Max loss is known before every order because only defined-risk spreads are allowed.

3 The live test

Timeline

DATE (2026)	EVENT
Feb – early Mar	About five weeks of dry-run (paper) trading. The simulated account grew from $50,000 to $60,000. The dry-run simulator priced options with a simplified model, so this was not independent evidence of edge.
Mar 10	First live session at one contract. Problems found and fixed the same day: spread fill prices parsed from leg averages instead of the net order price, positions valued at mid instead of the cost to close, no cap on unrealized profit.
Mar 11	First live trade (loss, −$337.44). A database lock let a trade fill at the broker with no local record. Fixed by writing the trade record before any order is sent, plus busy timeouts and retries.
Mar 13 – Apr 1	Budget-based sizing scaled up to 2, then 3–4 contracts as the 2% rule allowed. The record reached 5W/2L and +$928 by Mar 20; the next four trades (Mar 23 – Apr 1, at 2–4 contracts) all lost.
Mar 31	Monthly loss budget 94% used; no new entries. March: 10 trades, 5W/5L, −$1,861.72.
Apr 1 – 2	Size cut to 2 contracts, then to 1 for the rest of the trial.
Apr 6, 17–21, 24	Five sessions missed: the broker's 7-day login token expired, and once the operating system blocked the unsigned desktop build. No open position was affected, but those sessions were lost.
May 1	21st trade (loss). Final record 9W/12L, −$3,326.72, about −7.2% of the account. Live trading paused.
October 2026	Independent review: honest backtest rebuilt from scratch, root causes identified, fixes committed on a separate branch.

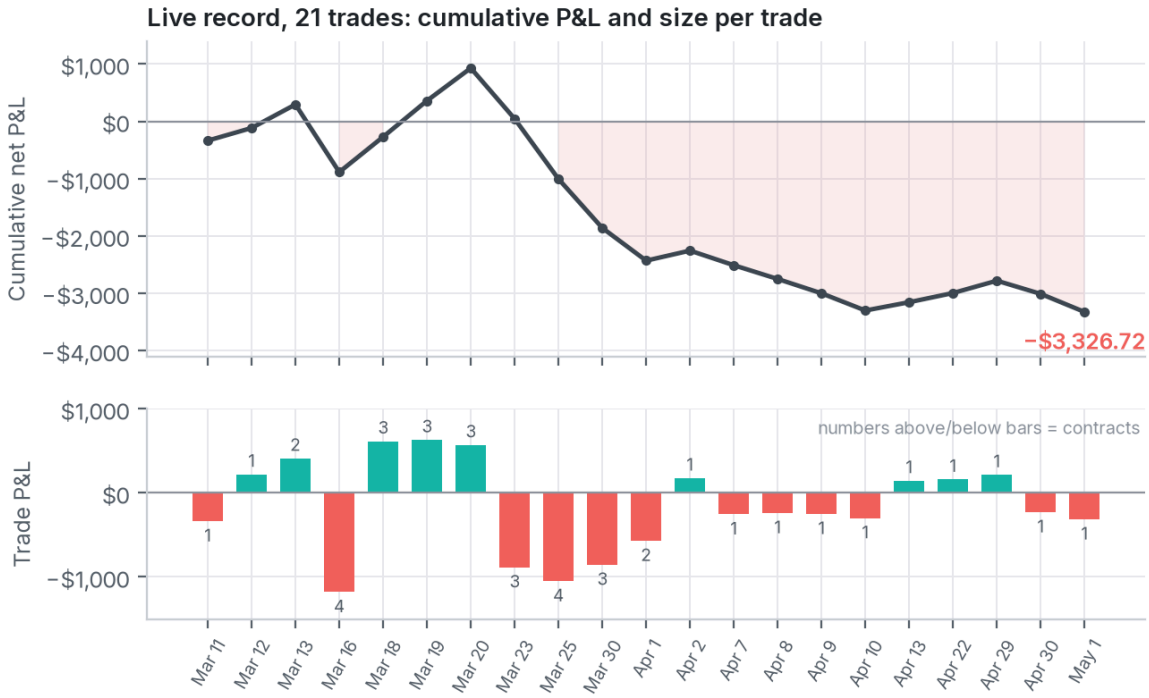


Figure 1. Live trades, net of all fees as reconciled against the broker. The numbers on the bars are contracts. Nine trades at 2–4 contracts produced −$2,314.58 of the −$3,326.72 total. Source: the project's live validation log.

Results

LIVE, MAR 11 – MAY 1, 2026	TRADES	WINS / LOSSES	NET P&L
March (sizes 1–4 contracts)	10	5 / 5	−$1,861.72
April (sizes 1–2 contracts)	10	4 / 6	−$1,150.00
May 1 (1 contract)	1	0 / 1	−$315.00
Total	**21**	**9 / 12 (42.9%)**	**−$3,326.72**

Scaled to one contract, the average live win was about $192 and the average live loss about $279. That shape, small wins and larger losses, is the same one the honest backtest produces ($159 / $278), and it means the strategy needs to win close to 60% of the time just to break even. It won 43%.

At the time, the daily log blamed the losses on opening gaps and headline-driven reversals, and proposed a gap filter. That explanation was reasonable from inside the trial, but the review showed it was not the main driver: in the honest backtest the small-gap days were actually the worst, and gap filters did not help out of sample (Section 4.3).

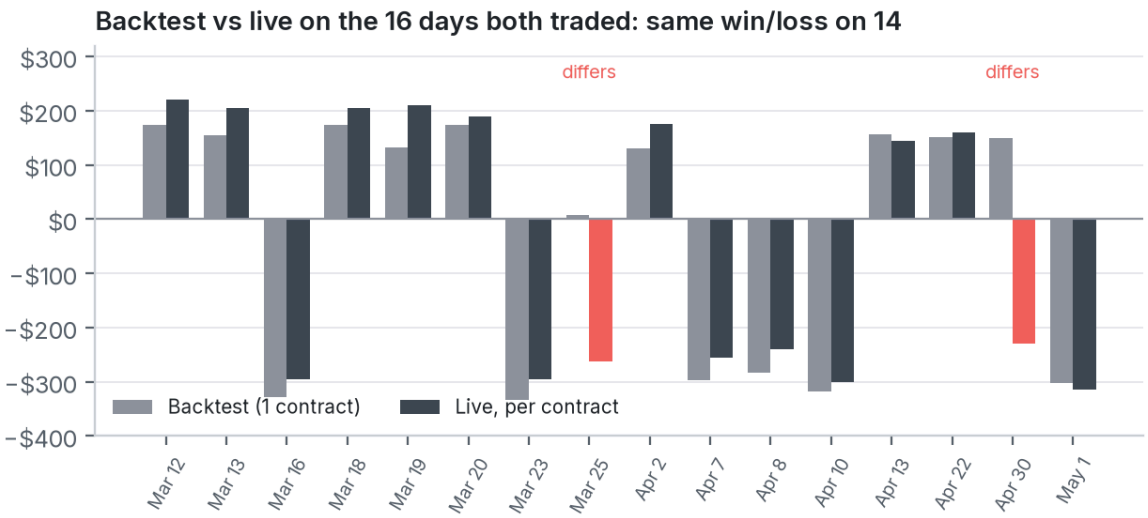


Figure 2. The rebuilt backtest replayed over the live window, excluding days the bot was offline. Live P&L is divided by the contract count so both bars are per contract. They agree on win or loss on 14 of the 16 days both traded; on whether to trade at all on 23 of 34 sessions. Over the window the model was more forgiving (68% wins, about −$66 per contract) than live (43%), so if anything the backtest flatters the strategy.

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4 What went wrong

This section is written in a blameless format: the goal is to find the conditions that let a bad decision look like a good one, not to assign fault. There were four contributing causes, in order of impact.

4.1 The original backtest overstated the edge

An audit of the original backtest engine found three defects that together made the strategy look far better than it was:

1. **Synthetic intraday data.** The free data source keeps only about 60 days of 30-minute history. For older dates the loader quietly built 30-minute bars from each day's daily open, high, low and close, along a fixed path that depended on whether the day closed up or down. The pattern the signal reads therefore already contained the day's outcome.
2. **Look-ahead in the trend filter.** The morning-bias filter used the full-day return (close versus open). The live bot can only use the move from the open so far. This alone accounts for most of the inflated win rate.
3. **Mis-scaled 0DTE time.** The option model measured time left in calendar hours rather than trading time, which understated the remaining volatility by roughly 2×. Modelled spreads lost value too quickly and hit the 80% profit target too often.

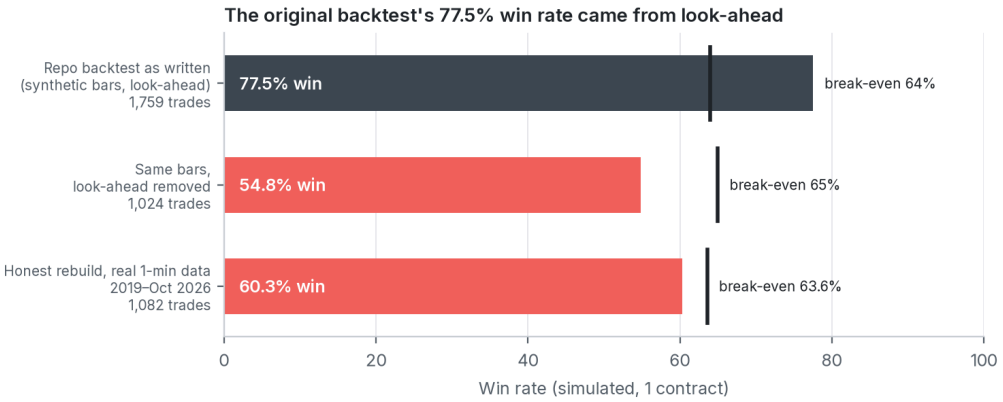


Figure 3. Simulated win rate against the win rate needed to break even (black line). The first two runs are from the audit of the original engine (2019–2025); the third is the honest rebuild described in Appendix A. Only the flawed run clears break-even.

Why it was not caught earlier: the backtest and the dry-run simulator shared the same simplified option model, so the paper account's 20% gain seemed to confirm the backtest when both were wrong in the same direction. There was also no automated test that compared the backtester's decisions with the live engine's decisions on the same bars.

4.2 The strategy has no edge after costs

To measure the strategy itself, I rebuilt the backtest from scratch: real one-minute S&P 500 paths for 1,957 sessions (January 2019 to October 16, 2026), strict no-look-ahead decisions, and modelled 0DTE option prices with skew, bid/ask spreads and $1.30 per leg in fees (Appendix A). The live rules were replayed exactly, with nothing tuned; 2019–2022 is treated as in-sample and 2023–2026 as held out.

LIVE RULES, SIMULATED, 1 CONTRACT	TRADES	WIN %	PER TRADE	AVG WIN / LOSS	PROFIT FACTOR	MAX DRAWDOWN	T
2019–2022 (in-sample)	555	61.4	−$8.5	$157 / −$273	0.92	−$8.2k	−0.9
2023–2026 (out-of-sample)	527	59.0	−$21.1	$160 / −$282	0.82	−$11.9k	−2.2
All	**1,082**	**60.3**	**−$14.7**	**$159 / −$278**	**0.87**	**−$18.5k**	**−2.2**

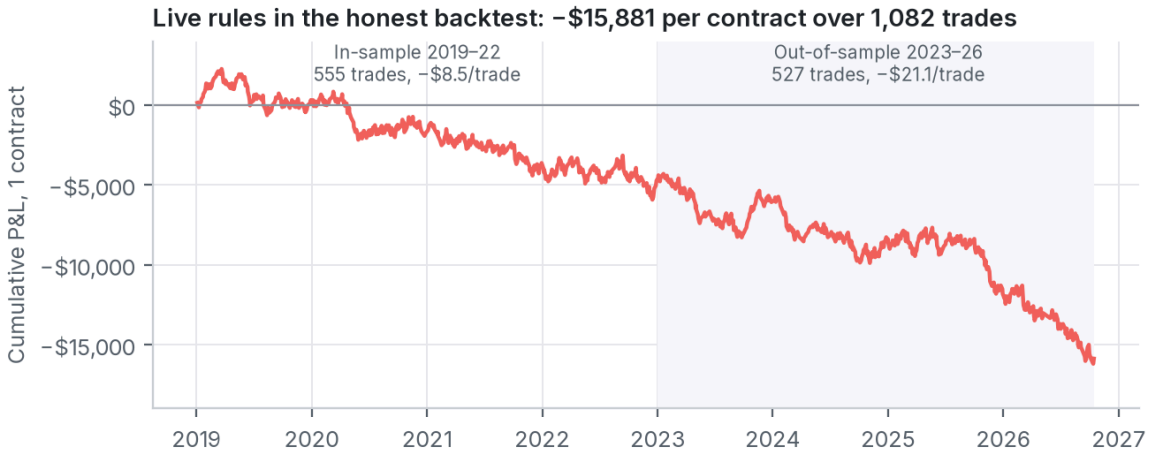


Figure 4. Cumulative simulated P&L of the exact live rules, one contract, after costs. The shaded region is the held-out period.

The payoff is lopsided. With an average loss of $278 and an average win of $159, the break-even win rate is 63.6%. The strategy wins 60.3%. A $5-wide at-the-money spread is tiny next to a typical 40–60 point rest-of-

day move, so it nearly always settles fully in or fully out of the money. In effect it is a binary bet on the close, and the market prices that bet close to fairly.

The signal is real but too weak. Price closed in the signal's direction 53.6% of the time. Taking the same entry times with a random direction loses −$27 per trade on average (90% range −$37 to −$19), so the pulse signal beats 98% of coin flips and adds about $12 per trade. That is a genuine, if small, edge. The problem is what it costs to trade.

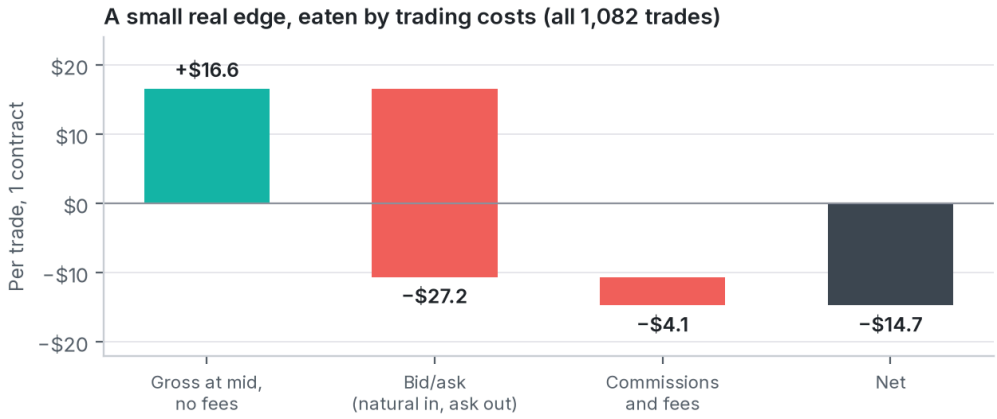


Figure 5. Cost attribution over all 1,082 simulated trades. At mid prices with no fees the same rules make +$16.6 per trade. Selling at the natural price and buying back at the ask costs $27.2; commissions and fees cost $4.1.

4.3 Where the losses came from, and what did not fix them

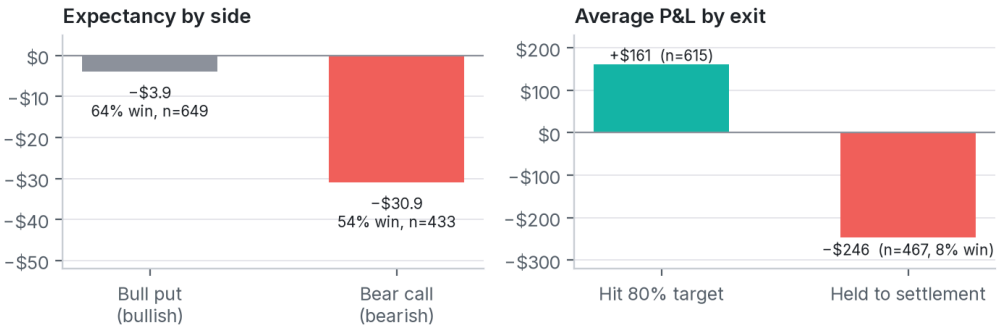


Figure 6. Left: bear call spreads lose far more than bull put spreads, because they fight the market's upward drift. Right: trades that reach the 80% target always win; the 467 trades held to settlement won only 8% of the time.

I tested 19 single changes to the rules, one at a time, judged on the held-out 2023–2026 period. None is reliably profitable. A selection:

CHANGE (ONE AT A TIME)	IN-SAMPLE $/TRADE	OUT-OF-SAMPLE $/TRADE	OOS PROFIT FACTOR	OOS T
Live rules (reference)	−8.5	−21.1	0.82	−2.2
Skip days with an opening gap above 0.5%	−12.4	−21.0	0.82	−1.8
Ignore the 9:30 bar when the gap exceeds 0.3%	−13.5	−17.4	0.85	−1.7
Skip Fed (FOMC) days	−9.0	−21.8	0.81	−2.2
Take profit at 50% instead of 80%	−21.2	−34.8	0.66	−4.2
Stop-loss at 2× credit	−35.8	−46.4	0.62	−5.5
No profit target (hold to settlement)	−0.1	−12.8	0.90	−1.2
At the money, $10 wide (best in-sample)	+25.2	−6.6	0.97	−0.4
20-delta short strike, $10 wide (best out-of-sample)	+3.7	+4.1	1.06	+0.4

Stops and tighter profit targets made results worse in every version, because they add a second round of bid/ask to a trade whose outcome is mostly decided at the close. The “$10 wide” line is a useful warning: it was the best directional result in-sample and fell apart on held-out data. The best out-of-sample result (+$4.1, t = 0.4) is statistically indistinguishable from zero.

4.4 Sizing grew before the edge was proven

The sizing rule was working as designed: it allowed up to 2% of equity at risk per day, which on this account meant up to four contracts. The issue was the design, not the code. Size scaled up in the first week of live trading, before there was any live evidence, and nine trades at 2–4 contracts produced about 70% of the total loss. A related gap: when one contract's maximum loss was larger than the daily budget, the code still forced a minimum of one contract. Both are fixed (Section 6).

4.5 Operational issues

The platform's operational record was good for a first live deployment, but not clean. A database lock on day two let one trade fill at the broker with no local record; it was found the same day and fixed by writing the record before sending any order. The broker's seven-day login token expired three times during the trial, and once the operating system blocked the unsigned desktop build; together these cost five sessions. None of these caused a trading loss, but each is a reason the new platform treats broker authentication and data freshness as hard pre-trade checks.

5 What I learned

1. **A backtest is a hypothesis, not evidence, until it has been tested for look-ahead.** The single most expensive bug was one line that let a morning decision see the closing price. Every decision now has to be computable from data available at that minute, and a parity test runs the backtester and the live engine on the same bars.
2. **Two tests built on the same model are one test.** The paper account and the backtest agreed because they shared an option model. Validation now requires an independent source: recorded real market quotes.
3. **Measure the edge against the cost of trading it.** The signal was real. The strategy still lost, because $12 of edge cannot pay $31 of friction. Cost attribution and a coin-flip benchmark are now part of every research report.

4. **Hold the data out, and believe it.** Of the variants tested, the best in-sample result was among the worst out of sample. Parameters are now chosen on 2019–2022 only and judged on 2023–2026, with a walk-forward check on top.
5. **Size for what you know, not what the account allows.** New strategies start at one contract and stay there until they have a meaningful live record (100+ trades).
6. **Diagnose with the whole sample.** The in-trial explanation (gaps) fit the last few losses but not the 1,082-trade history. A small live sample should prompt a full re-test, not a patch.
7. **Write the stop rule before starting.** The trial was paused on judgment after 21 trades. It should have had a written kill criterion from day one. The new platform has automatic demotion rules (Section 8).

6 Upgrades since the live test

All changes are on a separate `strategy-v2` branch that is pushed but not merged; the live code path is untouched and Daily Melt remains paused. Each commit was tested on its own.

COMMIT	CHANGE	TESTS AFTER
`77315e9`	Backtest: morning-bias filter evaluated at the bar's close, not the full-day close (removes the look-ahead).	1,516
`9a1ef66`	Backtest: refuses synthetic 30-minute bars; loads real minute data aligned to the official close and flags missing days.	1,528
`ef6cc0f`	Backtest: 0DTE time in trading minutes, at-the-money volatility scaled from VIX, put skew.	1,535
`877f076`	Backtest: parity with the live rules (setup window, newer setups replace pending ones, 2-point range filter, entry minute, per-leg fees).	1,552
`0f31e37`	Research toolkit: in-sample/out-of-sample and walk-forward reports, coin-flip benchmark, cost attribution.	1,563
`5877d5c`	Read-only SPXW 0DTE chain recorder. It gets a market-data wrapper that raises an error on any order call.	1,597
`619537a`	Iron condor added as paper-only signals, disabled by default.	1,623
`cbaffe1`	Risk: skip the trade instead of forcing one contract when one contract's max loss exceeds the 2% daily budget.	1,637
`1c23a41`	Recorder: token health check and a clean exit when the broker is not authenticated.	1,642

The quote recorder is scheduled to run every weekday from 11:45 ET to the close, one snapshot a minute, from the next session after this review, once the broker connection is re-authorized.

7 The candidate replacement: a midday iron condor

Because no directional variant worked, I searched a different structure: a non-directional 0DTE iron condor, which sells both a put spread and a call spread and profits if SPX stays inside a range until the close. The grid had 160 settings (entry 10:00–14:00, short strikes 5–20 delta, $5 or $10 wings, with and without targets and stops), chosen on 2019–2022 only. 66 of the 160 were positive out of sample, and in-sample and out-of-sample Sharpe ratios correlated at 0.98, which points to a structural effect rather than curve-fitting, under this pricing model.

CANDIDATE A: 12:00 ET, 10-DELTA SHORTS, $10 WINGS, STOP AT 2× CREDIT	TRADES	WIN %	PER TRADE	PROFIT FACTOR	MAX DRAWDOWN	SHARPE
2019–2022 (in-sample)	1,006	70.6	+$16.6	1.49	−$5.1k	3.0
2023–2026 (out-of-sample)	**951**	**69.4**	**+$20.9**	**1.57**	**−$2.9k**	**3.5**
Anchored walk-forward, settings re-picked each year (2021–2026)	1,454	67.1	+$28.3	1.46	−$11.8k	2.9

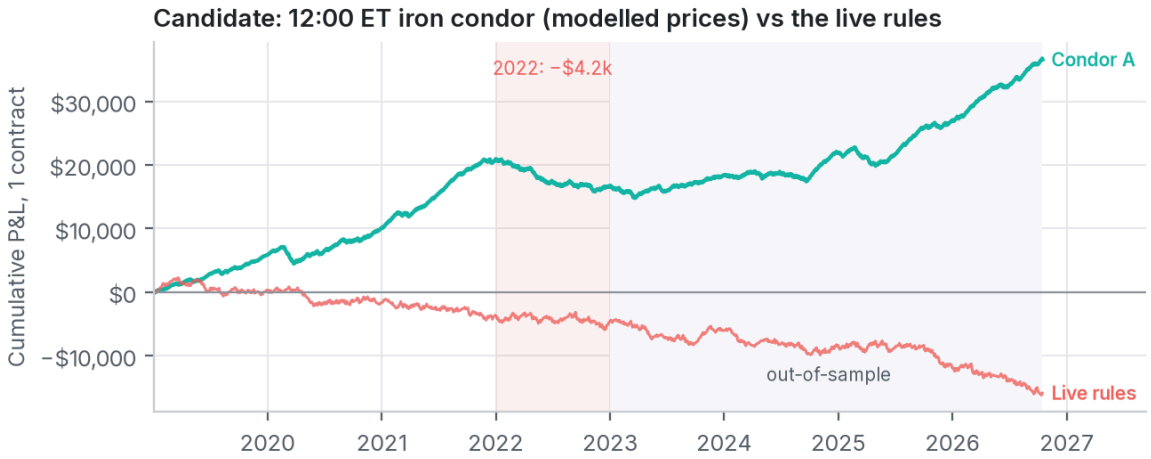


Figure 7. Candidate A against the live rules, one contract, modelled prices, after costs. By year: 2019 +$5.8k, 2020 +$4.3k, 2021 +$10.8k, **2022 −$4.2k**, 2023 +$1.7k, 2024 +$3.6k, 2025 +$5.1k, 2026 to date +$9.5k. Worst single day −$369; maximum loss per contract about $920.

Why it is not proven. The condor sells options, so it only makes money if real 0DTE options are priced richer than the moves that follow. Free historical data cannot show that; my option prices are modelled. The base model sets at-the-money volatility at 0.62 × VIX, calibrated two ways that agree. But the result is sensitive to that choice and to trading costs:

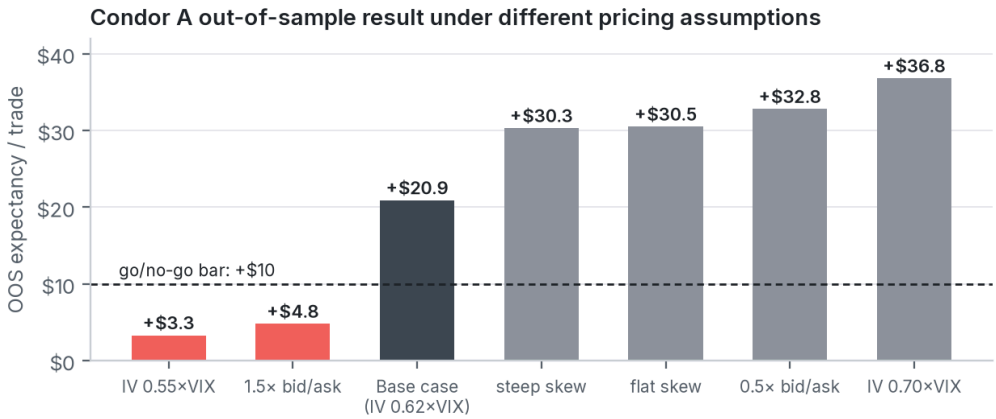


Figure 8. Candidate A out-of-sample expectancy under alternative pricing. With implied volatility about 10% lower (0.55 × VIX) or bid/ask spreads 50% wider, it is roughly break-even. It is positive in every case tested, but only barely in the two that matter most.

The walk-forward also shows the risk plainly: the 2022 test year (a trending, high-volatility market) lost $9.6k per contract under the setting it picked that year. Execution quality matters as much as the edge itself: working orders from the mid-price instead of selling at the natural price saves roughly $0.05–0.10 per spread, about a third of the modelled edge.

8 Plan to profitability, with go/no-go criteria

The plan is built so that the condor cannot reach live money on the strength of a backtest alone. Each gate must be passed in order, against thresholds written down now. Changing any strategy parameter resets it to the first gate, so it cannot be tuned past the checks.

GATE	PASS CRITERIA (ALL MUST HOLD)	IF IT FAILS	STATUS
1. Research	Out-of-sample expectancy ≥ +$10 per contract after commissions and modelled bid/ask; profit factor ≥ 1.2; walk-forward positive; ≥ 200 out-of-sample trades; positive under wider bid/ask; drawdown fits the risk budget.	Strategy locked.	Passed with warnings (Section 7)
2. Real quotes	≥ 20 recorded sessions (4–6 weeks). Replay on real bid/ask: modelled credit within $0.10 of real credit, and expectancy ≥ +$10 per contract after costs.	Condor shelved; no live change.	Starting next session after this review
3. Paper	≥ 30 trading days and ≥ 25 trades through the full engine, filling on real quotes at a conservative price. Expectancy inside the backtest's expected range; slippage within the modelled assumption; zero unresolved reconciliation breaks. Orders worked from mid.	Back to research, or shelved.	Not started
4. Live, 1 contract	Manual enable with typed confirmation. One contract (max loss about $920). Scale only after ≥ 100 live trades, and then by no more than a quarter of the Kelly fraction.	Automatic demotion (below).	Not started

Automatic demotion from live to paper. Either of these stops new trades without any manual decision: live drawdown exceeds 1.5× the backtest's maximum drawdown (about $4.3k per contract for Candidate A), or, after 50 live trades, the 95% upper confidence bound on live expectancy is below zero. There is no override button; an override needs a reviewed code change.

Earliest realistic date. If every gate passes on its minimum, recording takes 4–6 weeks and paper trading needs at least six more, so a one-contract live trade is roughly three months away at the earliest. A fail at gate 2 is a perfectly acceptable outcome; it would cost nothing but time.

The platform: Allocation Desk

The gates are being built into a new, broker-agnostic application rather than added to the old one. Its rule is simple: no order reaches a broker without passing a central risk engine, and no strategy gets capital without evidence. The core is complete and tested (138 Python and 11 interface tests, strict type checking, CI on Windows and Linux); live trading is not enabled.

- **Allocations sized by risk.** Each strategy gets a capital bucket and a risk setting. Contracts = floor(allocation × risk ÷ max loss per contract); if that is zero the trade is skipped, never rounded up.
- **Evidence gate.** The four gates above, tied to a hash of the strategy's code and parameters. Daily Melt appears as locked, failed at gate 1.
- **Kill switch.** Blocks new entries and cancels working orders, globally or per strategy. Flattening is a separate, confirmed action.
- **Idempotent orders.** Every order has a unique tag and is recorded before submission. A timeout moves it to an “unknown” state that is reconciled with the broker before any retry, so there are no blind resubmits.
- **Audit log.** Append-only and hash-chained: every allocation change, gate result, risk decision and order state change.
- **Read-only by default.** The recorder, the replay and the interface get read-only broker access. Only the order manager can trade, and only after risk approval.

A Appendix: methodology

COMPONENT	METHOD
Intraday prices	One-minute S&P 500 index bars (Dukascopy USA500 feed), 1,957 sessions, January 2019 to October 16, 2026. Each session is shifted so its 4:00 PM value equals the official SPX close. Hourly changes correlate 0.981 with Yahoo ^GSPC hourly bars (2023–2026), median difference 0.45 points.
Other data	Daily VIX, VIX1D and VIX3M (Yahoo Finance); FOMC dates (Federal Reserve); half-days (NYSE calendar).
No look-ahead	A decision at minute *t* uses only bars closed by *t*. The bias filter uses the move from the open at the pulse bar's close. Entry is at the close of the minute that crosses the trigger (about 30–60 s of latency, as live). Exits are checked every minute.
Option prices	Black-Scholes on trading time (390 minutes × 252 days). At-the-money 0DTE volatility = 0.62 × VIX at the open, calibrated two ways: the median VIX1D/VIX ratio at the open (0.614) and the realized 10:30-to-close variance on these paths (0.617). A put-skew smile is added; at-the-money put spreads price about $0.24 below call spreads, consistent with live fills.
Costs	Bid/ask per leg $0.05 + 1.5% of price (× 1.3 when VIX ≥ 25). Entries fill at the natural price, exits at the ask side, plus $0.05 extra on stops. Commissions and fees $1.30 per leg per side. Settlement at the official close.
Validation design	In-sample 2019–2022, out-of-sample 2023–2026. Settings chosen in-sample only. Anchored walk-forward: for each year, the condor setting with the best Sharpe on all earlier data (minimum 100 trades) is traded in that year only. Coin-flip benchmark: same days and entry minutes, random direction, 100 draws.
Live check	Model replayed over March 11 – May 1, 2026, offline days excluded, and compared trade-by-trade with the reconciled live record.
Reproducibility	All tables are produced by scripts in the project's research toolkit; raw outputs (trade lists, grids, sensitivity runs) are stored as CSV and JSON next to the code. The figures in this report were regenerated from those outputs; Candidate A's trade list was re-run and matched the published statistics exactly.

B Appendix: limitations

- **Option prices are modelled, not historical quotes.** This is the largest caveat and the reason the condor is called promising rather than proven. Gate 2 exists to remove it.
- **The intraday path is an index CFD aligned to the SPX close.** It tracks closely (0.98 hourly correlation), but opening prints can differ by several points (95th percentile about 18 points against the official open, which is itself stale at 9:30).
- **Minute granularity.** Fast moves inside a minute and stop slippage on violent days may be understated, although $0.05 extra is assumed on every stop.
- **Small live sample.** 21 trades at mixed sizes can confirm direction but cannot measure an edge precisely. The live record is used as a sanity check, not as a test.
- **Event coverage.** Only FOMC days were tested as an event filter. CPI and payroll data are released at 8:30 ET, before any entry, so their effect is already in the opening gap.

- **Selection risk in the condor search.** Even with a held-out period, picking one of 160 settings carries some risk of a lucky choice. The walk-forward and the 66-of-160 positive count reduce it but do not remove it.
- **Live figures** come from the project's daily validation log and broker reconciliation. Per-contract live figures divide each trade's net P&L by its contract count.

C Appendix: glossary

0DTE	An option that expires on the day it is traded.
Credit spread	Selling one option and buying a further out-of-the-money option of the same type; the seller collects a credit and the bought option caps the loss.
Iron condor	A put credit spread and a call credit spread together; profits if the index stays between the two short strikes.
Delta (10-delta)	Roughly, the market-implied probability that an option finishes in the money; a 10-delta strike is far from the current price.
Natural price	Selling at the bid and buying at the ask: the least favourable price that will usually fill immediately.
Profit factor	Gross profits divided by gross losses. Below 1.0 means the strategy loses money.
Look-ahead bias	A backtest using information that would not have been available at the moment of the decision.
Out-of-sample	Data not used to choose any rule or parameter, kept back to test the result honestly.
Walk-forward	Re-choosing settings each year using only earlier data, then testing on the next year.
t-statistic	Average result divided by its standard error; values beyond about ±2 are unlikely to be noise.

Disclaimer. This is a personal research and engineering project. Nothing in this document is investment advice or a recommendation to buy or sell any security or to use any strategy. Options trading involves substantial risk of loss. Backtested and simulated results are hypothetical, have inherent limitations and do not represent actual trading; past performance, simulated or live, does not guarantee future results. Live figures are from a small personal account and are shown only to document the project.