Pyramid Poker: Complete Strategy Reference Guide

Version: 2.0 - Advanced Reference Edition

Date: August 28, 2025

Target: Personal Strategy Reference

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1. Core Game Principles

The Golden Rule: Hand Strength Hierarchy

Back ≥ Middle ≥ Front - This is inviolable.

- **Back Hand (5-8 cards):** Strongest possible arrangement
- **Middle Hand (5-7 cards):** Medium strength
- **Front Hand (3-5 cards):** Weakest arrangement

Special Rule: 5-card front hands must be at least a straight or better.

Scoring System Reference

Hand Type	Front	Middle	Back
High Card/Pair/Two Pair	1	1	1

Hand Type	Front	Middle	Back
Three of a Kind	3	1	1
Straight	4	1	1
Flush	4	1	1
Full House	5	2	1
Four of a Kind	12	8	4
Straight Flush	15	10	5
Five of a Kind	18	12	6
Special Large Hands:			
6-card Straight Flush	N/A	16	8
7-card Straight Flush	N/A	22	11
8-card Straight Flush	N/A	N/A	14
6 of a Kind	N/A	20	10
7 of a Kind	N/A	28	14
8 of a Kind	N/A	N/A	18

Wild Card Fundamentals

- **Two wild cards (jokers)** in deck
- **Tiebreaker advantage:** Count as Spades (except in flushes)
- **Strategic placement:** Most critical decision in many hands
- **Completion power:** Fill straights, flushes, create 5+ of a kind

The Scoop Strategy

Scoop Definition: Winning all three hands against an opponent for bonus points

Key Principle: It's generally better to have three solid, competitive hands than to have one unbeatable hand and two very weak ones that will likely lose. Balance is key.

Strategic Impact:

- Affects resource allocation decisions
- May justify using premium cards in middle/front positions
- Consider opponent tendencies when evaluating scoop potential

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2. Empirical Win Rate Analysis

Based on 60,000+ hands of actual game data

Front Hand Win Rates by Hand Type

Hand Type	Avg Win Rate	Min-Max Range	Sample Size	Strategy Notes
Straight Flush	100.0%	100%-100%	339	Automatic dominance across all ranks
Four of a Kind	100.0%	100%-100%	1,207	Automatic dominance across all ranks
Full House	98.2%	95%-100%	2,748	Near-automatic, slight variation by rank
Flush	87.3%	78%-94%	7,456	High flushes significantly stronger
Straight	66.1%	52%-79%	9,021	Broadway straights much stronger
Three of a Kind	50.7%	35%-68%	25,159	Aces/Kings vs low trips major difference
Pair	22.8%	8%-41%	42,266	Aces/Kings vs low pairs huge gap
High Card	3.9%	1%-8%	1,236	Even ace-high rarely wins

Key Insight: Front position rewards premium hands heavily. 4K/SF create 100% win scenarios.

Middle Hand Win Rates by Hand Type

Hand Type	Avg Win Rate	Min-Max Range	Sample Size	Strategy Notes
6-card Straight Flush	100.0%	100%-100%	10	Ultra-rare elite - no variation
Straight Flush	100.0%	100%-100%	2,187	Elite tier - no variation
Five of a Kind	100.0%	100%-100%	1,041	Elite tier - no variation
Four of a Kind	97.2%	94%-100%	8,944	Near-elite, high 4K slightly better
Full House	77.8%	68%-86%	14,433	Aces full vs low full houses differ
Flush	43.1%	31%-58%	14,177	High flushes vs low flushes major gap
Straight	16.4%	9%-26%	3,474	Broadway vs wheel significant difference
Two Pair	4.7%	2%-9%	428	High two pair vs low - still weak
Pair	2.4%	1%-6%	15,665	Premium pairs barely better than low

Key Insight: Middle position shows clear tiers. 4K+ = elite (97%+), FH = competitive (78%).

Back Hand Win Rates by Hand Type

Hand Type	Avg Win Rate	Min-Max Range	Sample Size	Strategy Notes
8-card Straight Flush	100.0%	100%-100%	77	Ultra-elite - no variation
7-card Straight Flush	99.9%	99%-100%	429	Ultra-elite - minimal variation
7 of a Kind	100.0%	100%-100%	3	Ultra-elite (rare) - no variation
6 of a Kind	99.0%	97%-100%	348	Elite tier - high ranks slightly better

Hand Type	Avg Win Rate	Min-Max Range	Sample Size	Strategy Notes
6-card Straight Flush	97.8%	94%-100%	1,669	Elite tier - high SF better
Five of a Kind	94.6%	89%-98%	1,996	Elite tier - significant rank variation
Straight Flush	89.8%	82%-96%	5,118	Strong tier - royal vs low major gap
Four of a Kind	69.5%	54%-83%	18,458	Competitive - aces vs deuces huge gap
Full House	35.0%	22%-48%	19,921	Moderate - boat rank very important
Flush	10.4%	4%-18%	11,482	Weak tier - nut flush vs low flush
Straight	0.7%	0%-3%	442	Very weak - Broadway barely wins
Two Pair	0.0%	0%-1%	57	Never wins - even aces and kings

Key Insight: Back position is most competitive. Large hands (6+ cards) dominate with 95%+ win rates.

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3. Position-Specific Strategy

Front Position Strategy

Objective: Maximize point multipliers with premium hands

Elite Targets (97%+ win rate):

- Four of a Kind (12 points) - Priority #1
- Straight Flush (15 points) - Priority #1

Competitive Range (50-90% win rate):

- Full House (5 points) - Solid choice
- Flush/Straight (4 points) - Reasonable
- Three of a Kind (3 points) - Baseline

Avoid When Possible:

- Pairs (1 point, 23% win rate)
- High Card (1 point, 4% win rate)

Middle Position Strategy

Objective: Balance strength with resource efficiency

Elite Tier (95%+ win rate):

- 5K/SF/6-card SF - Use when available

- Four of a Kind (8 points, 97% win rate)

Strategic Tier (70-80% win rate):

- Full House (2 points, 78% win rate) - Efficient choice

Avoid in Middle:

- Two Pair/Pair (5% win rate or less)
- Straight unless desperate (16% win rate)

Back Position Strategy

Objective: Compete for large hand opportunities

Priority Hierarchy:

1. **Ultra-Elite (99%+):** 7K, 8-card SF, 7-card SF
2. **Elite (95%+):** 6K, 6-card SF, 5K
3. **Strong (90%+):** Straight Flush
4. **Competitive (70%+):** Four of a Kind

Critical Insight: Back position requires the highest standards. Flush/Straight/Two Pair have very low win rates (0-10%).

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4. Wild Card Optimization

Wild Card Priority Framework

Scenario Analysis Based on 0-2 Wild System:

0 Wild Cards

- Focus on natural hand strength
- Prioritize position-appropriate arrangements
- Use empirical win rates for hand selection

1 Wild Card

- **High-Value Targets:**
  - Complete 4K in front (100% win, 12 points)
  - Complete SF in front (100% win, 15 points)

- Complete 5K in middle/back (100% win, 12/6 points)

- **Efficiency Calculations:**
  - Wild completing 4K front: 12 × 100% = 12 expected points
  - Wild completing SF front: 15 × 100% = 15 expected points
  - Wild completing FH front: 5 × 98.2% = 4.91 expected points

2 Wild Cards

- **Premium Opportunities:**
  - Create 6K+ for back position (99%+ win rates)
  - Create dual premium hands (4K front + 5K back)
  - Complete multiple straights/flushes

Wild Card Decision Matrix

Scenario	Use Wild(s) For	Expected Value	Priority
Can make 4K/SF front	Front hand	12-15 points	Highest
Can make 5K+ back	Back hand	6-18 points	High
Complete strong middle	Middle hand	2-12 points	Medium
Fill weak hands	Any position	1-4 points	Low

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5. Hand Recognition & Detection

Special Hand Recognition Patterns

Large Hand Opportunities (6-8 cards)

6+ of a Kind Requirements:

- Need 6+ cards of same rank
- Only possible in middle/back positions
- Wild cards can substitute

6-8 Card Straight Flush Requirements:

- 6+ consecutive cards of same suit
- A-2-3-4-5-6 through 9-10-J-Q-K-A sequences
- Wild cards can fill gaps

Automatic Win Detection

Three Flushes: Three separate 5-card flushes **Three Straights:** Three separate 5-card straights
Three Full Houses: Three separate full houses **Dragon:** A-K-Q-J-10-9-8-7-6-5-4-3-2 of different suits

Hand Strength Calculation

Your system uses a ranking system where:

- **Rank 10:** Five of a Kind
- **Rank 9:** Straight Flush
- **Rank 8:** Four of a Kind
- **Rank 7:** Full House
- **Rank 6:** Flush
- **Rank 5:** Straight
- **Rank 4:** Three of a Kind
- **Rank 3:** Two Pair
- **Rank 2:** One Pair
- **Rank 1:** High Card

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6. Arrangement Optimization Methods

Your system implements multiple optimization approaches:

Method Comparison

Points Method

- **Objective:** Pure point maximization
- **Use Case:** Baseline reference
- **Characteristics:** Simple, direct scoring

Tiered/Tiered2 Method

- **Objective:** Position-optimized scoring
- **Use Case:** Game play optimization
- **Performance:** Highest empirical scores
- **Strategy:** Maximizes points even on weak hands

Empirical Method

- **Objective:** Win probability optimization
- **Use Case:** Data-driven decisions
- **Limitation:** Sparse data for rare combinations
- **Strength:** Uses actual game results

NetEV Method

- **Objective:** Risk-adjusted optimization
- **Use Case:** Mathematical validation
- **Characteristics:** Conservative, loss-aware
- **Performance:** Best with wild cards

Method Selection Guidelines

For Actual Play: Use Tiered/Tiered2

- Maximizes scoring potential
- Optimized for competitive play
- Handles weak hands effectively

For Analysis: Use NetEV

- Risk-adjusted thinking
- Accounts for loss scenarios
- Better wild card evaluation

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7. No-Surrender Strategy

Core Approach

Objective: Arrange 17 cards for maximum total points across all opponents

Strategic Process

1. **Scan for Automatics:** Check for guaranteed wins first
2. **Identify Power Cards:** Find your strongest potential hands
3. **Position Allocation:** Place hands according to win probability

4. **Resource Optimization:** Don't waste premium cards in low-scoring positions

Look for Automatic Wins

With 17 cards, you have a chance to form an "Automatic Win" hand. Always check for these possibilities first, as they guarantee points from non-automatic players:

Three Flushes: Three separate 5-card flushes (15 cards + 2 extras) **Three Straights:** Three separate 5-card straights (15 cards + 2 extras)
Three Full Houses: Three separate full houses (15 cards + 2 extras) **Dragon:** A-2 of different suits (13 cards + 4 extras)

Priority: Always check for automatic potential before optimizing individual hands.

Hand Allocation Priority

Step 1: Check for Automatic Wins first

- Scan for Three Flushes, Three Straights, Three Full Houses
- Look for Dragon potential (A-2 of different suits)
- If automatic possible, prioritize completion over individual hand strength

Step 2: Determine your best possible back hand

- Look for large hands (6-8 cards) first
- SF/5K potential
- Settle for 4K/FH if necessary

Step 3: Optimize remaining cards for middle

- Avoid putting strong cards in middle if they create better front opportunities
- Target FH/4K if possible

Step 4: Front hand optimization

- Look for 4K/SF opportunities (100% win rate)
- Accept 3K/FH if stronger options unavailable
- Use empirical win rates to evaluate borderline decisions

Step 5: Balance for Scoop Potential

- Consider whether three competitive hands might outscore one dominant hand

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8. Standard Version Strategy

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Wild Card Assessment - The Primary Decision Factor

Rule #1: Wild cards fundamentally change the play/surrender equation.

Two Wild Cards = Always Play (100%)

If you have both wild cards in your 13-card hand, this is an automatic play decision. You have an overwhelming advantage that makes surrender mathematically impossible to justify.

Why this is obvious:

- You control both wild cards - no opponent can have any
- Wild cards can complete virtually any hand combination
- With 4 more cards coming, you can create multiple premium arrangements
- Your arrangement flexibility is unmatched

One Wild Card = Play 98% of Time

Mathematical reasoning:

- **Opponent wild probability:** At most 1 opponent can have the other wild
- **More likely scenario:** The other wild is in undealt cards
  - 24 cards dealt to other players (4 players × 6 cards each if 6 players, etc.)
  - 4 cards left over in the kitty system
  - **Total of ~28-38 cards that could contain the other wild**
  - **Probability the other wild is held by opponent:** Very low

Strategic advantage with 1 wild:

- At least 4+ opponents have zero wilds
- You have significant completion advantage
- Can guarantee strong hands in premium positions
- Opponents are competing with natural cards only

The 2% surrender scenarios (extreme cases only):

- Absolute trash hand (no pairs, no connects, all low cards)

- AND heavy competition (many aggressive players staying)
- AND you're in a tournament situation where survival matters more than EV

The Play vs Surrender Decision Framework

Step 1: Count Your Wild Cards

- **2 wilds:** Play immediately, don't analyze further
- **1 wild:** Play unless absolutely extreme circumstances
- **0 wilds:** Proceed to detailed analysis below

Step 2: Zero Wild Analysis

Only when you have no wild cards should you consider surrender

When to PLAY (0 wilds):

Guaranteed Automatic Hands:

- **Dragon in Hand:** If your 13 cards form a Dragon (A-2 of different suits), you have a guaranteed automatic win. This is almost always a "Play".

Strong Automatic Potential:

- **12/13 Dragon Cards:** One card away from guaranteed Dragon
- **Two Complete + Partial:** Two completed flushes and three cards of a third suit
- **Two Complete Straights:** Plus strong connectors for the third straight
- **Strong Three Full House Potential:** Multiple three-of-a-kinds and pairs

Strong Foundation Hands:

- **Multiple Pairs:** Your hand contains multiple pairs, three-of-a-kinds
- **Suited Connectors:** Strong flush and straight potential
- **Flexible Combinations:** Cards that can be arranged multiple ways

Situational Factors:

- **Few Players Remain:** If several players have already surrendered, the pot is larger and you have fewer opponents to beat. This makes playing more attractive even with a mediocre hand.

When to SURRENDER (0 wilds only):

"Trash" Hands:

- **Disconnected Cards:** Your 13 cards are disconnected, have few pairs, and no flush or straight potential
- **Low-Value Cards:** Your hand is full of low-ranking cards with little chance of making strong combinations
- **No Improvement Potential:** Even with 4 more cards, unlikely to create competitive arrangements

Competitive Considerations:

- **Many Aggressive Players:** If you are at a table with players who play almost every hand, the competition will be fierce. It's better to wait for a premium hand.
- **Strong Competition:** When most players stay in, you need premium hands to compete

Cost-Benefit Analysis:

- Surrendering costs 30 units total (20 ante + 10 surrender)
- Playing and losing could cost your 20-unit ante plus additional losses from poor matchups
- Don't throw good money after bad

Wild Card Probability Analysis

Distribution Mathematics

With 2 wild cards in the deck:

- **You get 0 wilds:** ~64% of hands
- **You get 1 wild:** ~32% of hands
- **You get 2 wilds:** ~4% of hands

Competitive Impact

When you have 1+ wilds:

- Most opponents (4-5 players) have zero wilds
- Your arrangement flexibility dramatically exceeds theirs
- You can complete hands they cannot
- Even mediocre natural cards become playable with wild support

When you have 0 wilds:

- 36% chance at least one opponent has 1+ wilds
- You're competing on natural card strength only

- Need genuinely strong foundation to justify play
- This is the only scenario where surrender makes mathematical sense

Post-Kitty Strategy (Now You Have 17 Cards)

Once you have your 17 cards, the strategy reverts to the No-Surrender principles: arrange your hands for the best possible outcome.

However, you must also consider the strength of the opponents who chose not to surrender. They likely have strong hands as well, so you may need a more powerful arrangement to win.

Key Adjustments:

- Apply No-Surrender optimization principles
- **Critical Assumption:** Remaining opponents have strong hands (they didn't surrender)
- **Strategic Adjustment:** May need higher-tier arrangements to compete effectively
- **Focus:** Maximize your arrangement strength using empirical data, don't play defensively
- **Heightened Competition:** Expect other players to have premium arrangements

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9. Common Mistakes & Validation

Arrangement Validation Errors

Strength Order Violations

Most Common: Middle hand stronger than back hand

- **Cause:** Focusing on individual hand strength vs. relative strength
- **Solution:** Always compare hand rankings, not just names

Invalid Hand Compositions

Front Hand Errors:

- 5-card front weaker than straight
- More than 5 cards in front position

Card Count Errors:

- Wrong number of cards in positions
- Total cards ≠ 17

Strategic Mistakes

Wild Card Misallocation

Common Error: Using wild card to improve already-strong hand **Better Approach:** Use wild to create premium hands in high-multiplier positions

Position Misunderstanding

Error: Putting moderate hands in front position **Correction:** Front position should get either premium hands (4K/SF) or weak hands by necessity

Ignoring Empirical Data

Error: Overvaluing hands with low win rates **Example:** Putting flush in back position (10.4% win rate) when better allocation exists

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10. Mathematical Foundation

Expected Value Calculations

Basic Expected Value Formula

EV = (Win Probability × Points if Win) - (Loss Probability × Points if Loss)

Position-Specific Multipliers

- **Front premium hands:** High multipliers (12-18 points) × high win rates (95%+)
- **Middle efficiency:** Moderate points × good win rates
- **Back competition:** Variable points × position-dependent win rates

Win Probability Estimation

Your system uses empirical data when available, falls back to:

- Hand strength ranking (0-10 scale)
- Position adjustments
- Player count modifications

Risk-Adjusted Optimization

NetEV Method Philosophy

- Accounts for loss scenarios (ignored by pure point methods)
- More conservative on uncertain hands
- Better wild card evaluation through risk assessment

Practical Application

High-Certainty Hands: All methods converge (95%+ win rate hands) **Medium Hands:** Tiered methods optimize for points, NetEV for risk **Weak Hands:** Significant method divergence, empirical data most valuable

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11. Quick Reference Tables

Hand Type Quick Reference

Hand Type	Front Avg (Range)	Middle Avg (Range)	Back Avg (Range)	Key Insights
8-card Straight Flush	N/A	N/A	100% (100%-100%)	Ultra-elite back only
7-card Straight Flush	N/A	N/A	100% (99%-100%)	Ultra-elite back only
7 of a Kind	N/A	N/A	100% (100%-100%)	Ultra-elite back only
6-card Straight Flush	N/A	100% (100%-100%)	98% (94%-100%)	Elite middle/back
6 of a Kind	N/A	N/A	99% (97%-100%)	Elite back only
Straight Flush	100% (100%-100%)	100% (100%-100%)	90% (82%-96%)	Elite everywhere, royal vs low gap
Five of a Kind	N/A	100% (100%-100%)	95% (89%-98%)	Elite middle/back
Four of a Kind	100% (100%-100%)	97% (94%-100%)	70% (54%-83%)	Elite front, rank matters in back
Full House	98% (95%-100%)	78% (68%-86%)	35% (22%-48%)	Front premium, rank critical in back
Flush	87% (78%-94%)	43% (31%-58%)	10% (4%-18%)	High flushes much stronger
Straight	66% (52%-79%)	16% (9%-26%)	1% (0%-3%)	Broadway vs wheel major difference
Three of a Kind	51% (35%-68%)	N/A	N/A	Premium trips vs low trips huge gap

Hand Type	Front Avg (Range)	Middle Avg (Range)	Back Avg (Range)	Key Insights
Two Pair	N/A	5% (2%-9%)	0% (0%-1%)	Weak everywhere
Pair	23% (8%-41%)	2% (1%-6%)	N/A	Aces/Kings vs low pairs enormous gap
High Card	4% (1%-8%)	N/A	N/A	Desperation only

Wild Card Quick Decisions

Situation	Best Use	Expected Points	Action
Can complete 4K front	Use for front	12+	Always
Can complete SF front	Use for front	15+	Always
Can complete 5K back	Use for back	6+	Usually
Multiple weak options	Fill strongest gap	Varies	Calculate EV

Position Priorities

Position	Primary Goal	Secondary Goal	Avoid
Front	4K/SF (100% win)	FH/Flush (87%+)	Pairs (23%)
Middle	4K+ (97%+ win)	FH (78% win)	2P/Pair (5%)
Back	Large hands (95%+)	SF/4K (70%+)	Flush (10%)

Emergency Decisions

When forced to place weak hands:

- **Back position:** Accept that some hands can't win back
- **Middle position:** Prefer pairs over worse options
- **Front position:** High card only in desperation (4% win rate)

Conclusion

This reference guide integrates empirical data from 60,000+ hands with strategic principles. The key insights:

1. **Position matters immensely** - Same hand types have vastly different win rates by position
2. **Empirical data beats intuition** - Actual win rates reveal surprising patterns

3. **Wild cards are game-changers** - Optimal placement can swing outcomes dramatically
4. **Method selection matters** - Use Tiered for play, NetEV for analysis
5. **Large hands dominate** - 6+ card hands create near-automatic wins

Use this guide as a comprehensive reference for decision-making, but remember that poker involves variance - even optimal play sometimes loses to inferior arrangements due to the random nature of opponent hands.

Last Updated: August 28, 2025
Data Source: Personal game analysis system with 300+ validated test cases