

STRATEGIES TO BEAT Small Stakes Pot-Limit Omaha

MATTHIAS PUM



from beginner to winner in 28 lessons

Matthias Pum is a coach on pokerstrategy.com focusing on public coaching sessions and professional hand analysis. He also produces training videos for pokerstrategy.com and coaches students privately. He has just completed a Masters degree in Computer Science. He has been playing poker at a high level for over 5 years.



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Introduction

What is This Book All About?

This book will teach you important concepts you must learn in order to get an edge on the field of players in micro-stakes¹ and small-stakes² short-handed (SH)³ Pot-Limit Omaha (PLO). Once this foundation is built, I will present more advanced topics that will give you the tools you need to further elevate your game. Although the concepts in this book are primarily directed towards online cash-game⁴ players, they also are applicable to the tournament⁵ player. Once you've mastered these important concepts, you will even be able to adapt them to the casino tables. This information, once exclusively available only to my private coaching students, is now available to you, the reader of this book.

My Own Experience

With a lot of dedication and passion for the game, I managed to move up from micro-stakes to profitable mid-stakes⁶ SH PLO in less than five months. My major skill-sets include:

- ♠ Coach for the German section of pokerstrategy.com
- ♠ Professional hand analyst
- ♠ Poker video producer
- ♠ Poker coach, offering both public lessons to the community and private lessons for hire

Because this book is all about profiting in PLO, and then climbing in stakes and profiting even more, I would like to present my own ascent in [Figure 1](#). This is my Net Profit vs. Time (as measured in hands played) Plot. I produced this graph using Hold'em Manager 2 (which will be one of the software tools you will learn to use in this book). If you analyze this graph, you can see my progression as I moved up (and also down at times - which is part of the game) from **PLO \$0.10/\$0.25** games to **PLO \$0.50/\$1** games back in the day. During this period, I managed to increase my starting bankroll of \$1,000 to \$10,000 within 130,000 hands, which equated to 4 months of actual play. As you can see from the curvature of the graph, even when you do profit in the long run, you should be prepared for a lot of short periods of "run good," as well as some terrible "coolers" along your way up. It's a bumpy ride! I can attribute my periodic dips in profit to either learning something the hard way (i.e., adding a new concept which was difficult at first, but later turned out to be profitable, like defending the blinds looser), and the factor of variance⁷, which can be huge in a game like PLO. Looking at my winnings chart, a combination of a poor mindset and sloppy bankroll management resulted in large short-term ups and downs [Points 1 and 2]. After these free falls, I barely had enough bankroll to still play the \$50 games. That's when I finally decided to commit myself to solid grinding again [At Point 3]. My efforts eventually paid off and I managed to get back to an acceptable win rate at these stakes [Point 4]. After about 100,000 hands, I was prepared to give the \$100 games a shot [Point 5], which should take me another 50,000 or so hands of adapting to this highly competitive environment before

finally stabilizing. As you can judge, this graph tells my little story, from starting off as a “tilt-box” to becoming a solid winning player over time. You may experience similar travails in your poker career, especially during your learning phase. Don’t get demotivated when in a long and deep “cooler.” Even the best PLO players in the world, like Phil “MrSweets28” Galfond himself, endure losing streaks that last for months; this is simply the nature of the game.

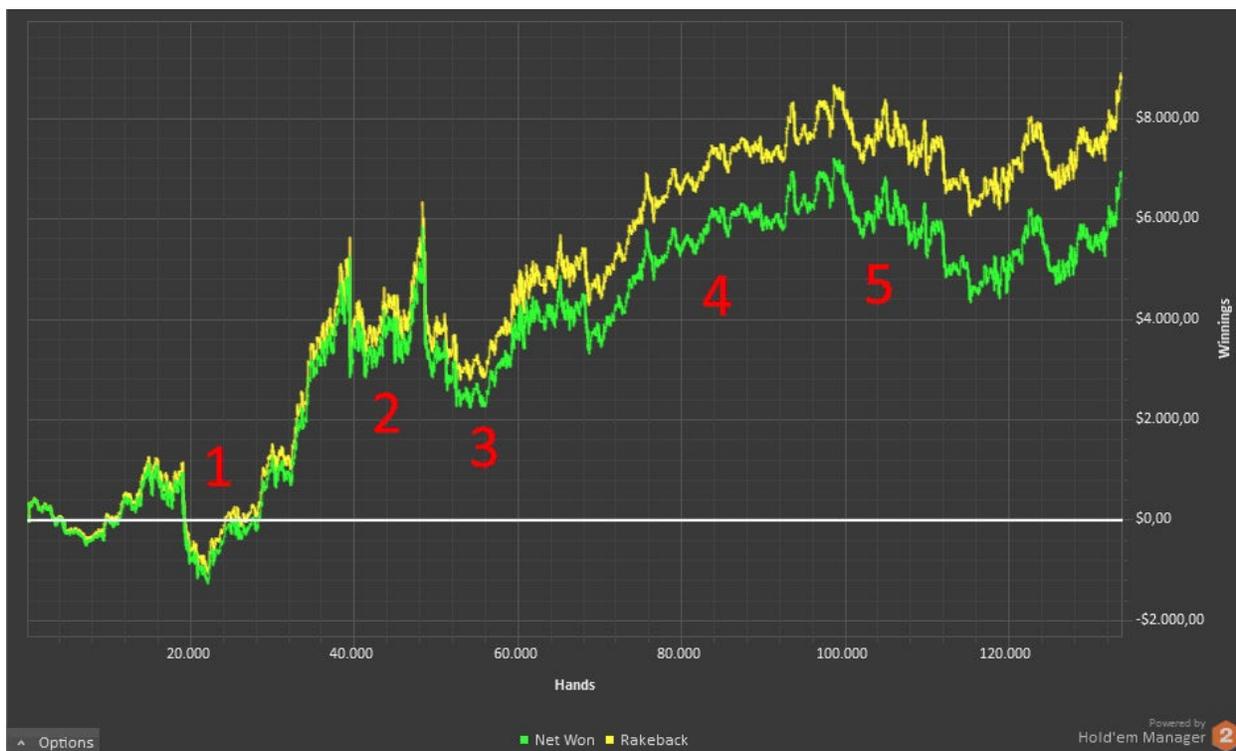


Figure 1: Moving up from \$0.10/\$0.25 to \$0.50/\$1 after 130,000 hands [Rakeback is the amount you get back from being a loyal customer]

What Does the Title of This Book Mean?

The title of this book emphasizes the time period in which you will be able to gain a very high level of confidence when you play PLO – if you truly study and practice. In just a month, you will learn **HOW** to make the right play, and understand **WHY** you must make one play over another in a given situation. This is one of the most important concepts in a high-variance poker game, such as PLO. I can speak from experience. Before I truly understood the concepts presented in this book, there were times where I convinced myself I possessed a very solid game. This was based simply on short-run profit; however, in reality I was just a “luck box” on a big “heater.” Weeks later, the pendulum labeled “Law of Averages” would swing. The pendulum becomes more of a wrecking ball, as my bankroll got wiped out and I was rebuying. It’s an awful and discouraging feeling when you realize too late that your game had leaks that were covered up by luck.

How to Solve the Problem of Leaks in Your Game

The source of this problem basically lies in the uncertainty of not knowing if you are playing well or just running very good. The key to solving this problem is being able to justify every single play you are making. Being able to do this requires knowledge of the fundamental concepts of the game. We will start off by learning important pre-flop principals, followed by post-flop play and the occasional mathematical reasoning that supports these plays.

Who Should Read This Book?

This book is written just for you if any of the following apply.

- ♠ You are a complete poker beginner
- ♠ You know the basic rules of PLO, but lack the confidence to risk money at a real or virtual table ♠ You are a Hold'em player who would like to add PLO for some variety in your poker game. For the Hold'em player, I can tell you nothing matches the excitement and action of PLO.
- ♠ You have already played PLO, but with little or no success ♠ You are wanting to improve your game plan by plugging leaks in your current game ♠ You are an advanced PLO player who desires to go to the "next level."

Why Should You Read THIS Book?

I would answer this by saying that the 28 days' worth of powerful PLO concepts will raise your game. While the concepts are not as difficult as you might have imagined, don't always expect easy reading; absolute beginners will be challenged during their first days. Some of the topics may require a second or third reading to fully comprehend the concepts and apply them to the tables. That said, even without any prior Omaha experience or strong mathematical background, you can play winning PLO in four weeks, assuming you have the time to study and practise one lesson per day. Even the math presented in this book focuses on executable in-game approximations to the mathematically correct answer. This enables you to make the correct play without having to make grueling calculations in the middle of a hand.

Another reason is the fact that I am writing this book specifically for you, the aspiring PLO player. Most Omaha books were written by poker players who built their bankrolls through No-Limit Hold'em (NLHE) and later added PLO at the mid-stakes level. However, these writers do not understand the significant differences between players who are playing at mid-stakes, compared to micro-stakes and/or low-stakes players that this book is geared towards. Since I started from the very bottom of the limits, and successfully worked my way upwards, I consider myself eminently qualified to illustrate the important aspects for specifically winning at these stakes.

Another reason to read this book is that it takes a different approach from other poker books out there. I use a highly instructional approach. Mastering each daily topic in this book is made easier by dividing the concept into four distinctive components:

- ♠ The Introduction
- ♠ The Exercises
- ♠ The Solutions to the Exercises
- ♠ The Practice

The Introduction gives you a brief overview of the topic so that you get the theory of the specific concept and background information needed to solve the exercises.

The Exercises is your “homework” for the material presented in the Introduction. You will find it challenging, yet rewarding. There are several approaches to successfully completing the exercises. You can analyze the problem yourself and formulate an answer, consult with your “poker buddies,” or even research the answer using the poker resources on the Internet to gain additional insight. But based on my experience, the most effective way to improve your game is to work out the Exercises on your own and not “peek” at the answers. Like any successful player, you must invest your own brainpower and due diligence to produce a winning approach.

The Solutions is where you check your homework. Here, you can compare and evaluate your answers with the suggested answers presented by the author.

Finally, the Practice is where you get advice on how you should further exercise your daily topic and actually apply it at a PLO table. The Practice helps solidify your knowledge of each day’s topic. As you might have noticed by now, there is a lot to learn. So practicing each day’s worth of lessons immediately after you have learned it, and demonstrating you can complete the associated exercises, helps you make the transition from theory to application at the Omaha table. At the end of each practice part you will be presented with a summary, where you can verify that you understood all the important lessons of the day.

The Appendix (available at dandbpoker.com)

Last, but not least, there is also an Appendix (split into five sections) where you can get additional information about the basics of the game and useful utilities, like hand charts. This is not in the book but can be found and downloaded at www.dandbpoker.com/product/strategies-to-beat-small-stakes-pot-limit-omaha.



I link the relevant applicable Appendix section to correspond to the days where they will be relevant. If you are somewhat unfamiliar with some of the poker jargon, there is a Glossary at the very end of the book where all these poker terms are defined. There is also a Glossary of Statistics, which identifies and explains all the abbreviations used when discussing statistics and also identifies the precise meaning of each statistic.

By now, I'm sure you are looking forward to starting your 28-day Short-Handed PLO "Boot Camp." So, let's begin.

WEEK ONE

The Journey Begins

By acquiring this book, you have made the commitment to learn the game of Pot Limit Omaha, and/or to improve your existing PLO game. The goal for our first week will be to get a good overall feeling for the game if you have never played or a better feeling for the game if you have played. If you are completely new to Omaha (even if you are an experienced Hold'em player), don't know the rules of PLO yet, or don't know how a typical PLO hand is played, I strongly recommend that you review Appendix 1 (the link is given in the introduction), Basic Rules of PLO. Even if you are a seasoned Omaha Hi/Lo player, it might be worth your time to review Appendix 1 to understand the nuances of PLO.

Day One

Position

This book is aimed at short-handed PLO players so the first thing we have to know are the names of the seats – relative to the positions on such a table. A player's position is very important in all sorts of poker games, like Omaha and Hold'em. Some poker pros will actually say position in Omaha is almost as important as the cards themselves! With up to four betting rounds per hand, the advantages of late position and acting last, versus the disadvantages of early position and having to decide first, are compounded.

Introduction

For this book I will use the naming conventions from [Table 1](#) when addressing the seats:

Seat	Name
UTG	Under The Gun
MP	Middle Position
CO	Cutoff
BTN	Button
SB	Small Blind
BB	Big Blind

Table 1: Positions in a SH PLO game

Let's now take a look at [Figure 2](#) to see how these seats are distributed on a poker table:



Figure 2: The pre-flop line-up of a standard short-handed PLO table

To determine the seats, you can start from the BB and go counter-clockwise until you've determined all the seats (see Player 1 to Player 6). Notice that when a player sits out or quits the table then the earliest position gets removed. This means that when there are only 5 players on the table there is no UTG seat.

During pre-flop play, an important fundamental principle in Omaha is that our hand ranges⁸ get looser (i.e., wider) as we work our way, going right (or clockwise) from UTG to the BTN, then tighten up significantly when the blinds get their turn to act. Another point to consider is that our win rate when on the BTN is the highest of the six PLO seats. Having the BTN enables us to play the weakest range of hands and still make the most money. This is because on the BTN, we always have *absolute position* on everyone else in the pot during the Flop, Turn, and River betting rounds. Absolute position in a pot gives us the advantage to always see the actions of our opponents first, because we will always be acting last post-flop. This means that we have an informational advantage over our competition; if the players check it down, we can also take a free card ourselves by checking, if we think this is the cheapest way to improve to the best hand (e.g., on a draw); or, we can attack the "checkin' chickens" and bet into our opponents by representing strong made hands⁹. By doing this, we

can make them fold hands that are potentially better than ours (i.e., “betting for fold equity”¹⁰).

On the flipside, UTG has the distinct disadvantage of not knowing what the rest of the table is going to do pre-flop. If UTG limps¹¹ (or even raises) with a hand that is not particularly strong, he has no idea if he is going to see one or more raises (or re-raises) before it gets back to him. UTG now faces the tough decision of either having to call a potentially big raise with an inferior hand with poor position (in most situations), or folding and giving up money without even seeing a flop. As for the SB and BB, while the blinds may have the opportunity to see the action unfold before it gets to them pre-flop, both will be forced to act early in the much costlier betting rounds after the flop.

Throughout this book, I will often refer to players as being “In Position” (IP) or being “Out Of Position” (OOP), in terms of their absolute position. In heads-up¹² (HU) pots, these terms always refer to the other player in the pot. For example, if you sit in MP and UTG opens with a raise, then you will be IP against him when you call. Of course, you aren’t guaranteed to be IP whenever you sit in MP. Consider another example where you open-raise (also known as a “Raise-First-In” (RFI)) from MP and the player in the CO seat calls. You would be OOP now because he is closer to the right side of the BTN than you.

For multi-way¹³ (MW) pots post-flop, we will consider the term *relative position*. The relative position is determined by our position relative to the Pre-Flop Aggressor¹⁴ (PFA). We want the passive player(s), who limped and/or called to our right, and the PFA directly to our left. In other words, the closer we sit to the right side of the PFA the better our relative position is. Here’s why. A typical MW (with PFA) post-flop situation is that all the players customarily “check to the raiser.” Then, as custom dictates, the PFA places his continuation bet¹⁵ (c-bet) and the other player(s) act accordingly. Having the best relative position to the PFA allows the action of all the other players to unfold in these classic “check to the raiser scenarios,” before we have to make our own decision. During the pre-flop round, it’s especially important to consider our relative position when there are loose players behind us who will potentially join the pot, or when there are already two or more players in the pot before us.

In general, you just have to remember that whoever closes the action, both pre-flop and post-flop, is the player with the best relative position. Relative position is most important in 3-way action. Consider when UTG raises, the SB (a weak player) calls, then you at the BB call. When you flop a monster¹⁶, you stand to win a huge pot when it gets checked to the raiser, the PFA c-bets and the SB calls. When there are four or more players in the pot, absolute position becomes more important than relative position. That’s simply because the

likelihood of a check-down to the PFA's c-bet decreases with more than 3 players in the pot, just because the fold equity (FE) for the PFA decreases with every additional player; therefore, the need to actually have the strongest hand to win the pot increases. Additionally, the probability of a "donk" bet¹⁷ increases with each additional player in the pot. Every donk bet and raise changes the relative positions, because the player who closes the action now changes. Manipulating the relative positions to our favor by donk betting in a MW pot is an advanced topic, which we will discuss on Day 16.

Exercises

1) Which advantages do we have post-flop when we play IP compared to OOP?

2) Why is our relative position in 3-way pots potentially more important than our absolute position?

3) What i) absolute position and ii) relative position do we have in the following situations?

3a) Hero¹⁸ sits in the CO: UTG folds, MP raises, Hero calls (BTN, SB, BB fold) 3b) Hero sits in the BB: UTG folds, MP raises, CO folds, BTN folds, SB re-raises, Hero calls, MP folds 3c) Hero sits on the BTN: UTG raises, MP calls, CO re-raises, Hero calls, SB folds, BB folds, UTG calls 3d) Hero sits in the BB: UTG calls, MP raises, CO folds, BTN calls, SB folds, Hero calls, UTG folds

Solutions

1) Which advantages do we have post-flop when we play IP compared to OOP?

When we are IP, we have the key advantage that we can always see the action of the player(s) before us. This gives us the opportunity to execute devious bluffs or to float our opponent. By floating, we are trying to move our opponent off his hand when he is the PFA, but shows weakness on a later street¹⁹ (typically the turn). This is most effective when scare cards²⁰ come which we can represent.

If we are the PFA then most likely our opponent checks to us on the flop (OTF) since we showed pre-flop aggression [As discussed earlier, one of the oldest and most pat axioms in poker after the flop is “Check to the Raiser!"]. This allows us to check behind and get a free card, which is great when we are on a big draw or want to take a cheap showdown.

The next point is fold equity. If you are OOP, then you are forced to fold a lot more to c-bets. That’s because it’s very difficult to see a showdown when you play from OOP and the IP player is firing bullets at you. Not only can you not get a free card to possibly take the lead, but also don’t have any good possibilities to outplay your opponent without risking your stack. When we later discuss post-flop statistics, we will see that when we compare the “Fold to CBet IP/OOP” usually (at least for somewhat competent opponents) the Fold to CBet OOP is higher by a reasonable margin.

The last point is that we have more implied odds IP. We will learn more on the topic of implied odds during Day 25.

2) Why is our relative position in 3-way pots potentially more important than our absolute position?

A typical post-flop situation is that all the players check to the PFA, the PFA places his c-bet and the other player(s) act accordingly. Imagine a situation where MP open raises, the BTN calls and Hero calls in the BB. Hero now has the worst absolute position because he is the farthest away from the right side of the BTN. However, since he was closing the action he is now in the best relative position. OTF, Hero checks to the PFA, who will most likely make his c-bet and the BTN has to react to this. Although he has absolute position it's a very difficult situation for the BTN, who is now in the so-called "sandwich" position²¹, because he is between players who haven't provided much information about their actual hand strength yet.

If the BTN folds, then Hero will know he is HU against only the PFA. If the BTN calls or raises, then Hero learns a lot about the hand strength of the BTN without putting out any chips.

3) What i) absolute position and ii) relative position do we have in the following situations?

3a) Hero sits in the CO: UTG folds, MP raises, Hero calls (BTN, SB, BB fold)

i) We have the best absolute position because we sit closer to the right side of the BTN than Villain²².

ii) Because the pot is HU our relative position is equal to our absolute position.

3b) Hero sits in the BB: UTG folds, MP raises, CO folds, BTN folds, SB re-raises²³, Hero calls, MP folds

i) We have the position because Villain sits closer to the right side of the BTN than we do.

ii) Because the pot is HU our relative position is equal to our absolute position.

3c) Hero sits on the BTN: UTG raises, MP calls, CO re-raises²⁴, Hero calls, SB folds, BB folds, UTG calls, MP calls

i) We sit directly on the BTN, which means we always have the absolute position in the pot.

ii) We have the worst relative position because we have to act first after it is checked down by the UTG and MP players, then c-bet by the PFA (CO) on the flop. MP has the best relative position because he closes the action.

3d) Hero sits in the BB: UTG calls, MP raises, CO folds, BTN calls, SB folds, Hero calls, UTG folds

i) We have the worst absolute position because we sit the farthest away from the right side of the BTN.

ii) We have the best relative position because UTG (surprisingly) folds. Now we can act as the last player on the flop after the c-bet of the PFA.

Practice

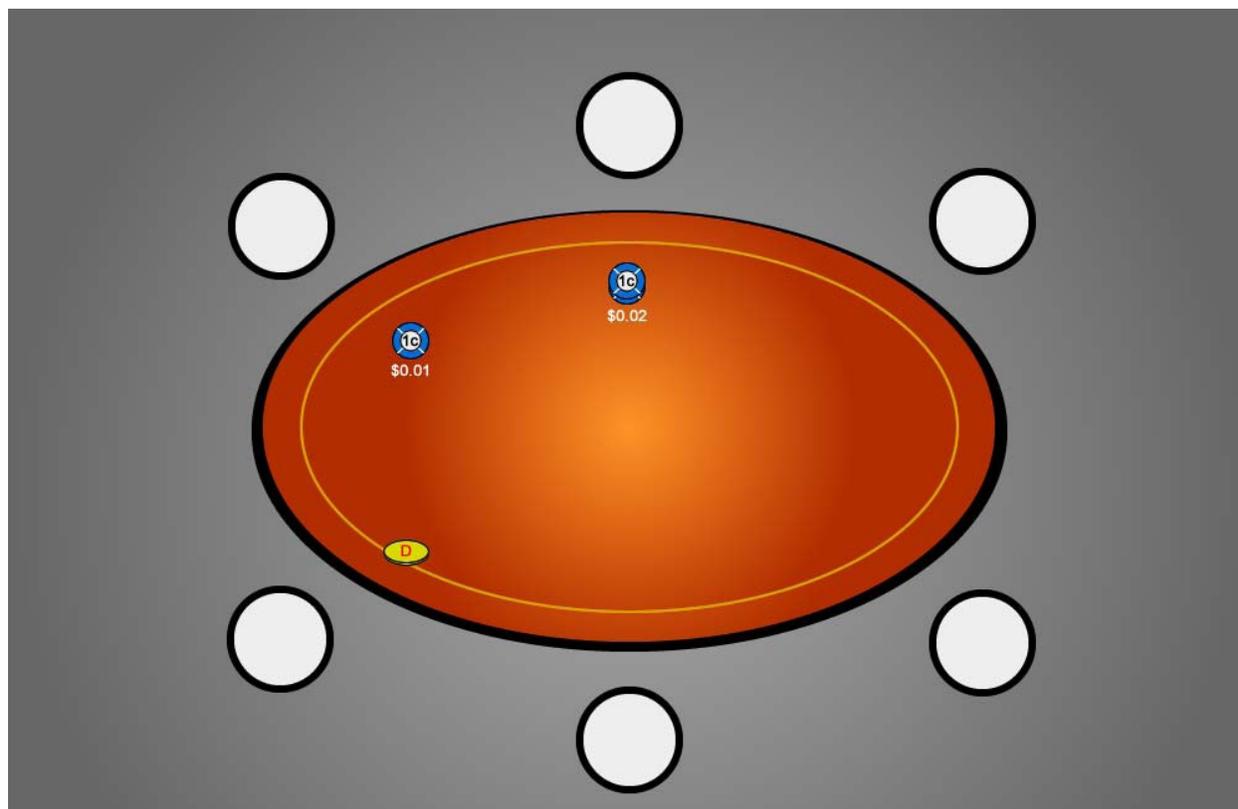


Figure 3: A short-handed PLO table

For the following practice examples take a look at the figure above. Draw a similar figure on a sheet of paper.

If you haven't already done so, write down the names of every position (relative to the Dealer Button) until you know them instinctively.

Now play through different scenarios: First imagine you are sitting in the BB. Against the raises from which positions will you play IP post-flop and against which will you be OOP (assuming HU)? Then move on to the SB and so on.

Imagine yourself sitting in the CO. Now ask yourself in what relative position you would be by calling if UTG raises, then MP 3-bets. Play through all different scenarios you can think of (callers behind you, 3-bettor behind you...). Again, vary your own position. Add any other notes to your diagram (e.g., tactical advantages and disadvantages) that you may also find useful.

Summary

- ♠ Positions on a SH Table
- ♠ Positional Advantages
- ♠ Absolute Position Vs. Relative Position
- ♠ Bottom Line: Because position is so important in PLO you must automatically be able to determine your absolute and relative position in a hand.

Day Two

Obtaining Your First Edges: Starting Hands

Based on my seven years experience, and over one million hands of both live and online play, I have accumulated detailed and comprehensive statistics. This mother lode of data has enabled me to identify winning and losing trends for each starting hand.

Today, you will learn which SH PLO hands are profitable, which hands are speculative, which hands are risky and which hands are simply unplayable. By knowing when to enter a pot, based on your position and the four cards dealt, you increase your chances of maximizing profit and minimizing losses. To wrap up the day, I will also introduce you to tracking software, which enables you to track your own progress and acquire actionable intelligence about your opponents in the future.

Introduction

Before looking at exact playable hand ranges from different positions, we should first take a look at the different categories of playable hands from a general perspective.

Premium Hands

These types of hands are premium because they feature strongly in either of the following categories, while also doing well in the other one.

- ♠ Having an equity advantage²⁵ over our opponents' range. These hands include strong single-suited Aces (e.g., A♥-A♠-8♦-7♠) and big Broadway double-pairs (e.g., K♥-K♣-Q♦-Q♣). These hands have high “hot-and-cold equity”²⁶.
- ♠ Having the potential to connect with a large variety of flops, which they can hit strongly, making hands such as nut straights, high flushes, and even devastating straight flushes (e.g. Q♥-J♦-10♦-9♥). These hands offer excellent playability.

High Pairs (Single Suited)

High pairs are hands like A♥-A♦-x♥-x♠²⁷ down to Q-Q-x-xxs²⁸ (with one of your queens as part of the suited combination). High pairs (single-suited) can either hit top set²⁹ or have good flush draw potential. These two domination components make high pairs (single-suited) potentially very profitable, especially for MW pots.

Rundowns

Hands like 8-7-6-5 are called rundowns. These hands are very well defined when the flop hits, but can easily be dominated against multiple opponents. Rundowns can have gaps. An example for a bottom-gap rundown would be 9-8-7-5, whereas a top-gap rundown would be 9-7-6-5. Rundowns like this have the potential to hit “wraps,” which are strong straight draws that don’t exist in Hold’em (because you need at least three hole cards to have a wrap in the first place). They are called wraps, because your hole cards wrap at least two cards from the board. An example of a great wrap would be K-J-10-8 on a board like Q-9-7, which would give you any 6, 8, 10, J, or K to hit a straight. Wraps are a fairly complex topic, which I will discuss in greater detail later. For now, you should remember the lower the gap, the better the rundown, because they usually have more nut outs³⁰ (e.g., compare the nut outs of 9-8-7-5, on the flop K-6-4, with A-5-3-2). Unlike high pairs, rundowns play best in HU pots and on tight tables. This is because rundowns (especially double-suited rundowns) can hit a lot of different flops; however, the probability of getting dominated by someone else’s bigger straight or higher flush increases when more players are in the pot.

Double Pairs

The last hand type is double pairs. They are very easy to recognize. Any hand containing two pairs (and, no, not two pairs of Aces) is a “double pair.” The strength of most double pairs isn’t always easy to determine, which makes them more suitable for intermediate and advanced players. We will learn more details about these holdings on Day 17.

All other playable hands in PLO, like “double-suited trash” (e.g. K-8-5-2ds) are weaker versions of the hands given above. You are now done with the theory of playable hands. The key lesson is that it’s very important to get a basic understanding of which exact hand ranges are playable in PLO from different positions.

Starting Hands Chart

The first thing we need is a Starting Hands Chart (SHC). A SHC will help you to define the hands you can play from different positions after being dealt your 4 cards. During my learning process and progression up in stakes, I developed and refined my own proprietary SHC. I strongly recommend you either review this SHC in Appendix 2 (the link is given in the introduction). As I said, my SHC and all other content in this book are proprietary; you won't find this information anywhere else in the world or in hyperspace. So the content is exclusively available for you as the reader of the book. That said, it is not your right to make it available to your freeloading friends!

Defending Charts

As the SHC only tells you which hands to open-raise, we also need to know what we have to do when there are already players before us that have entered the pot. This is where the defending charts come into play. You should check them out as well, either in Appendix 2 (the link is given in the introduction).

Tracking Software

We don't only want to define the ranges we play. We also want to analyze how our opponents approach the game too. I most strongly recommend that you also invest in hand tracking software. This enables you to optimize your play against different types of players, track your own winnings, analyze played hands, discuss them with friends and/or online poker communities, and to identify your own leaks. The most popular and effective tracking programs, which I recommend, are:

- ♠ Hold'em Manager 2 (HM2: <http://www.holdemmanager.com>) ♠ Poker Tracker 4 (PT4: <http://www.pokertracker.com>)

If you don't want to spend money yet, both products offer you a 30-day free trial version (which, conveniently, exactly covers the time period of this book).

Exercises

This exercise will help you to get a better feeling for starting hand ranges in PLO and is the first and foremost thing you must learn. This following preparation is mandatory; otherwise, you will be overwhelmed during play.

1) Print and study the Starting Hands Chart and the Defending Charts. Then study them again. Think to yourself why a certain hand is ranked above other hands, based on the theory presented in today's lesson. Also recognize how the positional differences influence our hand selection.

2) Get yourself a standard deck of cards, shuffle them, then place the top 4 cards face up – this is your starting hand (alternatively you can also use the Playing Card Shuffler from <http://www.random.org/playing-cards>). Next, refer to your Starting Hands Chart and find out from which position(s) you can play it. Repeat this, until you are satisfied that you can cross-reference your starting hand to the provided SHC in a timely fashion.

3) Apply Exercise 2 to both of the defending charts as well.

a) Deal yourself a starting hand.

b) Check whether you can call/3-bet/squeeze/iso-raise³¹ this hand IP. Also check if you would have to fold this hand to a 3-bet.

c) Repeat b) also for OOP.

You are encouraged to repeat these three steps until you are satisfied that you can make these assessments quickly and correctly.

4) At some point, you should be able to look at your starting hand and correctly answer from which position(s) you can open-raise it, without referring to the SHC. You should also be able to judge whether this hand qualifies for being defended from either IP or OOP.

5) If you've never used a Heads-Up-Display (HUD) before, the first step is to install tracking software, which enables you to track your progress.

Solutions

When you achieve a 90% success rate for playable hands per Step 4 of the exercise, consider that you have successfully completed the exercise. With your mastery of starting hand selection and the ability to track hands, you are now ready to start your adventure playing Pot Limit Omaha.

Practice

1) If you have never played PLO on online tables before, or just want to double-check whether you considered the important preparation for your first session, make sure to check out Appendix 3 (the link is given in the introduction).

2) Now get online and “sit” yourself on a micro-stakes PLO table. If you don’t feel ready to play for real money yet, feel free to practice on a play chip table for the first week.

3) Start your tracking software to check if everything works well. When you see a HUD next to the player names, consider yourself successful. Feel free to keep an eye on the statistics and how they vary from player to player. Details will be discussed in the next section.

4) Each time you get dealt a hand, think about the position you can open-raise this hand *without* referring to the SHC. Take your time. If your time bank runs out, simply close the table and open it back up. This action will automatically refresh your time bank. Be sure to write down each hand you played (or simply review them by using the replay function of your tracking software after your session). Compare your opening hands with the SHC. Did you make the correct move?

Summary

- ♠ Playable Hand Types
- ♠ Using Hand Charts
- ♠ Setting up Your Tracking Software

Day Three

Knowing Your Opponents

Now that you have mastered the material from Day 2, you are able to judge which hands are playable pre-flop based on your position from the button at a 6-handed table. However, these starting hand guidelines are fairly static when compared to the overall complexity of the game.

The topic for today is proper hand selection against specific opponents. So this time, our focus is on the table dynamics. We will analyze the players whom we sit with at the tables and then take a look at which adaptations to employ in these situations. To be able to do so, understanding the statistics our HUD produces is mandatory. If you don't know what "VPIP, PFR, AF or WTSD" mean, I recommend that you check out Appendix 4 (the link is given in the introduction) and try to remember these stats and their corresponding meaning presented there.

Introduction

In order to being able to categorize our opponents, we need to place all types of poker players into two broad classes. Let's start off with the bad player, affectionately known as the "fish". This type of player is the reason why we play poker. They are the ones who become our leading source of income in the long run. A good majority of the fish lose so much money so quickly that they quit poker within days or weeks, never to be seen at the tables again. Fortunately, there are some fish who stick around long enough where we can define what style of fundamentally poor play they have. All fish have one big thing in common, which can be considered their trademark: they all have significantly high VPIPs (typically 40%+). Not only do you need to know if you've hooked a fish, it's equally important to know what variety of "fish" you have. I prefer to use the following differentiations when it comes to building sub-categories of fish:

- ♠ Fish-Aggressive
- ♠ Fish-Passive
- ♠ Maniac

The PFR and 3-Bet stats are what mainly define the fish (the post-flop aggression stat also factors in classifying the fish, but for general purposes, the PFR and 3-Bet stats suffice). The higher the PFR and 3-Bet numbers, the easier it is to make the distinction between Fish-Aggressive (and Maniac) and Fish-Passive. The latter is the type of fish that you will face more commonly (and want to face more commonly). High VPIP and low PFR together with low aggression frequencies and high WTSD is what categorizes Fish-Passive players, meaning they will bring a lot of their hands to showdown. That said, the VPIP doesn't normally differ that much between aggressive and passive fish – both typically have a very high VPIP.

The last and most interesting variety of fish is the *Maniac*. This type of player is characterized by an insane level of hyper-aggression – both pre-flop and post-flop – with literally any four cards. Believe me, you won't have any trouble spotting a maniac when he sits at your table. Unlike other fish, the Maniac can actually be a troublesome player, as long as you and your tablemates allow him to steamroll you. Once you realize there's a Maniac raising and 3-betting *every*

hand, you need to make the correct adjustments against him.

The rest of the players are considered better players (relative to fish) whom we call the “regulars” (or “regs”). We refer to them this way because these are the guys who play their respective stakes regularly. Regs vary in ability; but for the most part, separating them from their money will be a tougher task. Like fish, there are also several varieties of regulars:

- ♠ Ultra-Tight (Nit)
- ♠ Tight-Aggressive (TAG)
- ♠ Loose-Aggressive (LAG)

We can usually identify the different types of regulars by their rather smaller gap between VPIP and PFR (about 10%), which indicates that they rarely take passive approaches pre-flop. That’s why they are called TAGs and LAGs. Again, we can classify regs and their skill level not only from their VPIP, PFR and 3-Bet stats we used with the fish, but also from their steal³², fold to steal, and check-raise³³ tendencies.

TAGs are those guys who typically don’t play a VPIP higher than 25%. That’s usually the difference between a TAG and a LAG. The garden variety TAG mostly has 3-Bet stats of <6% and Fold to Steal stats of >75%, whereas LAGs usually tend to have higher 3-Bet stats and lower Fold to Steal stats. Although the leaks are varied and not as perceptible as with fish, one fairly common trait with TAGs is that they play a very methodical, “ABC”-like style. This means they are systematic (i.e., “by the book”) players, who can’t adapt soon enough – or even at all – when you are exploiting them (e.g. by relentlessly pressuring them from IP). That’s because they are reluctant to deviate from their set strategy, which they feel is their comfort zone.

Like the maniac, the LAG is a very troublesome opponent. They can really make our lives miserable by 3-betting all the time IP and check-raising a lot OTF. The LAG is much more dangerous than the maniac, because their raises and re-raises are based on better fundamental knowledge of PLO. The good news is that in micro-and small-stakes games, most players who see themselves as LAGs are fishier than regulars. This is because their game plan of over-aggression lacks both the expertise and sophistication to justify why they play like they do. So it’s often the case that they won’t recognize when you tighten up against them and they still try to push you off your hand, even though now you are holding a monster.

Nits are those players who barely play any hands, but when they do – watch out. Because their range is so tight and strong, when they come in with a raise,

they often have the goods. VPIPs of <15% as well as low 3-Bet and very high Fold to Steal stats are their trademarks.

These are some basic indicators of how you can categorize the players at your table. You can use this information to find the “live ones” at the table, as well as the tough opponents against which you should proceed with caution.

Exercises

- 1) Which adjustments can we make against the 6 different player types?
- 2) How does our hand selection differ between tight (reg-heavy) and loose (fish-heavy) tables?
- 3) Imagine you join the following two tables illustrated below (*Figure 4* and *Figure 5*):
 - 3a) Which player types are sitting at these tables?
 - 3b) Can you widen up your stealing range from the CO or the BTN against those (potential) players behind you? *Why/Why not?*
 - 3c) Which types of hands can you play profitably at these tables? Which types of hands are not profitable?

Table 1



Figure 4: The first scenario for question 3

Table 2



Figure 5: The second scenario for question 3

Solutions

1) Which adjustments can we make against the 6 player types?

Aggressive Fish

Against these types of players, we should usually be careful with thin value bets OTF. It's often better to check behind flops with our vulnerable hands and to also bring our weaker hands to showdown. It's often good to take passive lines and let them bluff with their weak ranges.

Passive Fish

Passive Fish are also known as “calling stations;”³⁴ they will stick around all the way to showdown with an inferior hand. The best adaption against Passive Fish is to play a lot of bet-first post-flop. However, you may want to consider folding if you lead in with a bet and they fire back with a big raise. This is because getting a raise from these players usually means that we are crushed, since they only raise when they have the nuts and rarely bluff. Occasionally you will be faced with min-raises post-flop when playing against Passive Fish. Take notes on what this means for the respective player; usually it's either a very strong made hand or draw.

Maniac

Against Maniacs, we know that we most likely get 3-bet when we raise pre-flop. That's why we should only raise hands which are capable of continuing against a 3-bet. We can also adapt to Maniacs by limp-calling hands which have a high nut potential, but can't continue against 3-bets. Hands that meet this criterion are QQ-x-xss and/or A-B-x-2. Also, we can widen our 4-betting range substantially. If you do enter the pot HU with the Maniac and catch some piece of a hand, just check-call it down to the river. More often than not, you have him beat.

TAG

The adaption against regulars is more difficult than against weaker fish. That's because they have a better understanding of the game and have different, less exploitable, leaks. A software tracking tool with a decent sample size helps to identify leaks of regulars. Common ABC leaks are that they fold too much when OOP, either against 3-bets or the following c-bet, even if you already 3-bet 20%

against them. Another leak would be that they fold too much against your BTN steals; you might even get away with stealing 100% against these players. Finally, a lot of them are check-folding way too often when they decline to make their customary c-bet, after raising pre-flop.

LAG

The best adaption against legitimate LAGs is to tighten up. Still, this switching of gears can be problematic. Imagine we have a competent LAG sitting directly to the left of us. We are now forced to fold a lot of our CO open-raising range because of the high likelihood that we will get 3-bet by the LAG when he is on the BTN. This hurts our profit since the CO is the second best position in poker and we are giving up a lot of our potential winnings by tightening up in the CO (especially when there are two live fish flopping around in the blinds). Since equities run so close in PLO, widening our 4-betting range isn't too appealing against a reasonable 3-betting range of a competent LAG. By doing so most of the time we are only increasing variance in an already high variance game. In this case, the best strategy against a strong LAG with position on you might just be to exit the table and try your skill somewhere else!

Nit

The best adaption against players who barely play hands is to open raise and steal a lot against them. But proceed with exceptional caution when the sleeping "rock" suddenly wakes up and fires back at you.

2) How does our hand selection differ between Tight/Aggressive (regular-heavy) and Loose/Passive (fish-heavy) tables?

Tight/Aggressive Table

We can play lower rundowns more often, due to their good playability. That means we can call more 3-bets with the possibility of hitting a wide range of flops. On these tables, there is less risk of getting dominated, due to the fact that there will be fewer MW pots (regs tend to have low VPIPs).

Loose/Passive Table

The value of high pair/nut suit hands increases a lot, since these hands shine in MW pots due to their excellent domination potential. However, they can't stand excessive pressure pre-flop. Therefore, they are ideal for loose-passive tables, where the danger of 3-bets is very low (Passive Fish rarely 3-bet).

3) Imagine you join the two tables that follow

Table 1

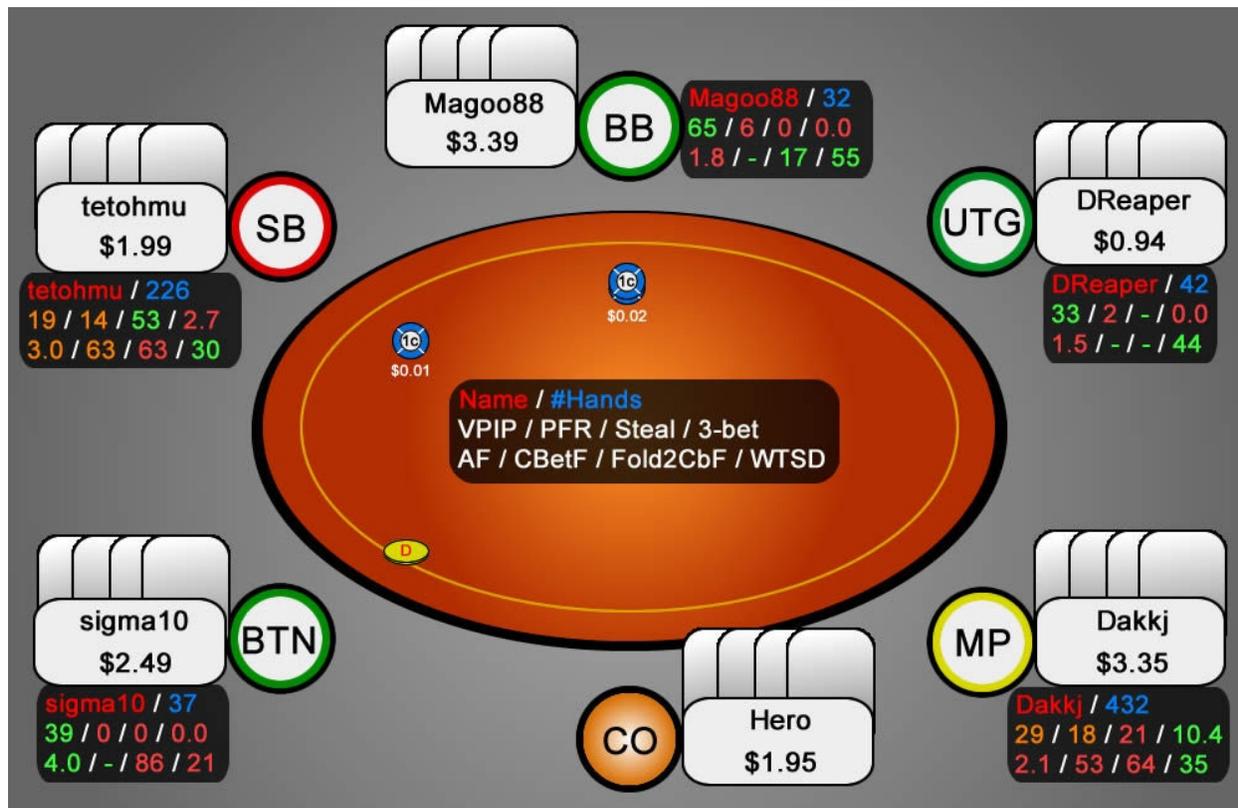


Figure 6: Marking the players of [table 1](#)

3a) Which player types sit on these tables?

On this table, we have 3 *Passive Fish* (sigma10, Magoo88, and DReaper). As you can see, all of them have very high VPIP stats. Also, this trio of “fishees” all possess very low PFR and 3-bet stats, which is what distinguishes them from Aggressive Fish. This table also has 1 *TAG* (tetohmu). As you can see, the difference between VPIP and PFR is very low because when these players do play hands, they play them aggressively. We can also judge that tetohmu is clearly not a LAG since his VPIP is well below 25% and also his 3-Bet value is only 2.7%. The *LAGish* player in yellow, “Dakkj,” sits to the right of us in the MP seat. His VPIP is above 25%; but still, the gap between VPIP and PFR remains small, compared to the Passive Fish. What also distinguishes this player from the rest of the field is the high 3-Bet value of 10.4%.

3b) Can you widen up your stealing range from the CO or the BTN against those (potential) players behind you? Why/Why not?

Hero in CO: The BTN (sigma10) isn't ideal because his high VPIP of 39% indicates he would call a lot IP. The TAG in the SB (tetohmu) would be fine because he is tight; however, the BB (Magoo88) isn't the best candidate for looser steals, due to his high VPIP and low Fold2CbF. All things considered, I wouldn't suggest stealing any more than as we would with our typical CO opening range.

Hero on BTN: The SB (sigma10) would call a lot; but looking at his Fold2CbF, he folded 86% of the time (which at least means 6 out of 7 times). This works to our advantage. The BB (tetohmu) is tight and folds often. So in this case, it's a good situation to steal with a higher frequency.

3c) Which types of hands can you play profitably at these tables? Which hands are not profitable?

Because 3-Bet values are generally low, our high pair hands have more value. As you might remember, single-suited high pairs have good domination potential when they hit their big sets and flushes. On this table, small rundowns (i.e., 6-5-4-3, 8-7-5-4) would lose value because VPIPs are so high. This results in a lot of MW pots where the probability of hitting potentially catastrophic second-best straights and flushes increases.

Table 2



Figure 7: Marking the players of [table 2](#)

3a) Which player types sit at these tables?

This time we have a mixed field of players. Notice that there are only five players on this table, so there is no UTG seat. We already know how to define the TAG (Mobixx), Passive Fish (chris07) and the LAG (prexu). We also have identified a Maniac (Pwn3r1). We can easily recognize this player by his extremely high VPIP, PFR and 3-Bet stats.

3b) Can you widen up your stealing range from the CO or the BTN against these (potential) players behind you? Why/Why not?

Hero in CO: Hero in CO: Avoid stealing! Even though BTN is tight, SB (Pwn3r1) is a Maniac and BB (chris07) is also a calling station. So your chances of getting away with a steal, without going to the flop, are almost nil.

Hero on BTN: Steal everything with playability or high-card value. We most likely may have to play a rather big pot, in the event we raise and do get 3-bet or called.

3c) Which types of hands can you play profitably at these tables? Which hands are not?

Our whole game should be built around the Maniac, since this is the player who will dictate the action. Adaptions against the Maniac can be to limp our range that we normally fold to 3-bets (e.g., K-J-7-6ss, A-8-8-xss). We also should widen our 4-bet range by 4-betting our high-card hands (e.g., A-B-B-xss) and big pairs (e.g., K-K-x-xss).

Hopefully, you have now learned a lot about the player types you will meet at the tables and how you should be adapting to them.

Practice

1) Join a table of your limit and systematically categorize your opponents as soon as you get a meaningful sample size of their hands. By understanding the stats we've learned today, you will see that you can do a quick and dirty classification fairly quickly.

2) Use a color-coding scheme, using either your tracking software or the poker software (as an additional indicator of the player type). Use the colors which you associate with the respective player types.

Summary

- ♠ Basic Statistics of Your HUD
- ♠ Recognizing Different Types of Players Using Your HUD
- ♠ Finding the Right Adaptions Against those Player Types

Day Four

Pre-Flop in Five Steps

We have already learned a good amount about strategy and tactics during the first few days of our PLO boot camp. It's now time to integrate all we have learnt and develop a basic approach that we can apply to every hand pre-flop. Today, we will discuss the five most important steps you must consider with each hand before making a pre-flop decision.

Introduction

Pre-Flop is a very complex phase in a PLO hand. First of all, there are so many different starting hand combinations in Omaha – 16,432 to be exact! In comparison, Texas Hold'em only has 169 distinct hand combinations. In addition to starting hand selection, there are a number of other factors which will also influence our decision to call/check, raise or fold our hand. We have already considered most of them in our previous lessons. Today, it's time to arrange them into a logical order.

The biggest danger for a lot of players in their approach to pre-flop, is to play in a so-called "auto-pilot mode." This is a state where people just play their hands in a vacuum, without taking any consideration of what is happening at the table, or which players are sitting with them. It's a very static and unaware way of playing the game. You get especially prone to playing in auto-pilot mode when playing multiple tables at once. That's because there are a lot of decisions to be taken within a short amount of time. Many players make the huge mistake of thinking their win rate will proportionally increase with the number of tables they play. However, that's not true for most players and is definitely not true for inexperienced players. Before being able to play profitably while multi-tabling, it's essential to consolidate the knowledge you're obtaining by consistently repeating the things you learn, both in theory and in practice, on the tables. Therefore, I strongly recommend you concentrate only on playing a single table while you are in the learning process, otherwise your play will neglect too many important concepts. Only advanced players should consider adding more tables.

Exercise

Based on your current PLO experience, what you have read so far in this book, and your practice sessions from the previous days, list what you think are the five most important points you should consider pre-flop *before* making a decision. Once you decide on your five points, arrange them in order – the most important first. Also try to justify your points in as detailed a way as possible.

Solutions

Pre-Flop, there are several things you should be observing.

1) What happened before us?

The first thing you need to do is analyze the action that happens *before* you need to make a decision. Although this sounds easy, there are several considerations.

- ♠ Have there been one or more limpers before us?
- ♠ Did someone raise? Was there a re-raise (3-bet) by another player?
- ♠ How much did this player raise/3-bet?
- ♠ Did one of the players who joined the pot have a short stack?
- ♠ Are we more than 200 big blinds (bb) deep?

All these considerations are consolidated into Step 1 of your pre-flop evaluation.

2) What is our (relative) position?

This point is so important in PLO that I can't emphasize it enough. We already discussed this topic in-depth on Day 1 so I won't go into it in detail again. Remember to consider not only your absolute position, but also your relative position when there are already two or more players in the pot.

3) What stack sizes are sitting to the left of us?

Analogous to the Step 1 process, we now want to focus on the players sitting to the left. There is always a level of uncertainty as to what the players to our left are going to do. But the one thing you do know about these players, who have yet to act, are their stack sizes. Be especially careful when there are short stacks to the left, since they are likely to shove their remaining chips into the middle at any moment.

4) What is the most likely outcome after our respective action?

After you consider the stack sizes of the players waiting to act, you should now assess what will happen after you act, with a call or raise.

- ♠ Are there potential squeezers out there?
- ♠ Will the pot become MW because there are players with a high VPIP behind us? If yes, what will be our relative position?
- ♠ Do we have fold equity if we 3-bet our hand?
- ♠ Can we steal the blinds with an RFI?

5) Does my actual hand play a role in my decision?

I bet you might be asking why *your* number 1 point has not been mentioned, until now. But when you give it some thought, you might understand why your actual hand is only Step 5 on our pre-flop evaluation list.

To explain this concept further, imagine a situation where:

- 1) It is folded to you.
- 2) You sit on the BTN.
- 3) To the left of you (in the blinds) are two very tight, full-stacked, players. They have previously played so few hands that there are cobwebs on their chips.

Based on Items 1 through 3, there is a highly likely outcome that if we raise, we will pick up the blinds. In this situation, we already know our play without even having to look at our hand.

Practice

1) Type out and print (or write down onto a sheet of paper) the 5 points from the step-by-step plan. Like you did during Day 2, sit yourself at a micro-stakes PLO table. Now every time you are dealt a hand, run through your step-by-step pre-flop plan. Use the time before it is your turn to act to consider each point. Even if you elect to fold the hand, continue to apply the 5-step pre-flop evaluation anyway, so that you will know what to do when you get a good hand and/or good position. Take (mental) notes during your session. Try to describe every point in as much detail as possible.

2) After your session, try to find a way to recognize the 5 steps for the future. You might use mnemonics like:

- ♠ **“Before”** (Action Before)
- ♠ **“Peeing Outside”** (Position)
- ♠ **“Stack Up”** (Stack Sizes)
- ♠ **“After Effects”** (Action After) “of”
- ♠ **“Handsomely Strong Winds”** (My Hand Strength).

Summary

- ♠ Avoiding Playing on Auto-Pilot
- ♠ 5 Steps to Consider in Every Hand

Day Five

Basic Post-Flop Play

We are in the middle of our first week learning PLO. Since we want to prepare on how to play a hand from start to finish, it's a good time to talk about the most important (and logical) topic after talking about pre-flop play. That would be the basics of post-flop play. This lesson is all about strategy for playing OTF.

Introduction

You could compare this topic to the step-by-step pre-flop plan, to the extent that it can be explained in terms of fundamental components. Unfortunately, in contradiction to pre-flop play, it's much more difficult to describe what you should do on the flop in just a few steps. With the three community cards dealt OTF, there are exponentially more variables in play and permutations to consider. One of the biggest variables are the cards that make up the flop. It becomes mandatory for you to think about different ways the flop can help/hurt your hand and the hands of your opponents. In addition, different boards influence things like your FE. With more variables to consider, there also comes more data that has to be evaluated. Therefore, a five-step plan isn't applicable for OTF play. After all, play after the flop is what truly separates great poker players from the rest. The concepts of assigning hand ranges before the flop and utilizing hand reading skills, based on your opponents' moves after the flop, becomes crucial. Everyone who is still in the pot has either called or raised pre-flop, so we at least have some information about their hand range considering the player type.

Not everything OTF is entirely separate from pre-flop considerations. We still have to reconsider some of those points we already discussed pre-flop, because now that we are OTF we have precise information of everything that happened pre-flop. At this point, I want you to go through the exercise and I will explain each detail in the solution part. If you work hard and think about what you've learned already, then I'm sure you will find a lot of good points on your own.

Exercise

Find the most important points you should think about OTF before making a decision. Arrange them in order (from most to least important), so that you can apply them to every hand. Try to justify your points.

Solution

Unlike pre-flop, OTF it's more difficult to find an exact order because there are points which diverge into additional points. Also a point that was critical in one hand may not matter at all in the next. Flops in Omaha are like snowflakes – no two are alike! Therefore, using a rigid order of points to consider on the flop isn't as workable as it was pre-flop. Despite all that, I still want to show you my generic approach of what I would personally consider a sensible order.

1) What has happened so far?

We have to know who the pre-flop-aggressor (PFA) is and everything else that transpired before the flop. If we are IP, then we already have the additional information of what the players before us actually did OTF. For example, it can be important to know that the UTG PFA checks and another player checks to us as well.

2) Number of players in the pot

The number of players remaining in the pot influences our decision. Usually the more players there are, the less fold equity we have with a bet. The number of players also has a significant impact on what our best play is. When we are HU OTF, with the board being 7♥-7♣-2♦, then a bluff check-raise (x/r) is often going to be successful because it's a very good board for us to bluff when our opponent opts to c-bet. That is because the chances of him hitting something on this board are very slim. However, if we are 5-way, chances are that someone has the 7; so here, a bluff x/r would be an unprofitable play.

3) Stack-to-Pot-Ratio (SPR)

The SPR describes the ratio of the player's remaining stack in relation to the pot. When talking about SPRs, we always have to consider the effective stack size (ES), which is the stack size of the player still in the pot with the least amount of chips behind. If the stack size of this player is so small, that it becomes irrelevant (with respect to FE), then you should consider the next smallest stack.

SPR is a topic which is going to be important in future lessons (it even has its own dedicated lesson). We already discussed SPR yesterday when considering the stack sizes of our opponents pre-flop. Before any betting round, especially the flop, get used to checking the SPR when making any decision. It is crucial OTF, since it determines:

- ♠ How much we need to bet to get our money in on the turn/river (Day 17).
- ♠ How much equity, in the event of an all-in from someone else, do we need to call (Day 18).
- ♠ What implied odds we are getting (Day 25).
- ♠ How much fold equity we have (a quick rule-of-thumb is, the bigger the SPR, the more fold equity we have).
- ♠ How much room is there for moves (e.g., bluffs) and floats on later streets.
- ♠ As you can see, SPR will be an important consideration to us from now on.

4) Board

When we talk about the board, there are 22,100 possible flop combinations. That said, we can basically categorize all these combinations into four board types:

♠ Wet Board (5♥-8♥-10♣) ♠ Semi-wet Board (5♥-7♥-Q♠) ♠ Dry Board (K♥-7♠-3♦) ♠ Lockdown Board (4♥-5♠-8♦, A♥-A♠-K♦, 2♥-7♥-K♥)

Wet boards are those where the current nuts will most likely change on the next street. In the example above, any 4, 5, 6, 7, 8, 9, J, Q, and every *heart*, 28 cards in total, complete either a straight or a flush. Any of those turn cards would change the best hand from the current absolute nuts of this particular flop (which is a set of Tens). The opposite of the wet board is the lockdown board, where it is unlikely that any future card will change the current nuts. You can make the generalization that the dryer the board is, the more FE you will have.

Steps 7 and 8 will give us additional insight on how we can work with these boards. We will also learn more advanced considerations regarding this topic during Week 3.

5) Position

Do we have absolute position, where we are last to act? If not, then what relative position do we have on the PFA in case of a MW pot?

6) Type of players/stats

Again, we should do a quick categorization of the player(s) we are confronted with OTF (based on the six player categories from Day 3). If we have played with these opponents at this table or in previous sessions, then we should have this information. If we are still uncertain, then we should consider the tell-tale stats to best make our assessment.

7) Our hand

Again, our own hand is almost an afterthought. Unless you flop the absolute nuts, there are just too many other things to consider besides our actual hand. When you have assessed all other table dynamics after the flop, these are some things to consider regarding our own hand:

- ♠ How well does our hand mesh with the board (in terms of pairing and/or draws)?
- ♠ Which made hands / draws do we block³⁵?
- ♠ Which made hands / draws do we dominate?
- ♠ How easy is our hand to play on the turn (OTT) and on the river (OTR)?
Can we avoid difficult decisions on future streets? How many turn cards will improve our hand?
- ♠ Do we have any backdoor (i.e., runner-runner) draws?

8) Perceived ranges / Equity vs. range

Depending on the player type(s) and the pre-flop actions, we should be able to determine a reasonably accurate hand range of what our opponents could have. The final consideration is to estimate our equity (i.e., chances to win or share the pot) against this perceived range.

As you can see, there are a lot of things to consider – and there are even a couple more things we have not yet gone over in detail. But don't worry – as always, we are going to learn in a step-by-step fashion. Today should give you an overview of those things we need to consider when we see the three cards on the flop. With discipline and practice, these post-flop considerations will become second nature.

Practice

1) Copy the 8 points from this lesson onto a sheet of paper and print it out. Be able to explain these points with the justifications we discussed today. As I mentioned earlier, for the moment, it is not important to know everything by heart. But, you should at least be able to roughly understand the ramifications of each OTF point with respect to the overall hand. We will revisit these in future lessons.

2) When you feel ready, play a session and take notes on what points on post-flop evaluation came into play with each hand. Which ones were effective (in terms of decision making) when dragging in a pot? Which ones did you neglect, or misapply, that contributed in you losing a pot? At the end of your session, look at your marked-up notes and try to focus on the points where you feel confident and those which require more practice.

Summary

- ♠ Factors to Consider OTF
- ♠ Differences and Similarities Between Pre-Flop and Post-Flop

Day Six

The Math: Pot Odds

It's time to learn about the basic concepts of applying math in poker. For the numerically challenged: don't worry, it will be fairly easy.

Introduction

The first topic is pot odds. We are going to learn two methods of calculating pot odds. However, before we start, I need to explain what pot odds actually are. Pot odds are the odds you get for calling compared to the current pot size. When the pot is \$100 and your opponent bets \$25, then you are getting pot odds of 5-to-1 (5:1) for your call, because $125/25$ (size of the pot/your call amount) = 5. In layman's term, for every six times you make this call (assuming no more money is added to the pot), you need to win once (and lose 5 times) to break even. Now let's say instead of betting \$25, the opponent actually bets the pot (\$100). Your pot odds have now been lowered to 2:1, because it will cost you \$100 to make the call ($\$200/\$100 = 2$). In general, the higher the pot odds, the easier it is to call.

Pot odds are useful when deciding whether or not to call when holding a draw. Imagine you have A-x-x-xxs and flop the nut flush draw. The probability of hitting your draw on the turn is 20%³⁶. In other words, your equity is 20%. Now you have "direct odds" of 4:1, which means that you miss your flush draw on the turn 4 times, and make your flush once. Overall, you will hit your draw 1 out of 5 times on the turn, which is equal to 20%.

You will use both pot odds and direct (i.e., drawing) odds to aid in your decision to call or fold at the flop. When your pot odds are greater than or equal to your drawing odds, then your call will yield a positive expected value (+EV), which means that your call will be statistically profitable in the long run. Using the example above, if the pot odds for calling \$25 in a \$125 pot are 5:1, and the drawing odds to a flush are 4:1, we are definitely making a correct call. In our case we would have to hit our draw 1 out of 6 times, which is equal to 16.6% equity needed, and we have 20% equity.

An alternative method is to directly calculate our required equity, by either:

- ♠ Adding 1 to the pot odds and calculate the reciprocal of it: e.g., ($\$100$ (pre-flop pot) + $\$25$ (villain's bet)) $\$25$ (hero call amount) = $5:1 + 1 = 6$
 $\Rightarrow 1/6 = 16.6\%$

OR

- ♠ Divide [our call-size (or raise-size)] by [(the amount in the pot) + (our call-size (or raise-size))]: e.g., \$25 (the price we need to call) [$\$100$ (the size of the pot) + \$25 (bet of villain) + \$25 (the amount we have to call)] = $25/150 = 16.6\%$

Hand vs. Hand Equity Chart

It's now time to introduce you to drawing equities, based on the chance to catch cards that make a winning hand vs. what you believe is the current strongest hand on the flop. Unlike Hold'em, almost every flop is going to yield a made hand for someone. On this chart, I have listed the most likely hand vs. hand equity scenarios. This way, you can look up (or commit to memory) what your equity with a certain hand is against another, either OTF (and getting two cards to come for making your draw) or OTT (getting one card to come). You can download it (the link is given in the introduction).

These are the basic concepts of the mathematics in poker that determine when it is correct to call or not. To practice this concept, let's try some exercises.

Exercises

- 1) What are your pot odds and needed equity for each of these calls?
- 2) Can Hero call given his draw?

a) Pot on the turn: \$15. Villain bets \$7.50

Hero has a flush draw.

Equity Chart practice: Could Hero call with a set against a straight?

b) Pot on the flop: \$38. Villain bets \$38

Hero has a 16 card wrap draw.

Equity Chart practice: Could Hero call with a set + flush draw against a straight?

c) Pot on the flop: \$100. Villain bets \$75

Hero has a double gutshot.

Equity Chart practice: Could Hero call with a flush draw against top two pair if Villain was all-in with his bet?

Solutions

a) Pot on the turn: \$15. Villain bets \$7.50

1) What are your pot odds and needed equity for each of these calls?

i) $\$7.50$ for $\$22.50 = 3:1 =$ “1 out of 4 times” $= 1/4 = 25\%$

ii) $\$7.50$ (our call size) / $((\$15$ (pot on the turn) $+\$7.50$ (Villain’s bet)) $+\$7.50$ (our call size)) $= 25\%$

2) Hero has a flush draw. Can Hero call?

Considering our odds of hitting a flush are $9/44 \sim 20\%$ over 1 street, in this instance, we do not have the correct odds to call. Hero needs 25% equity or better to call the bet. Had Villain only bet \$5, our equity would be $5 / ((15+5)+5) = 20\%$ and the call would be correct.

Equity Chart practice: Could Hero call with a set against a straight?

According to our Hand vs. Hand Equity Chart we have exactly 25% equity with a set against a potential straight with one more card to come. Since our pot odds are 3:1, which is equal to 25% needed equity, we could call in this spot.

b) Pot on the flop: \$38. Villain bets \$38

1) What are your pot odds and required equity for each of these calls?

i) \$38 for \$76 = 2:1 = “1 out of 3 times” = $1/3 = 33\%$

ii) $\$38 / ((\$38+\$38)+\$38) = 33\%$

2) Hero has a 16 card wrap draw. Can Hero call?

Considering our equity with a 16 card wrap draw, which is $16/45 \geq 35\%$ from the flop to the turn, Hero can call his hand.

Equity Chart practice: Could Hero call with a set + flush draw against a straight?

When we take a look at our chart we see that a set + flush draw has 40% equity, even with only one more card to come. This is way more than our needed equity of 33% and therefore it would be correct to call here.

c) Pot on the flop: \$100. Villain bets \$75

1) What are your pot odds and needed equity for each of these calls?

i) \$75 for \$175 = 2.33:1 = “1 out of 3.33 times” = $1/3.33 = 30\%$

ii) $\$75 / ((\$75+\$100)+\$75) = 30\%$

2) Hero has a double gutshot. Can Hero call?

As we know, a double gutshot gives you 8 outs. From flop to turn we calculate our equity: $8/45$, which is about 18%. Hero needs 30% equity and therefore has to fold to the bet. (*Note: To determine our drawing odds based on our outs we have to now subtract 1 from our reciprocal: $45/8 \sim 5.5(-1) = 4.5:1$, which is greater than our pot odds, and therefore we need to fold.*)

Equity Chart practice: Could Hero call with a flush draw against top two pair if Villain was all-in with his bet?

Considering our equity chart, a flush draw has equity of 39% against top two pair. Since this time Villain is all-in with his bet, we can use the “Flop” column of the chart, because anytime we call this bet we will see the turn and the river card without having to invest any additional money. As Hero only needs 30% equity he can call the all-in.

I admit this was a lot of math. I hope you still had some fun. You should now have a basic understanding of the concepts “pot odds” and “drawing odds.” You should also be able to calculate them in simple situations like the ones above. You should also know what “equity” means and how we can calculate equity related to our pot odds. If you are still unsure about the topic, I would recommend you read over the theory part and try the exercises again.

Practice

1) If you didn't print out today's hand vs. hand equity chart yet, then do so now. If you want to work without the chart, at least make sure you can remember the most important hand vs. hand equities, in order to judge your equity against the obvious hand that Villain represents in a certain situation.

2) When you are ready, sit at the tables and try to calculate your pot odds and needed equity each time you face a c-bet. After your session, review your hand history and recheck your calculations, to see if you made correct calls and folds based on your pot odds.

Summary

- ♠ Pot Odds vs. Direct Odds
- ♠ Calculating Pot Odds and Needed Equity
- ♠ Using Your Equity Chart

Day Seven

The Role of Mindset in PLO

We end Week 1 of your PLO training with a topic that doesn't necessarily deal with actual play. However, it is nonetheless crucial in maximizing profit and minimizing losses – your mindset.

Introduction

For those of you who have played poker for some time, you may have experienced times in your poker career where you confronted the specter of “TILT.” Tilt mainly arises in situations where you feel that the outcome of your hands consistently seem to go against you unjustly. An example would be a situation where you outplay your opponent, but he still hits his two-or even one-outer to drag in a gigantic pot. There have been several definitions and interpretations for tilt. The simplest and most elegant one is provided by professional poker player and author Tommy Angelo: “...the tilt is any deviation from your best game (A-game) and your best state of mind (A-mindset).” Every poker player (even the best poker pros) will experience some level of tilt during their careers. The key is to first identify when you are on tilt, then use proven methods to minimize tilt’s catastrophic effects on your bankroll.

Stop-Loss Limit

One well-known cause of tilt is losing multiple stacks (or buy-ins) within a short period of time. It is said that every person has his pain threshold when it comes to losing entire stacks. Some can go on tilt when they lose just a single stack; others keep playing their A-game even after losing 10 coin flips in a row for all their chips. Therefore, it's important that you know your own pain threshold of how long you can stay "in-the-zone." This is why good players have their own "stop-loss limit," a concept which is recommended for all poker players. This limit defines the absolute number of lost stacks you can incur in a session, before you must exit the table and quit. The general consensus by experts is that a definite number like, "quit the session after you lose 5 stacks," is advisable. While that may well be the general consensus, in my opinion, I don't think this is a good approach. That's because, as I said before – everyone has their own pain threshold of how long they can endure losing stacks before starting to tilt and play erratically. That's why I believe there is no "one-size-fits-all" stop-loss limit which applies to each and all of us. I'll let the reader determine after how many lost stacks you start to play incorrectly – like calling 3-bets from a tight player with weak A-high hands out of position, calling drawing hands with incorrect pot odds, or simply playing more hands in general. That, my friend, is when you have found your stop-loss limit.

It's interesting that the term is called "stop-loss limit" because most of us actually start to tilt when we win a lot too. We can suddenly feel invincible and start to delude ourselves into believing we don't need to focus on in-game details any longer. That's why everyone should also care about their "stop-win limit." When you are in this situation, it's almost impossible to judge clearly if you are playing your best. That's because short-term results (mostly due to variance) may falsely lead you to believe that you are playing an A+ game, when you actually are not. Unless the fish are simply giving away their money to you, it's best to "quit while you are ahead." This is your stop-win limit (i.e., pre-determined profit goal to exit), like when you win 5 buy-ins in a single session. This is a great time to both admire your enlarged bankroll and to do post-game analysis to see if you played well or were just lucky.

Bankroll Management

In my public coaching, the most frequent question I get asked regards bankroll management (BRM). People often ask what the best bankroll is at a certain stake level. Your number 1 question right now may be why I am talking about BRM, when the actual topic of the day is mindset. But you will see this is precisely where this topic belongs. Generally, there is one main factor which should influence your BRM: your mindset.

When you know that your mindset is unstable and “tilty,” then I would suggest choosing a very tight approach when it comes to BRM. You should at least choose a BRM plan where your Bankroll-to-Stakes Limit (i.e., Big Blind) Ratio is 100 (bankroll/max buy-in) or better. You choose a relatively low limit so that it doesn’t hurt you too badly when a session doesn’t go well. On the other hand, if you don’t care that much about gambling with your poker bankroll (which should *always* be separated from your real life bankroll), then don’t shy away from moving up and down between stakes *a lot* to find the highest stake limit you can play profitably. For this more optimistic mindset, I would suggest a very aggressive bankroll of just 30 stacks. What I usually tell my students is that beginners tend to tilt more easily, and therefore should take a rather tighter approach with their BRM. It is important to understand the leading cause of financial ruin in poker is to routinely play at stakes that don’t reflect good bankroll management practices. Players doing this tend to play with “scared money.”

Improving your Mindset

Like almost any aspect in life, you can work to improve your mindset. The first thing that strengthens your poker mindset is simply playing a lot. This is because you will eventually realize how cruel variance (i.e., bad beats) can be. While no one likes losing, you will understand that these horrible losses, which originally caused tilting, are now understandable in terms of mathematical probability. Many great poker players, who have confronted these bad beats many times over their career, have the correct understanding of the game and the correct mindset to calmly say, “Eh, that’s poker,” and move on. They know (and you should also know) that if they play well and play for a long enough time, they take comfort in knowing that the odds will eventually return in their favor.

If you are really serious about poker, there are books that specifically deal with the mental aspects of play. Additionally, there are several poker coaches out there who specialize in poker psychology. You can book private sessions with these coaches or receive video content they have produced on that subject. In the upcoming exercises, I will show you how you can improve your mindset by directly reflecting on yourself. Self-criticism is the most important attribute you will need for this method to work.

Exercises

- 1) After every session, write down the reason(s) why you quit.
- 2) After every session, write down the leaks/problems you recognized during the session.
- 3) Did you lack concentration at any point of your session? When? By what?
- 4) Do you have the feeling that you consciously made wrong plays? What was the root cause?

Solutions

There is no single correct solution for this exercise. Just try to apply these self-assessment questions after each game. Try to be as self-critical as possible and don't lie to yourself. The best thing to do is to analyze the reasons that caused you to have a bad session or even go on tilt (sometimes, it is not even poker-related and could be something outside your poker world like a bad argument with your partner). Discuss them with other poker players and seek their opinion. Also, reflect on your own and analyze how you could correct your mindset issues. You must take this topic seriously – many decent poker players either quit poker altogether or incur financial ruin because their mindset was completely off.

Practice

As a follow-on to the Exercises, when you play your future sessions, always be observant to your own behavior.

- ♣ Does your sitting posture differ when you play longer sessions and/or losing sessions?
- ♣ Do you play faster and/or looser after losing several stacks?
- ♣ Do you start getting frustrated or angry at some point?
- ♣ Are you skipping work, meals, exercise or sleep while on a losing streak?

Try to define those moments where you deviate from your standard routine. Repeat this for all of your future sessions and always note the amount of time passed and the number of stacks you won/lost when you recognized differences to your normal mindset.

Your stop-loss (and stop-win) limit will be exactly that moment where you experience these mindset fluctuations. The ultimate objective of this lesson is to choose the optimal session length based on maintaining an effective level of concentration, coupled with choosing the best limit level that is both profitable and solid in BRM terms. Finally, always try to work on your mindset in order to play your A-game for as long as possible, with the goal of even extending these playing sessions while still “in-the-zone.” Another aid to improve your mindset is to talk it out while playing (online of course; you might get some odd stares at a casino). Articulate to yourself why you are about to make the play you are planning. This works surprisingly well, you even might catch yourself saying phrases like, “I push here, because I hate this guy so much,” or even “I know that it’s bad, but I can’t resist.” As you can imagine these are the biggest warning signals to quit your session and reflect.

Summary

- ♠ Recognizing Tilt
- ♠ Stop-Loss Limit/Stop-Win Limit
- ♠ Bankroll Management
- ♠ Ways to Improve Your Mindset

Week One Summary

Congratulations! This is the end of the first week and you now should know enough of the main concepts to play a hand of Pot Limit Omaha from pre-flop to showdown. I hope you are enjoying your training so far and already see some progress – both in your game and your thought processes. By now you should have a good feeling for the game, but we are still lacking a lot of the finer details needed to maximize profit. Before moving on to your second week, please ensure that you fully understand all items mentioned in the bullet points summaries from the previous week. A good criterion for mastery would be that you successfully applied the items consistently during your PLO sessions. For those items with which you are not yet confident, go back to that respective day and re-engage the topic. When you feel confident with at least 15 of the following concepts, you are ready for your second week of PLO.

Day 1

- ♠ Positions on a SH Table
- ♠ Positional Advantages
- ♠ Absolute Position vs. Relative Position

Day 2

- ♠ Playable Hand Types
- ♠ Using Hand Charts
- ♠ Setting up Your Tracking Software

Day 3

- ♠ Basic Statistics of Your HUD
- ♠ Recognizing Different Types of Players Using Your HUD
- ♠ Finding the Right Adaptions Against those Player Types

Day 4

- ♠ Avoiding Auto-Pilot
- ♠ 5 Steps to Consider Every Hand

Day 5

- ♠ Factors to Consider OTF
- ♠ Differences and Similarities Between Pre-Flop and Post-Flop

Day 6

- ♠ Pot Odds vs. Direct Odds
- ♠ Calculating Pot Odds and Needed Equity
- ♠ Using Your Equity Chart

Day 7

- ♠ Recognizing Tilt
- ♠ Stop-Loss Limit
- ♠ Bankroll Management
- ♠ Ways to Improve Your Mindset

WEEK TWO

Analysing More Deeply

Welcome to your second week of mastering PLO. The aim for this week will be to get more in-depth into specific topics introduced in Week 1, with the goal of developing you into a solid TAG by the end of the week. Additionally, we start training you in the application of more sophisticated statistics, updating our defending charts, and optimizing our HUDs. Finally, this week also includes taking an in-depth look into post-flop play, which is a multi-faceted aspect of Omaha.

Day Eight

Limping

Today we take a look at scenarios involving one or more players limping pre-flop. Limping means to call the amount of the big blind pre-flop, assuming no one prior opened with a raise. A limp in the SB is called a complete.

Introduction

When we take a look at the typical micro-stakes level games in PLO, we will observe a lot of limping – mostly by weaker players – taking place. In this section, we will learn how we should adapt our play against limpers, how differing numbers of limpers before us and potential ones behind us influence our play, and if there are situations where we should limp ourselves. We will see that there are occasions where limping might very well be our best play.

The first question we should ask is why people are limping in the first place. Naturally, weak players will do it because they think that most of their range (>70%) can hit a strong flop; however, they are still aware of the fact that the majority of hands they play aren't strong enough to justify a raise. Many loose (passive) players will limp and happily call a raise, but dread raising themselves and then facing a 3-bet. As discussed earlier, equities between good hands and marginally playable hands in PLO are closer in value than comparable good vs. marginally playable hands in NLHE, so limping in PLO isn't that big a mistake after all. A lot of Omaha hands do hit at least a piece of the flop; this means that after iso-raising a limper, we don't have nearly as much fold equity OTF as we have in NLHE. That's the reason why we can't just blindly iso-raise a limper with our entire hand range. We need to select a range with decent playability and/or equity advantage.

Here's another thought. When there are already two or more limpers in the pot, we need to tighten up even more due to our lack of fold equity. In this case we have to choose a range that has both domination potential and additional equity through drawing potential to be capable of iso-raising.

When we are facing a limp, not only do we have the options to either fold or iso-raise, but we can also “over-limp.”³⁷ The concept of over-limping with raising hands in NLHE is usually a losing strategy, typically executed by really terrible players. That's why NLHE players who make the transition to PLO often shy away from over-limping. But in PLO, it's very common to over-limp, especially when the table is loose-passive or when there are already at least two limpers before us. With your knowledge of PLO starting hand strength from Week 1, do you have a good idea which hand types are suitable for over-limping?

As we can see, the topic of limping has a lot to do with fold equity and equity advantage, as well as knowing how to play in MW pots after the flop. That will

be our focus for today's exercises.

Exercises

- 1) What are the factors that determine whether we can isolate a limper or not?
- 2) Which (refined) range should we iso-raise against a) 1 limper, b) 2 limpings?
Why?
- 3) When should we over-limp and with which hand types?
- 4) Does it ever make sense for us to open-limp? If yes, in which situations?

Solutions

1) What are the factors that determine whether we can isolate a limper or not?

Players Behind Us

This might remind you of our step-by-step plan for pre-flop play. You should really know those five steps instinctively by now, since this has been fundamental to all our other playing strategies. If you are still unsure, then feel free to review the Day 4 lesson again.

The players behind us, and waiting to act, are a factor because when you observe that these players are tight, then we can isolate limpers more often. This is because the probability that we will be HU OTF will increase and our fold equity also increases. The looser the players are behind us, the less we need to think about iso-raising and the more we need to think about whether our hand performs well in MW pots or not.

Hand Strength

This sounds logical enough. Of course, we can isolate more with stronger hands independent of all other factors. The converse of this is that the worse our hand is, the bigger our need for other factors to apply. Only in the rarest cases is it profitable to iso-raise with any four cards in PLO.

Position

As discussed at length, position is a crucial factor. When we are IP to the limper we can raise a lot more than if we were OOP (see the Day 2 Exercise for details).

Stack Size

The effective stack size (ES), which is the stack size of the player with the smallest stack size in the pot, can also influence our play. Against a short-stacked player, the value of our high card hands increases, while our rundowns lose value. This is because our hot-cold equity (equity advantage) is more important than our playability (drawing potential) when isolating a short stack, who is pot-committed and may well call with any four cards.

Number of Limpers

As I already mentioned in the introduction of this lesson, the number of limpers determines with how loose a hand we can isolate, and which hands we should use to either fold or over-limp. In general, the more limpers in the pot before us, the stronger our hand has to be to justify a raise.

2) Which (refined) range should we iso-raise against: a) 1 limper, b) 2 limpers? Why?

By frequently using your defending charts while playing, you should already know that the most important factors to define a general range are based on our position and the number of limpers in the pot. We also learned today that we have to choose a range that has both domination potential and additional equity through drawing potential to be capable of (iso-) raising two or more limpers. According to our IP defending chart we should raise our MP-range in that spot. By now, we should know that small rundowns are hardly ever profitable in MW pots and therefore should be removed from our iso-range against two or more limpers. Also in Hero MP vs. UTG situations the likelihood of a MW pot, even if we raise, is way too high to ever consider small rundowns a profitable play.

We should not only refine our IP ranges. We also need to examine our OOP ranges against limpers. We have to think about those situations when we are always OOP against limpers – both in the SB and BB. The difference between the SB and the BB in a limped pot is that when you are in the SB, the BB is still to act. While in the case of the BB, we are always the last player who has yet to act in a limped pot. So when the BB is tight with only one limper in the pot, or we actually are in the BB, we can loosen up our iso-range up to our MP range. That's a range that should be strong enough in a HU pot against a single limper - even when being OOP. However, if the BB is loose or there are already two or more limpers in the pot, we should still adhere to a very tight range. To summarize this, [Table 1](#) shows our refined range of playability vs. limpers:

Position	Vs. 1 Limper	Vs. 2+ Limpers
MP	MP-Range	-
CO/BTN	CO-Range	MP-Range*
SB	If BB tight (VPIP < 20%): MP-Range Otherwise: Value Range**	Value Range**
BB	MP-Range	Value Range**

Table 1: Our isolation-raising ranges against limpers

* Exception: Overlimp smaller rundowns like 7-6-5-4ss, 9-8-7-5ss

** Representative Value Range hands include: A-K-Q-6ds, A-J-10-xss, A-Q-Q-xss, and Q-Q-J-10ss

3) When should we over-limp which hand types?

We should only consider over-limping when there are already two or more limpers in the pot. There are few exceptions. One of those exceptions would be an over-limp against one limper with hands that perform fine MW but you would fold otherwise. An example of this would be calling with a hand like Q-J-10-3ss with some loose, passive players behind us. We can't isolation raise with this hand, but it plays fine MW. So we limp along and join the party. Good hands to over-limp, against two or more limpers, would be: K-K-9-2ss, A-K-7-5ss, A-8-7-5ss, 10-9-8-6ss, 10-10-5-2ds, and K-Q-J-5ds.

4) Does it make sense for us to open- limp? If yes, in which situations?

You don't ever need to implement limping first into your game at all. Open-raising 100% of the time is always a sound strategy in PLO. However, there are certain situations in which opening a pot with a call can be a very good strategy – if we think it through well. I will give you some input on how we could implement limping first in into our game.

If you are confident with your play post-flop, you might think about limping first (or after a single limper) with hands that play well MW, but are too weak to raise. And yes, it's almost the same concept as over-limping, except there are no limpors before you. That's why we should only do this from UTG or MP on very loose-passive tables with hands as weak as J-J-x-x, A-x-x-xss, *etc.* We do this just to get a cheap MW pot going where we have domination potential and/or drawing potential to get value with hands we would otherwise fold.

A more sophisticated concept of limping first is when opening from the SB. If we open raise in the SB and are called by the BB, then we are faced with playing OOP OTF, which is quite problematic against certain kinds of players – especially when playing marginal hands at the bottom of the open-raising range. Instead, limping might be the better (and less costly) move.

With respect to BB vs. SB encounters, we can also decide to limp, in lieu of raising, our bottom range from the SB against BB players who tend to be:

- ♠ Position-aware regulars
- ♠ Players who don't fold a lot BB vs. SB
- ♠ Players who 3-bet often

One adaption against those players is to tighten up in the SB by folding a more of our standard stealing-range type hands. But a better play is to simply complete the SB with “high SPR hands.” These are hands which either don't mesh well to hit any flop strongly or hands that have to be folded against 3-bets. Examples of “completable,” “high SPR hands” from the SB include:

- ♠ Q-J-6-5ds, J-10-9-2ss, A-8-6-4ss, A-A-7-3rb, K-K-9-2ss, and J-9-9-7ss

You might not agree with some of these choices at first, but when you think about it, you should be able to recognize why they are bad to raise against tough players. Even a so-called strong hand like A-A-7-3rb plays poorly against a 3-bet in a SB vs. BB³⁸ scenario, because it is very hard to improve on the flop with this hand. If we end up calling the 3-bet after our raise, there is a lot of pressure to make our set to play this hand strongly after the flop. Even 4-betting pre-flop in a blind vs. blind situation is not ideal because we can't pot-commit³⁹ by 4-betting a hand that has such limited potential, other than its raw equity pre-flop. That said, folding these hands is not advisable either. So in these SB vs. BB scenarios, limping and trying to realize our equity, with occasional x/r semi-bluffs⁴⁰ on the flop, might just be the best way to go. It's a very comfortable way of playing these troublesome hands against troublesome kinds of players.

Practice

1) Update the limping section of your defending chart, based on today's refined ranges.

2) It is very important that you practice today's concepts at the table. Always try to observe the number of limpers in the pot, and the players behind you, before you make your decision. Both of these considerations will determine your correct play. Also, try to get involved in as many qualified hands as you can that justify over-limping.

3) If you still feel comfortable with the whole concept of limping in these situations, try some additional implementation of limping and focus on spots where you can open-limp, or over-limping after a single limper, from UTG to the BTN. Leave open-limping on the SB for another day. This is a rather advanced concept for Week 2. Come back to it later when you feel more confident.

Summary

- ♠ Factors that Determine Whether We Should Iso-Raise
- ♠ Refined Ranges Against Limpers
- ♠ Open-Limping

Day Nine

Choosing the Right Bet Size

Until now, we have only discussed when you should call, bet and raise, based on the given situation. What we haven't talked about in detail yet are the actual bet sizes (relative to the pot) for our bets and raises. In other words, how much should we bet?

Introduction

Finding the right bet size takes a little more thought than you might realize. In this topic, we will discuss both pre-flop and post-flop bet sizes and justify why we prefer a particular bet size in a certain situation over others.

Pre-Flop

Determining the right bet sizes is very dependent on two factors. The first is what our overall game plan is going to be. When we are playing a tight-aggressive style, then we can open-raise for pot in almost every position. On the other hand, if we are playing loose-aggressive, we can also think about going for smaller open-raising sizes. The second factor is the game plan for the table. As discussed earlier, you need to make adjustments to your game based on the dynamics of the different types of players at your table. As a general rule of thumb, the tighter the table, the smaller the bet sizes you should use for your open-raises. That's because on tight tables, our smaller-sized raises will have more fold equity in general and won't get into too many MW pots. On looser tables, we prefer to go for value hands; so we should go with bigger raises.

For 3-betting, I would suggest to always 3-bet to pot. It simplifies your whole game. If you 3-bet for less, then you should have a specific reason why. Another reason why varying your 3-betting sizes can be rather problematic is because you would have to associate different hand types with the corresponding 3-bet size. This could make you predictable to your villains as someone who always 3-bets to pot with premium hands, but less with weaker hands. Thirdly, smaller 3-bets could motivate more cold-callers to join the pot solely for the juicy pot odds they are getting for their call (especially at lower stakes), which is anathema for your HU hands. Finally, people tend to fold a lot to c-bets in 3-bet pots; so when you 3-bet for less, you also rake in smaller pots.

Post-Flop

Choosing the right bet size post-flop has even more complexities than pre-flop. There are several factors which come into play. You must definitely take the texture of the board into consideration and consider which bet size best fits. We will go into this topic in more depth during our exercises today.

Exercises

- 1) Which different open-raise sizes should you use pre-flop / on the flop?
Why?
- 2) Which additional factors determine which bet size we should choose with our value hands and bluff hands on the flop/turn/river?

Solutions

1) Which different open-raise sizes should you use?

Pre-Flop

UTG: Pot

MP: Pot

CO/SB: 2.5bb

BTN: 2.5bb

Why?

As we already discussed in the introduction, there are different approaches. In general, I like and recommend that you play tight from UTG and MP and loosen up from later positions. That's because the value of position is so high and we want to take advantage of people who are folding their blinds too often or are weak when playing OOP post-flop. In the diagram below (*Figure 8*), I will show you how frequently I open-raise my hands in the respective positions and, at the same time, how the looseness of the table roughly changes my frequency by position. The number on the left for each position is my recommendation for very loose tables, whereas the right number is my suggested RFI for tight tables:

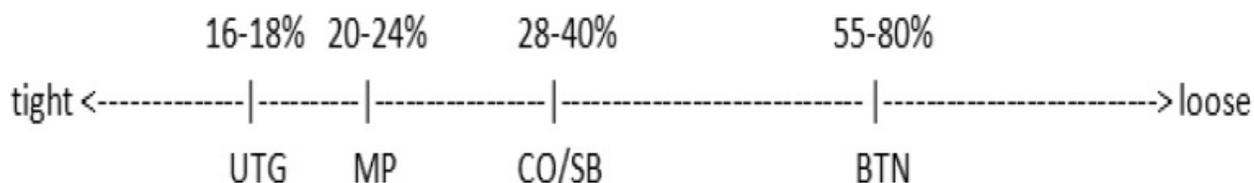


Figure 8: An illustration how open raising ranges get looser with later positions

As you might have noticed, the SB is the latest position where it is possible to open, yet is not the loo est position. That's because by open-raising in the SB, we don't have position on the BB post-flop. We can steal quite loosely anyway, since there is only one player behind us left to act and we know that we can either pick up the blinds or play in a HU pot against the BB.

We can also vary our bet sizes depending on the player types at the table. If we are on the BTN with two weak players in the blinds, we can exploit them by lowering our sizing with our weaker range. Unless they wake up with a monster hand, weak players will not care about which bet sizes we choose and will continue to fold, based on their static system.

On the flop

1/3 pot: Lockdown boards, paired boards in 4-bet pots

1/2: Paired boards / flush boards

2/3: Dry board texture

3/4: Draw-heavy board texture

Pot: Limped pot, SPR <2 situations, MW draw-heavy boards

Why?

The main consideration for choosing post-flop bet sizes is how hard you hit the board and how you think Villain hit the board. The boards where we bet small are very hard to hit or very often there are limited outs against the current nuts – so-called lockdown boards. An example of a lockdown board would be the A♠-A♣-K♠ flop where all hands are drawing dead against the current nuts, which is A-A-A-A-K, or even against a more realistic hand like A-K-x-x. The more draw-heavy the board gets, the more hands can call and the more we need to protect our made hands. The pot size in limped pots before the flop is typically small and we usually only bet for value; therefore, we should tend to bet the pot so that we can build up the money in the pot.

2) Which additional factors determine which bet size we should choose with our value/bluff hands on the flop/turn/river?

Flop

- ♠ Board texture
- ♠ Perceived range of the villain
- ♠ Villain's perceived range of Hero
- ♠ SPR

Turn

- ♠ All points mentioned above
- ♠ Betting smaller on scare cards than on blanks
- ♠ Betting bigger on cards that bring more draws

River

- ♠ All points from the flop
- ♠ Evaluating the entire hand (including pre-flop)

As you can see, there are a lot of additional factors, aside from board texture alone, which can influence our chosen bet size. The *perceived range of the villain* is the range of hands we think Villain would play, based on the way we have already observed him and his VPIP/PFR/3-Bet stats. This can also be important if we are on the river and have to think about how much he is willing to pay our winning hands with the range we think he has.

The *Villain's perceived range of Hero* is the range that Villain thinks we have. The simplest example is when we 4-bet with a 100bb effective stack. Our perceived range by Villain forces him to consider that we are holding A-A-x-x. If an Ace or a paired board hits, then we only need to bet small to have a big amount of fold equity.

Factors that still come into play for us on the flop are the *SPR* scenarios. With an SPR of 2 or less, the pot bet is almost always the best choice – provided there are some outs you can draw to. This maximizes fold equity and, at the same time, gives the most value out of our top range while still being balanced.⁴¹

On the turn, there is a general rule of thumb that you should *bet scare cards smaller than blanks*. Think about a flop of J♥-10♣-3♣. Hands that call this flop are generally flush draws, made hands like J-10, and wraps with maybe a pair in addition. Let's say the turn brings the J♠. There is actually no reason now to bet very big, because all the players on straight and/or flush draws should fold to a small bet, while made hands (like J-10-x-x) won't fold to any bet, regardless of size.

On the river, there are not too many new considerations that can be made regarding bet sizes we haven't yet considered on the flop and turn. It's just important to think of the whole hand and then decide what the best bet size is. For a better understanding of all these factors, I will provide you a guided tour through a complete hand. Along the way, I will highlight every key consideration. This is also your first introduction to hand reading.

Pre-Flop

Let's assume all players are 100bb deep and we are first to act on the button. We steal for 2.5bb pre-flop with A♠-J♠-3♣-2♣. The SB folds and the villain in the BB calls. This results in a *big SPR* OTF.

Flop

The board comes Q♠-9♥-4♠. Villain checks. We have a nut flush draw and c-bet the flop for 75% of the pot because it's a rather *wet board*. Villain calls.

Turn

The turn brings the 6♣, so the board is now Q♠-9♥-4♠-6♣. Villain checks. We now have a weak gutshot in addition to our nut flush draw. His *perceived range* is now leaning towards a pair with something in addition (i.e., a weak flush draw or a straight draw). That's because his strong hands would have already bet or check-raised on a draw heavy flop like this one. We bet the turn about *80-90% of the pot*, since the 6♣ *isn't a scare card but does bring more straight draws*. At the same time, this card doesn't complete a lot of strong two pair-hands, so he also has to fold hands that called the flop (which is very good for us). At the same time, we want to punish draws harder with our bet size, as we believe the draw might be within *his range*. Villain calls our turn bet. At this point, we know that his hand isn't very strong because he would definitely have shown aggression with his strong hands (like sets) by now, because almost every river card will complete a draw.

River

The river brings the 2♦, making the final board Q♠-9♥-4♠-6♣-2♦. Villain checks. Even though we missed all of our draws this card shouldn't have improved the hand of our opponent. Also, *Villain's perceived range of us* is very strong because we bet the flop and the turn on a board where we can credibly represent a strong hand. So, by betting this river, we can put great pressure on the Villain. We should bet big enough that he folds his single pair of Queens, overpairs and other weaker hands. I would suggest something around 60-70% of the pot. Betting larger doesn't achieve a lot because the only hands that will call are made hands (e.g., with a 6, or slow-played sets that turned into full houses [which Villain played poorly, considering how much value he loses against draws by not raising earlier]). Unless he is an absolute fish, any remaining hands will fold to this bet.

Practice

Try to find the pre-flop bet sizes that best fit your style. You can make a diagram of how your ranges are derived, like I presented earlier, and then adjust your bet sizes to it. Also, think about the most likely table setup you face at your stakes and adapt your ranges and sizes based on that. You now have the key reference points to find the perfect bet sizes for your game and for the table. For today's session, as well as future ones, keep working on your post-flop bet sizing and try to consider as many factors as possible before making your bet.

Summary

- ♠ Adjusting Bet Sizes Pre-Flop
- ♠ Factors that Influence Our Bet Sizes Post-Flop

Day Ten

Post-Flop Statistics

We have already considered how to use basic pre-flop statistics to characterize our opponents. Today, it's time to take a look at the next step, which are the statistics we will use at the flop, turn, and river.

Introduction

When we talked about the HUD in Appendix 4 (the link is given in the introduction), we already introduced some post-flop stats. So not every stat you will see in this section will be entirely new. Make sure that you put the stats that we will often refer to in your main HUD. I suggest that you restructure your current HUD into two panels as shown in *Figure 9*. The new post-flop stats, which you should consider adding to your HUD, are circled in.

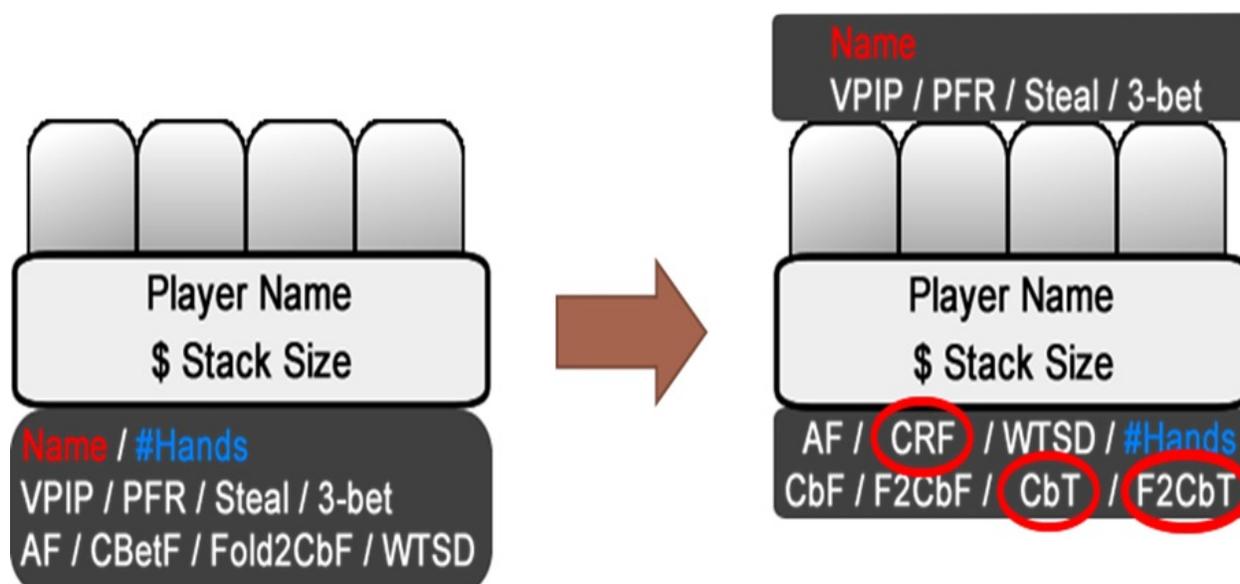


Figure 9: Splitting our current HUD (left) into two panels to separate pre-flop from post-flop (right)

Since all the uncircled stats have already been discussed in Appendix 3 (the link is given in the introduction), we will just consider the new ones. In addition to these three new HUD stats, I will also introduce post-flop stats which I like to integrate in my pop-ups.⁴² You might find these very useful for solving the exercises.

HUD-Stats

- ♠ *Check-Raise Flop (CRF)*: This value indicates how often this player raises a bet after checking the flop. I recommend using the “Check-Raise Flop vs. PFA” statistic rather than the general check-raise flop statistic. You will need this stat mostly when you are the PFA and therefore it’s handy when you have it directly in your HUD rather than in a pop-up. A good value for this stat would be around 15%. Lots of weak regs and players at lower stakes, in general, tend to have a CRF of less than 10%.
- ♠ *Continuation Bet Turn (CbT)*: This statistic tells you how often this player c-bets the turn, after he already c-bet the flop. I would recommend that for both the CbT as well as for the CbF stats, you integrate the “Single Raised Pot” versions of these stats (“CbF/CbT in SR pots”) in order to have best possible details for the most common scenarios, which are SR pots. Your CbT should be somewhere around 55%.
- ♠ *Fold to Continuation Bet Turn (F2CbT)*: This stat shows you how often this player folds to a c-bet on the turn, after calling the flop. As with the CbF and CbT stats, I suggest that you use the “Single Raised Pot” versions of the F2CbF and F2CbT stats. As with the pop-ups, you might even consider adding F2CbF/T values for both IP and OOP. Folding more than 50% OTT makes you vulnerable to aggressive opponents.

Pop-up Stats

You should integrate the following pop-up stats for your “CbF” stat.

- ♠ *Fold Continuation Bet to Raise on the Flop (CB-Fold F)*: This stat tells you how often the villain plays c-bet/fold OTF. This stat is especially valuable when the villain has a high c-bet value. Use it to judge how often he is willing to fold to your raise. Players who fold like a cheap suit to raises, following their c-bets, typically have a CB-Fold F value of 55-60%. You should attack often when you see this threshold.
- ♠ *Skip Flop Continuation Bet and Check-Fold (FSkCbF)*: This stat shows you how often this player folds when he is the PFA and checks OOP. Most regulars at lower stakes have the big leak that they almost always fold (as much as 85% or more) when they check to you OTF as the PFA.

To get a better idea of how such a pop-up would look in practice, [Figure 10](#) shows you how I would suggest you to design your CbF pop-up:

CBet vs. Raise	Total	Normal	3Bet
CB-Call	28	25	33 (57)
CB-Reraise	15	9	32 (37)
CB-Fold	60	66	46 (57)
Skip CB OOP and Total	Normal	3Bet	
Check-Call	20	20	14 (14)
Check-Raise	10	9	15 (13)
Check-Fold	71	71	71 (14)

Figure 10: The first pop-up: CbF

In this case, “Normal” represents single raised pots, whereas “3Bet” is for 3-bet pots.

You should integrate the following pop-up stats to your “F2CbF” stat.

- ♠ *Bet vs. Missed C-Bet*: This stat is the counterpart of the FSkCbF stat. It determines how often this player bets when the PFA checks to him. When this value is high you can x/r your strong hands on draw-heavy boards with the intention of letting this player bet his semi-bluffs, then put him on the ropes with your raise. A value of around 40% should be considered your default to check-raise.

- ♠ *Donk Bet (Db)*: This stat tells you how often a player bets into the PFA. The higher this value, the weaker the hand strength of the player's donk bet is. Exploitable Db stats begin at around 20%.
- ♠ *Fold to Donk Bet (F2Db)*: This is the counterpart of the Db stat. It tells you how often a player folds to a donk bet. It's wise to compare this stat with the "F2Cb IP" value, in order to judge if this player approaches donk bets with more or less caution than c-bets.

Figure 11 shows you how such an F2CbF pop-up could look like:

Donk Bet vs. Raise	
Donk Bet	17
Donk-Call	44 (27)
Donk-Raise	0 (19)
Donk-Fold	56 (27)

vs. Donk Bet	
Call Donk	32,3
Raise Donk	13
Fold to Donk	55

vs. Missed C-Bet	
Bet vs. Missed CB	62

Figure 11: Our first F2CbF pop-up

Exercises

What are the most important statistics you should consider post-flop, before you make your decision a) as the PFA, b) vs. the PFA?

Solutions

What are the most important statistics you should consider post-flop, before you make your decision:

a) As the PFA?

- ♠ *VPIP/PFR*: There are still some pre-flop values that you should also consider post-flop to determine your opponent's range. Fortunately, VPIP and PFR/RFI are all you really need for most in-game situations. Additional pre-flop stats, like (call to) 3-bet, also help in determining the ranges your opponents carry to the flop.
- ♠ *Fold to CBet F IP/OOP / Fold to CBet T*: These stats can strongly influence your decision of whether you want to c-bet the flop or not. They are the main consideration as to whether you should bet your bottom of range whiffs or just check/fold and avoid spewing any more money. As listed here, you might want to add the positional stats for the F2CbF stat in your respective pop-up to get even more detailed information.
- ♠ *(Check-)Raise CBet*: We will look at this in detail in the c-bet discussion (see next section) and consider how this value could influence our c-betting behavior, especially with the middle of our range.
- ♠ *WTSD*: The higher this value is, the weaker the villain's range is, and the more you should consider betting light for value.
- ♠ *Bet vs. Missed CBet*: This stat indicates how often the villain bets when we check as the PFA. If this value is very high, we can exploit it by check-raising instead of c-betting to get value out of his bluffs. Also, checking the flop behind and raising the turn is a valid strategy here.
- ♠ *AF*: This stat gives you a general picture of the villain's aggression. When this stat is below 1, then you should almost always consider betting yourself rather than hoping to induce bluffs.
- ♠ *(Donk Bet)*: I put this stat in parentheses because you don't have to consider it until a donk bet actually occurs. If you are facing a donk bet, then it's wise to also take a look at the donk vs. raise stats of this player to accurately judge how strong his donk betting range actually is.

b) vs. the PFA?

- ♠ *CBet F IP/OOP / CBet T*: If the CBet T stat is significantly lower than the CBet F value, then this is the perfect opponent to float on the flop. To be able to better judge Villain's behavior from IP and OOP, you might want to add the positional CbF stats in your pop-up.
- ♠ *CBet-Fold F*: It's always worth checking out this stat because some opponents have a very high fold ratio when their c-bet gets raised.
- ♠ *Skip CBet and...*: This value indicates which type of action this player most often takes after skipping the c-bet. Especially at lower limits, players are very unbalanced in this spot and typically fold >80% to a bet when they don't c-bet OOP.
- ♠ *Fold to Donk Bet*: It's always a good idea to compare the fold to donk bet to the fold to c-bet stat. That way, you can determine how Villain approaches donk bets compared to c-bets. Sometimes, opponents react quite weakly against donk bets and you should exploit that leak in their game when it is given.
- ♠ *(WTSD)*: This time the WTSD is in parenthesis because it is only important when we are the aggressor. Having this information of how often Villain goes to showdown doesn't really matter much when he is the PFA. The reason for this is that there are just more important values like the previously mentioned CBet-Fold or Skip CBet and Fold stats; additionally, he is the one with the initiative. Nevertheless, the WTSD can be a nice aid when in tight spots.

Practice

1) If you haven't done it already, you should refine your current HUD by splitting it up between pre-flop and post-flop, as well as adding the pop-up stats we discussed today.

Hint: When you need help in creating the pop-ups, here are the links that will help you:

i) Hold'em Manager 2:

<http://hm2faq.holdemmanager.com/questions/2111/HUD+Popups+Stat+Descri>

ii) Poker Tracker 4:

<https://www.pokertracker.com/guides/PT4/hud/advanced-hud-guide/>

2) You should now have an idea about these more detailed post-flop statistics. To utilize the full power of these stats, you might have to go back and review this lesson a few more times to really know which stat you will need in which situation. I can only recommend that you put in the time and effort into learning these statistical tools. The payoff for your due diligence is this: short of actually seeing your opponent's hole cards, you will truly understand when and how you can exploit your opponents, by utilizing these very powerful tools.

Summary

♠ How to Use Post-Flop Stats

Day Eleven

To C-Bet or Not to C-Bet

We already know a lot about when we should adjust our range during pre-flop action, based on the player types at our table. Now it's time to develop a similar approach to our post-flop game.

Introduction

Since we have approached a rather aggressive style of play pre-flop, we most likely will see the flop with just one or two opponents. Now we need to decide whether to bet or to check. To judge this, it's important to know the extent to which our starting hand hits the flop. We differentiate between top range (great flops), middle range (fair flops) and bottom range (bad flops).

Top Range

The top range includes the best boards for our starting hand. As a general rule of thumb, the top range consists of made hands (with nut draws) that we will gladly stack off with for 200bb or less. An example for top range would be K♦-K♥-Q♦-J♥ on A♦-K♥-9♦.

Middle Range

The middle range is the most difficult range to play. It contains hands with potential. It's often tough to decide if we can call a large bet or raise on these flops, because our hand is usually ahead of most of the villain's flop calling range (unless he changes his game and slow-plays stronger hands) but behind their raising range. When I do my hand evaluations, the toughest hands to analyze are these middle range spots. A typical middle range scenario would be holding $Q\heartsuit-Q\spadesuit-J\heartsuit-10\spadesuit$ on $7\heartsuit-7\spadesuit-4\spadesuit$.

Bottom Range Last is the dreaded bottom range. This range includes everything from complete whiffs to trouble hands, like non-nut draws with weak blockers. A simple example for bottom range is $A\heartsuit-7\clubsuit-6\heartsuit-5\clubsuit$ on $10\heartsuit-9\heartsuit-3\heartsuit$.

Note that there will be hands with certain flops that don't clearly fall into one of these categories, like $8\heartsuit-8\spadesuit-6\heartsuit-5\clubsuit$ on $K\heartsuit-10\heartsuit-8\clubsuit$ which would be "lower top-range," or $J\spadesuit-9\heartsuit-8\spadesuit-7\heartsuit$ on $7\heartsuit-5\heartsuit-2\heartsuit$ could be considered "upper middle-range." In such cases, it's best to choose the lower of the two respective ranges, unless reads of your opponents tell you otherwise. Both of these hybrid "sub-ranges" should be played like your middle range. Your task will now be to think about these ranges in certain scenarios and decide whether to c-bet or check with them.

Exercises

- 1) Give examples for top range, middle range and bottom range on the flop K♠-10♠-8♥.
- 2) In general: when should we c-bet our a) top range, b) middle range, c) bottom range?
- 3) How would the player types, a) Passive Fish, and b) Regular, influence our decision of c-betting with our middle range?
- 4) What statistics influence our decision to c-bet?

Solutions

1) Give examples for top range, middle range and bottom range on the flop K♠-10♠-8♠.

Top range: K♥K♣-4♥3♦, K♦-Q♠-J♠-10♣, A♠-K♣-Q♠-J♦

Middle range: A-Q-J-8, Q-J-10-x, 10-9♠-7♠-6, 10-10-x-x-, A♠-J-J-x

Bottom range: 7-6-5-4, Q-Q-6-5, A♠-8-7-5

2) In general: when should we c-bet our...

2a) Top Range

Always, unless we have a good reason to trap or to slow play, like when spiking quads on dry boards.

2b) Middle Range

HU

- ♠ When we have fold equity vs. Villain's range (J♥J♣-4♥3♦ on 6♠-6♦-2♠)
- ♠ When the risk of getting check-raised is low (10♦-9♥8♦-7♠ on K♦-7♥5♠ vs. loose-passive)

HU+MW

- ♠ Showdown-Value⁴³ (SDV) hands with only a few good turn cards to improve (A♥K♠-8♠-6♥ on 8♥6♦-3♦)
- ♠ Strong blockers (A♥A♣-5♦-5♠ on 6♥4♥3♣)
- ♠ Hands that don't have a tough decision against a raise (A♠-8♣-7♥6♥ on K♠-8♥4♠)

3-way

- ♠ To “buy” ourselves position (i.e. betting in the CO to make the BTN fold in order to play IP against the third player for the rest of the hand)

2c) Bottom Range

- ♠ Only for auto-profit⁴⁴ (e.g., On a dry board against an opponent with 65% F2CBet)
- ♠ Rarely in MW pots

3) How would the following player types influence our decision of c-betting with our middle range?

3a) Passive Fish

3b) Regular

3a) Passive Fish

Against Passive Fish, we should c-bet almost everything in our middle range. This is because these players seldom semi-bluff. Therefore, we are not worried about having to fold the best hand with our middle range when we face a raise against this player (i.e., we are fairly certain we are beat).

However, we should c-bet less of our bottom range. That is because these players tend to call with almost every hand that connects with the board at all, like bottom pair with gutshots or pure flush draws. Therefore, you should at least have some good turn cards for your hand to be able to fold out their weaker hands on later streets. In short, there is generally less danger to get x/r and a higher likelihood to get check-called (x/c) by those players.

3b) Regular

Against regs, it is a lot harder to define fixed c-betting strategies because the two types – TAG and LAG – are basically only pre-flop tendencies. What we do know is that the TAG plays stronger pre-flop hand ranges than LAGs typically do. That's why we should generally bet low card boards, that don't hit the playing range of TAGs, like $2♥5♣-6♠$ with a higher frequency against them. Other than that, it strongly depends on their x/r value.

- ♠ <10%: C-bet/fold almost our entire middle range
- ♠ 12-18%: Important to have a solid check-back range
- ♠ >20%: Bet/raise our highest equity middle range

If we don't have any reads on that statistic, we should generally check back more hands in our middle range due to their higher semi-bluff tendency.

4) What statistics influence our decision to c-bet?

VPIP/PFR: In the previous exercise we discussed how tight ranges enable us to c-bet low card boards with a high frequency. Also, against Passive Fish with VPIPs as high as 70%, c-betting almost any board is a winning strategy. That's because the starting hands of those players are so disconnected that they rarely hit any strong hands OTF.

Check-Raise: The importance of the x/r value has already been discussed at length in the previous exercise. Please check Exercise 3b again if you need to recap.

Fold to C-Bet F/T: The F2CBetF tells you how big your direct fold equity is with a c-bet (on average). Note that you should also consider the board texture to be able to judge better your fold equity on this specific board (the wetter the board - the less FE). The F2CBetT is a very good indicator in determining your FE, when planning on betting a lot of turn cards that likely don't hit Villain's range.

Bet vs. Missed C-Bet: If this stat is significantly high, then we might consider mixing in check-raises as PFA against this player to punish him for his loose betting against our perceived weakness. Also, when this value is low, we can get to showdown cheaply to realize our equity.

Practice

Now it's up to you. When you play a session today, try to determine which range you have on every flop. Try to focus especially on the middle and bottom ranges and evaluate if checking back could be better than blindly c-betting. Also focus on the player types you are facing OTF in determining what your best play is.

Summary

- ♠ Three Ranges OTF
- ♠ When to C-Bet these Ranges
- ♠ Which Stats Influence Our Decision

Day Twelve

Out of Position on the Flop

Although we should always try to be taking the initiative, we must not forget that there is a very common situation where we are both OOP and without initiative – calling from the blinds.

Introduction

Before we move on to the exercises we should define, and then evaluate, the pros and cons of donk betting, check-raising and check-calling.

Donk Bet

The donk bet means betting out of position (i.e., you act first and bet first) when you did not make the last bet or raise in the previous betting round. The donk bet is a less commonly used and unorthodox move for most players, especially in HU pots (hence, the name – as something a poker-clueless “donkey” player would do). The traditional play by most players, after calling a pre-flop raise OOP, would be to just automatically check to the raiser. Even solid regs rarely consider that donk betting could be the best play. But the beauty of the donk bet is that it is so unexpected. It throws a monkey wrench into Villain’s plans for the hand. Another advantage of donk betting is that you can prevent the player IP from getting a free card. So you get value from Villain’s hands that are too strong to fold to your bet, but too weak to raise. The donk bet forces the villain to give up on his bottom range and decreases his range in the problematic middle band. He might even fold the worst parts of his middle range, which makes donk betting with our vulnerable hands quite attractive. Lastly, when Villain has his bottom range, our donk bet prevents him from taking down the pot with a c-bet.

There are also some cons to donk betting. You have less fold equity than with check-raising, because the price the villain gets is better. So when you donk bet your weaker range and get called, you are mostly doomed on the turn. You should also “get out of Dodge” when he raises your donk bet, as you have to fold your weak range against a raise. When you donk bet with strong hands, you don’t get value from the bottom part of villain’s range, because he simply folds without even attempting to c-bet. Also, your opponent (like anyone who knows how to use position to their advantage) can decide how big the pot should be. If he wants to play a small pot, he calls; otherwise, he raises.

Check-Raise

Check-raising is the more common play for most regulars. It has the advantage that it looks really strong, so it produces a lot of fold equity. That's why it's good to mix up your value check-raising range (when you have the best hand) with some semi-bluffs (when you are fairly certain you are behind at the flop, but have outs to a winning hand), so that you are more balanced. After all, you can't expect Villain to simply fold to every one of your check-raises. Another good thing about check-raising is that you can get a lot of money in the pot OTF. Reducing the SPR from OOP and seizing the initiative is always a good thing, since there are then fewer possibilities for Villain to outplay you, since he cannot regain pot control, or get free cards on later streets.

The downside to check-raising is that it enables Villain to take a free card on flops by checking back to you when you have top range hands you really wanted to check-raise with to build the pot. Now you lose value from your top range on boards you hit hard. You also enable Villain to fold his middle range, from which you usually would get more value on future streets if you hadn't shown so much strength.

Check-Call

The last option when we think that our hand is somehow playable is to check-call. This might be the most difficult play to balance our weaker hands with our strong ones. The biggest advantage of x/c, over the other two options, is that we keep the villain's (semi-)bluffs in play for future streets. When we donk, they usually fold their bottom range immediately. When we check-raise the c-bet OTF, that's the only bet we will get. But by check-calling when we are ahead, we give Villain the possibility of firing more bullets on later streets (with the river bet being a bullet in Villain's head).

The danger of check-calling occurs when our range is too weak to stand that same pressure on future streets (otherwise we would have check-raised, right?). Even check-calling with our top range, also known as "slowplaying," isn't usually recommended in a game like PLO. The danger here is that every new card usually changes the current nuts and either shuts down the action (in the best case), or puts you behind (in the worst case). Another weak play is to x/c your (weaker) draws. The problem with playing draws passively is that you probably won't get much value when you hit your obvious draws (e.g., a third spade on the turn for the evident flush) on future streets. Related to that, you can sure lose a lot of money trying to hit your draw if you are check-calling with incorrect odds (assuming that making your draw is the only way you can win the hand). You are additionally prone to getting bluffed off your weak range by Villain's aggression.

Exercises

- 1) When do we donk bet a) HU, b) MW?
- 2) When do we check-raise a) HU, b) MW?
- 3) When do we check-call a) HU, b) MW?
- 4) What statistics influence our decision whether to x/r, donk bet or to x/c?

Solutions

1) When do we donk bet?

a) HU

- ♠ Generally, less, because HU we face more c-bets.
- ♠ Our top range if a c-bet is less likely (e.g., flop 10♥9♥8♠ vs. a passive player).
- ♠ When dominated hands call, but don't bet themselves.
- ♠ When Villain's perceived range doesn't hit often, but checks behind often.

b) MW

- ♠ Top range.
- ♠ To out-manuever the PFA in the sandwich position.

2) When do we check-raise?

a) HU

- ♠ To get the c-bet out of the PFA when we are strong.
- ♠ To protect ourselves from difficult decisions on future street (e.g., an SPR of around 4 OTT with a strong made hand on a very draw-heavy board, where the SPR would be 1 on the river, even if we would pot-bet).
- ♠ As a semi-bluff when our range hits the board stronger than his (e.g. low boards, paired boards).
- ♠ If free cards don't bother us.

Note: We always have to know in advance what to do against a re-raise!

b) MW

- ♠ Top range on boards where a c-bet is likely (e.g. 8♠-7♠-6♥5♥ on 4♠-5♠-J♦).
- ♠ 3-way when we have relative position.

3) When do we check-call?

a) HU

- ♠ To realize our SDV with our middle range.
- ♠ To get value from bluffs against aggressive players.

b) MW

- ♠ Nut draws when we have little FE with a bet against the field of players on the certain flop.
- ♠ Top of our middle range (e.g. J♠-9♦-8♠-7♦ on 7♥5♦-2♦).

What statistics influence our decision whether to x/r, donk bet or to x/c?

VPIP/PFR: To judge if the board hits his range, the VPIP and PFR are (as always) our basic indicators. Low VPIPs/PFRs usually don't hit low card and middle card boards particularly well and can therefore be attacked by us. Players with 70%+ VPIP generally don't hit strong hands OTF frequently and therefore have to fold more often against our donk bets.

C-Bet F/T: These stats give us some insight as to how often we will face a c-bet on the flop and then the turn. If the CbF value is low (<50%) we should opt to donk more to avoid Villain getting free cards with his middle range. If the CbF and the CbT are both high, we should x/c more hands because those players have a lot of bluffs in their range. If the CbF is high and the CbT is low, this player is a good target for our lighter check-raises for immediate FE.

C-Bet/Fold: This stat is especially important when Villain's c-bet value is high because we can assess that his c-betting range is rather vulnerable.

Fold to Donk Bet: If Villain's Fold to Donk Bet stat is way higher than his c-bet/fold stat we can consider to donk bet more frequently against this player.

Practice

Now it's again time to practice these new strategies we have learned at the tables. The emphasis will be to re-focus on blind defense. Continue to play tight pre-flop from the blinds so that your range OTF will be easier to play. Try to slowly incorporate solid OOP plays into your game, based on your evaluation that it is a profitable play given the table or specific player. Consider using the stats you learned in this section to aid you in finding your best play in certain situations.

Summary

- ♠ Pros and Cons of X/R, Donk Bet, X/C
- ♠ Differences Between HU and MW
- ♠ Player Types / Stats that Influence Our Decision

Day Thirteen

Equities in PLO

The topic for this section is equities in PLO. In this lesson, we will learn more about hand vs. hand equities. More importantly, we will learn how to estimate our equity using our outs.

Introduction

This will be our second mathematics topic. But don't worry; similarly to our pot odds lesson, it won't be that hard. We won't even need a calculator to be able to understand the topic! We already know from Appendix 5 (the link is given in the introduction) how to multiply every out by roughly 2.5% to estimate our equity over one street. Today, I will explain my method of estimating equities over *two* streets (from the flop to the river) when all we know is the number of outs we have. There are two major principles you have to remember. I call one of them *locked*, whereas the other one is *unlocked*.

Locked

Every blocker/out changes our equity by a margin of 4%.

Backdoor Flush Draw (BDFD) = 3%

Example: Flush Draw vs. Straight

Unlocked

Every blocker/out changes our equity by a margin of 3%.

BDFD = 2.5%

Example: Flush Draw vs. Set

We will now discuss the background to these methods. First we will analyze the unlocked scenario:

Board: A♠-9♥5♠

Hero: K♠-Q♦-J♣-9♠

Imagine this is a 4-bet pot. You can be pretty sure that your opponent is holding A-A-x-x without a flush draw here, so it's important to know your equity against this hand. Take a look at how we do this. We know that this is an unlocked scenario. It means that if we hit one of our outs, we could still lose the pot to a better hand. In this scenario, when we hit our flush, our opponent could still win the pot by improving to a boat⁴⁵. First we need to count our outs, blockers and BDFDs.

Outs: 9 (2♠, 3♠, 4♠, 6♠, 7♠, 8♠, 10♠, J♠, Q♠) Blocker: 1 (9♠)

BDFD: none

In the unlocked scenario, “every blocker/out changes our equity by a margin of 3%,” so our calculation now is easy: $9 \times 3 + 1 \times 3 = 30\%$.

For equity demonstrations I recommend using the [PokerStrategy.com](http://www.PokerStrategy.com) Equilab, which you can download for free at <http://www.pokerstrategy.com/poker-tools/equilab-omaha/>. The EquilabOmaha graphic user interface is presented in *Figure 12* below to check the result.⁴⁶



Figure 12: Equilab Omaha calculation of equity (with blocker).

As you can see our estimation was very close to the actual result!

The locked method is analogous; just use the higher multipliers for our outs/blockers/BDFDs. Let's practice!

Exercises

Board: 5♠-6♦-7♥

Hero: 10♠-9♦-7♣-6♥

Villain: Straight

Pot: \$100

Hero bets \$50, Villain raises to \$200 and is all-in

1) Calculate

1a) How much equity does Hero have (also give an estimate with today's method)?

1b) How much equity does Hero need for a profitable stack off?

1c) Can Hero call here?

Board: A♠-8♥6♠

Hero: A♥10♣-9♣-7♥

- 2) Estimate and
- 3) Calculate

How much equity does Hero have against:

- a) A♦-A♣-2♦-4♣ (Top Set)?
- b) A♦-K♠-Q♠-J♣ (TP + FD)?

Solutions

Board: 5♠-6♦-7♥

Hero: 10♠-9♦-7♣-6♥

Villain: Straight

Pot: \$100

Hero bets \$50, Villain raises to \$200 and is all-in

1a) How much equity does Hero have (also give an estimate with today's method)?

Let's start with the *estimate*: Outs: 7 to 8 (6♠, 6♣, 7♠, 7♦, 8♠, 8♦, 8♥, 8♣ (Villain could block one 8 with his straight)) Blocker: none
 BDFDs: none

Result: 7(8)x4 (locked) = 28% (32%) This example is locked because when we hit our outs, Villain has no way to improve his hand.

Now compare our estimate with the *calculation*: There are 3 possible straights that Villain could have, so we have to calculate our equity against all of them. Consult [Figure 13](#) for details.



Figure 13: Our equity against all straight combinations

On average, we will have equity of about 32%.

Pot: \$100

Hero bets \$50, Villain raises to \$200 and is all-in

1b) How much equity does Hero need for a profitable stack off?

i) 150 for 350 = 2.3:1 = “1 out of 3.3 times” = $1/3.3 = 30\%$

ii) $150 / ((100+50+200)+150) = 30\%$

1c) Can Hero call here?

Hero can call here, but it is barely correct. He needs 30% equity and has 32% on average. But this decision does not take the rake into consideration. This means you will always need a bit more equity than the mathematics tells you. Therefore, in a raked cash game, if your call is right around break-even, the lost value due to the rake should opt you to fold.

2)

Board: A♠-8♥6♠

Hero: A♥10♣-9♣-7♥

Estimate: How much equity does Hero have against:

2a) A♦-A♣-2♦-4♣ (Top Set)

Outs: 13 (5♠, 5♦, 5♥, 5♣, 7♠, 7♦, 7♣, 9♠, 9♦, 9♥, 10♠, 10♦, 10♥)

Blocker: 1 (A♥)

BDFDs: 1 (♥)

Result: $13 \times 3 + 3 + 2.5 = 44.5\%$

Calculate: How much equity does Hero have?

The screenshot shows the PokerStrategy.com Equilab Omaha software interface. The window title is "PokerStrategy.com Equilab - Omaha". The menu bar includes "File", "View", "Tools", and "Help". The main title is "PokerStrategy.com Equilab Omaha".

	Hand range	# Combos	Equity
MP2	AhTc9c7h	1	46.26%
MP3	AdAc2d4c	1	53.74%
CO			
BU			
SB			
BB			

Flop: As8h6s
Turn:
River:
Dead:
A 8 6
Clear all Evaluate

Figure 14: Calculating our equity against top set

Board: A♠-8♥6♠

Hero: A♥10♣-9♣-7♥

Estimate: How much equity does Hero have against:

2b) A♦-K♠-Q♠-J♣ (TP + FD)

Outs: 9 (5♦, 5♥, 5♣, 7♦, 7♣, 9♦, 9♥, 10♦, 10♥)

Blocker: None

BDFDs: 1 (♥)

Result: $9 \times 3 + 3 = 30\%$

Calculate: How much equity does Hero have?

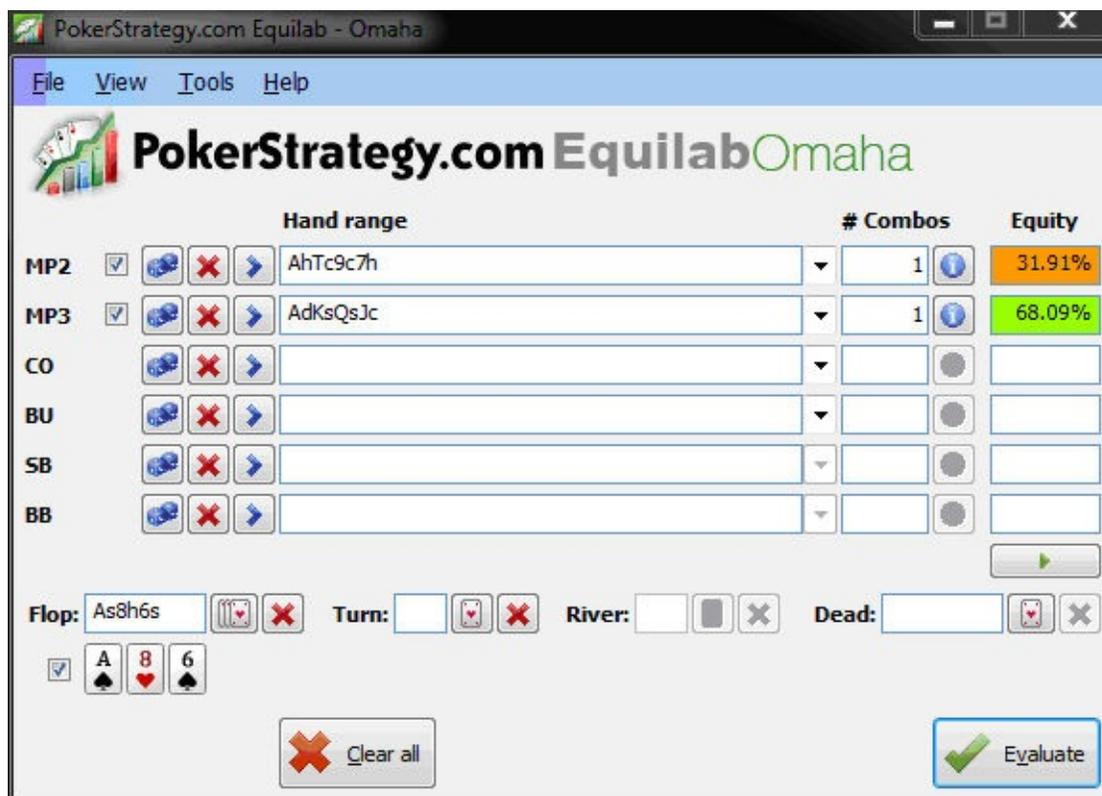


Figure 15: Calculating our chances to win against top pair with a flush draw

We are at the end of the exercises for this section. I hope you understood everything so far. As always go back when something is still unclear and repeat the exercises afterwards.

Practice

You can practice the methods from this section any time during your session. Just estimate your outs against a hand that the villain most likely has, then determine your equity. You now have a simple and powerful way of quickly calculating your equity in-game, without the need of equity tables and other tools.

Summary

- ♠ Calculating Equity using Outs
- ♠ Locked vs. Unlocked Principle

Day Fourteen

Pre-Flop Statistics

It's now the end of Week 2. Are you consistently winning at the tables yet? Are you thinking about moving up to a higher level, perhaps? Before you do, this would be a good time to learn about the most important stats that will greatly improve your pre-flop game.

Introduction

A few days ago, we updated our HUD by adding some additional post-flop statistics and pop-ups. Today, I will tell you which stats are important to put into your HUD or at least into your pop-ups for pre-flop improvements. Again, I will first show you what your actual HUD should look like at the moment and the stats you should add in order to cover most of the important pre-flop statistics. [Figure 16](#) shows these adaptations. The left side displays your current HUD, whereas the right side shows your objective HUD.

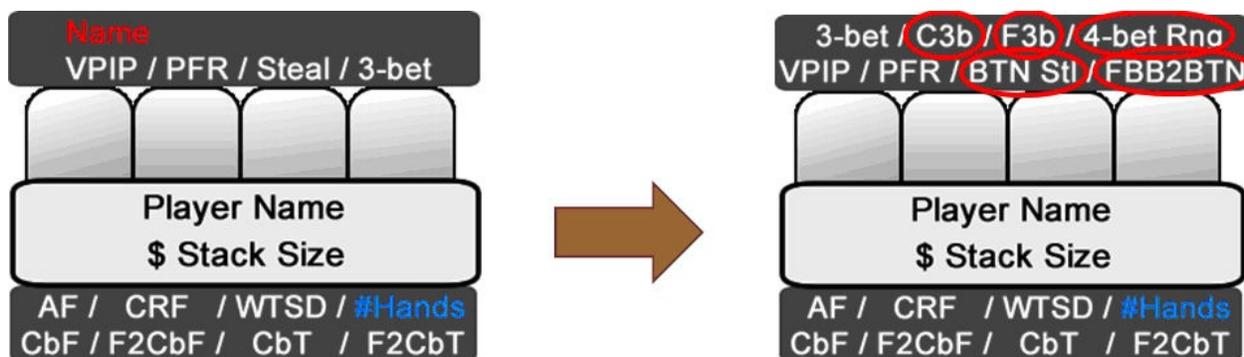


Figure 16: Adding important pre-flop stats to your HUD

As you might already have recognized, “Name” is no longer in the revised HUD. That’s because there is simply too much information of more value than the player name. What follows now is an explanation of all the new HUD stats (circled) and some other stats you might want to consider adding to your pre-flop pop-ups.

HUD-Stats

Call 3-Bet (C3b) *Fold 3-Bet (F3b)* 4-Bet Range (4-Bet Rng)

I put these three stats together because they correlate with each other. I think it's very important to have as much information as possible about the 3-betting tendencies of our opponents as well as how they react to 3-bets. Look out for players who fold more than 20% against 3-bets and try to exploit them by 3-betting them a lot (especially IP). The 4-Bet Range is an indicator of how often this opponent 4-bets non-A-A-x-x hands. A 4-Bet Rng of around 2.5% indicates that this player only 4-bets A-A-x-x.

BTN Steal

The BTN steal determines how loosely this player raises first-in when on the BTN. This stat varies a lot from player to player. A standard “ABC-reg” might only steal around 35% of buttons, whereas typical LAGs tend to steal 60%+ of their hands on the button.

Fold BB to BTN Steal (FBB2BTN)

This statistic factors in when you are on the BTN and want to know how loose to play when you attempt to steal the blinds. If this stat is above 70%, you should consider stealing anytime you get the BTN.

Pop-up Stats

The following stats should be integrated in your “FBB2BTN” pop-up.

Fold BTN to CO Steal (FBTN2CO)

This stat can help you determine how loosely you can open the CO. If the BTN folds a lot to your CO steals, then you can consider stealing almost the same range on the CO as on the BTN. The lower the stat is, the stronger the range (i.e., tighter) you need to steal is. Standard FBTN2CO values are around 70%.

BTN vs. CO 3-bet (3bBTNvsCO)

This stat tells you how much the BTN 3-bets against the CO. We already mentioned that when the BTN 3-bets a lot against us in the CO, it might be an indication that we should consider leaving the table. The higher this stat is, the harder it will be for you to steal from the CO. We will learn how to push this value efficiently ourselves in one of our future lessons.

Fold SB to BTN Steal (FSB2BTN)

This stat should always be used in conjunction with the FBB2BTN. If you combine these stats, you should get a pretty good sense of how often you can steal from the BTN. Don't worry if this stat is somewhere around 80-90% for you, because the SB is simply the worst position. You will lose money when playing too many hands from there.

Fold BB to SB Steal (FBB2SB)

Considering only this stat, you will get good insight of how an opponent thinks about the game. Good regulars will have a FBB2SB stat of <10%, because you get such good odds and get to play IP for the rest of the hand. ABC-players and bad regulars will stick to a tight FBB2SB stat of often 50%+. Your SB stealing range should be determined almost exclusively according to this stat (in addition to the F2CbF stat).

Figure 17 illustrates an example FBB2BTN pop-up.

Vs. Steal	Total	BTN vs. CO	SB	BB
Fold to Steal	77	73	84	70
Resteal (3B)	7	12	6	8

Fold to Steal	
SB to BTN Stl	73
BB to SB Stl	45

Figure 17: An example of a FBB2BTN pop-up

Finally, here are stats you should consider adding to your “VPIP” pop-up:

(Positional) Raise First-In (RFI)

This value shows you the range a player raises when there was no player entering the pot before him. As you already know, an RFI from the CO, BTN and SB are called “Steals.” You should add the RFI for each position in your pop-up.

Cold-Call 3-Bet (CC3b)

This stat tells you how often a player, who hasn't invested anything into the pot voluntarily yet (so this wouldn't exclude the blinds), calls a 3-bet before him. For a good player, this value should never exceed 7%. If it does, this means that the hands this player calls with are too weak.

Limp-Fold (LF)

This last pop-up stat tells you how often a player folds, when he limps and then is faced with a raise behind him. As most PLO players want to see the flop, once they have entered the pot, don't expect to see too many players with a high value here. However, if a player with a high LF re-raises after he limps, you should definitely keep track of this. It could be the so-called "New York Back-Raise," where a player deliberately limps a monster at an aggressive table for the purpose of 3-betting it.

Figure 18 should give you some input of how your VPIP pop-up might look:

VPIP/PFR	Total	UTG	MP	CO	BTN	SB	BB
RFI	21	15	16	22	38	41	-
Cold-Call	4	-	-	4 (53)	8	7	5

	Fold	Call	Raise
limp vs. rs	31 (51)	47 (51)	22 (51)

Figure 18: VPIP pop-up

Now that you know what's on my HUD, it's your turn to think about which stats you might want to consider while considering some basic scenarios. Try to do this by solving today's exercises. Note that you might also have to consider post-flop stats as well!

Exercises

In the following pre-flop situations, what are the most important statistics you should consider before you make your decision? Why?

- 1) vs. 1 limper before us.
- 2) vs. 2 or more (2+) limpers before us.
- 3) vs. 1 raiser before us.
- 4) vs. raise + call before us.
- 5) vs. raise + re-raise before us.
- 6) Unopened in the CO/BTN.

Solutions

What are the most important statistics you should consider pre-flop, before you make your decision? Why?

1) vs. 1 limper before us

Fold2CBet Flop: Although we are talking about pre-flop statistics, it's also important to consider some post-flop statistics against single limpers to get the whole picture. The more we know our opponent folds to c-bets OTF, the lighter we can try to isolate him pre-flop.

VPIP/3-Bet of players behind: Secondly, we need to take into consideration the players behind us. We already discussed that in the earlier sections. The higher these values are, the tighter our hand ranges are when we consider trying to isolate. We should skew our range more towards hands which can play MW (i.e., when up against high VPIPs), or hands with good playability (i.e., when up against high 3-bets).

(Limp-Fold): Lastly, since many players typically call after someone limps ahead of them, I would suggest only looking at this stat when players are doing otherwise.

2) vs. 2+ limpers before us

None: This might sound strange to you. But when there are two limpers before us, we already know that the pot will almost certainly be at least 3-way OTF should we join the pot (because habitual limpers always join in when they sense a MW “family pot”). Since this already defines the range we play, there are no other stats which could change our play when there are already two limpers in the pot.

3) vs. 1 raiser before us

RFI (of the raiser): The RFI value determines how strong his opening range is. From this, we can determine how light we can 3-bet for value and/or defend our blinds. Exact adaptations will be discussed in subsequent sessions.

CBet Flop, CBet Turn: This is the first important combination of post-flop stats. These stats determine how often we can expect to see a showdown with our hand.

CBet-Fold Flop: If the CBet-Fold Flop value is very high, then we can also call more hands pre-flop. We do this with the intent of bluff-raising our opponent off the pot OTF, especially when he is c-betting a fair amount.

FoldTo3Bet, Fold2CBet 3b: Combining these two stats can also help you exploit your opponents nicely. Always use these two stats in combination. This stat set is especially useful when you are in the BTN vs. CO. You can even go into more detail by using positional FoldTo3Bet and Fold2CBet in 3-Bet Pot stats. This enables you to use even lighter 3-bets when IP.

Skip CBet and Check-Fold: If these values are very high, combined with a low c-bet frequency, then you can also use this stat set to exploit. Simply defend more hands passively with calls when players behind you are tight.

VPIP/Cold-Call 3-Bet of players behind: If these values are very high, then you shouldn't try to exploit a single raiser before you, because the pot will most of the time go MW - even when you 3-bet!

4) vs. raise + call before us

RFI (of the first raiser): This stat indicates the strength of Villain's range.

VPIP (of the cold-caller): If the RFI of the first raiser and the VPIP of the cold-caller is high, then we can consider squeezing a bit lighter for value.

4-Bet (of the raiser): This is a little less important because the 4-bet range of most people is usually limited to A-A-x-x. So it's not worth overthinking this, unless playing against a LAG or a maniac.

5) vs. raise + re-raise before us

RFI of the first raiser: This stat indicates the strength of the villain's range.

3-Bet of the 3-bettor: Only when this stat is very high should we consider making a light value 4-bet against both of these opponents.

6) Unopened in the CO/BTN

BTNFold2CO: When we are in the CO, there is only one remaining player behind us with position on us. That's why it's important to know his tendencies. If the BTN folds a lot to our CO steals, then we might loosen up and consider stealing almost our entire BTN range in the CO.

BTNvsCO3b: This stat determines how often the BTN 3-bets our CO steals. If this stat is very high, then we should consider tightening up in the CO and avoid raising hands which can't defend against a 3-bet. If this opponent is really tough, then this might be a reason to quit the table or at least switch seats, because the CO is the position where we make the second most money in poker and tightening up will decrease our win rate by a remarkable margin!

SBFold2Steal: It's always nice to know how loose the SB plays. He will always be in the worst position when going to the flop. So this statistic often determines whether the pot goes MW, stays HU, or goes uncontested.

BBFold2Steal: If the SBFold2Steal and BBFold2Steal stats are both very high (i.e., above 70%) then you should consider that a license to steal 100% of your buttons.

Fold2CBetOOP Flop: If the blinds are pre-flop calling stations, then you should also take a look on this stat. There are players who defend their blinds loosely, but are very uncertain how to play their hand post-flop and tend to fold a lot OTF.

Practice

We presented a lot of theory about stats today. You should take your time and build your own HUD and pop-ups with the stats presented here. When you feel comfortable with your HUD, then you can test it out today on the tables.

Summary

- ♠ Important Stats for Most Common Pre-Flop Scenarios

Week Two Summary

Your second week comes to an end. By now, I'm happy to tell you that you already learned all the important tools and plays that will enable you to become a solid winning player in the long run. Don't worry if you haven't received the results you are hoping for yet. You always have to remember that this is a long learning process and it will take time until you feel comfortable to apply all of these concepts at the tables. Again, I present you a check list where you can assess all the concepts you already feel familiar with and repeat those you can't yet apply clearly to in-game situations. For the latter, go back and review those that need repetition.

Day 8

- ♠ Factors that Determine Whether We Should Iso-Raise
- ♠ Refined Ranges Against Limpers
- ♠ Open-Limping

Day 9

- ♠ Adjusting Bet Sizes Pre-Flop
- ♠ Factors that Influence our Bet Sizes Post-Flop

Day 10

- ♠ How to Use Post-Flop Stats

Day 11

- ♠ Three Ranges OTF
- ♠ When to C-Bet these Ranges
- ♠ Which Stats Influence our Decision

Day 12

- ♠ Pros and Cons of X/R, Donk Bet, X/C
- ♠ Differences Between HU and MW
- ♠ Player Types / Stats that Influence our Decision

Day 13

- ♠ Calculating Equity Using Outs
- ♠ Locked vs. Unlocked Principle

Day 14

- ♠ Important Stats for Most Common Pre-Flop Scenarios

WEEK THREE

Refining Your Game

Now that your foundation is set, it's time for you to become a more dangerous player on the tables. You too can be the proverbial poker "shark," who opponents dread because you seem to always know exactly when to attack. It is all about using our HUD to detect exploits and learning additional concepts to evolve from solid TAG to the more threatening species of highly aware LAG. In-game executable math concepts, based on what we've already learned, will be the final piece of the puzzle to poker perfection for wrapping up this upcoming week.

Day Fifteen

Light Three-Betting

Do you remember that previously I recommended you leave a table when someone IP is relentlessly 3-betting you? While we hate the non-stop 3-bettor like poison, we also have to respect his bold play. Now, it's time for you to be that very player everyone at the table dreads. I will show you how to 3-bet like a maniac; but there will be method in your madness. As always, we don't want to blindly implement a new concept. Instead, we will take a look at exactly which hands and which situations are good for a 3-bet.

Introduction

Contrary to NLHE, no good PLO player makes pure bluff 3-bets. This is because your general fold equity when 3-betting in PLO is much smaller, due to the smaller equity edges pre-flop. For example, even A-A-x-x, the strongest hand in terms of hot-cold equity in PLO, only has 65% equity pre-flop against a random hand (i.e., any four cards randomly drawn from the deck). Compare this to NLHE, where A-A is an 85% favorite against a random hand and you can see why it is not a good idea to fold a lot to 3-bets in PLO.

Figure 19 shows the pre-flop equity of A-A-x-x against a random hand in PLO.



Figure 19: Equity of A-A-x-x against a random hand

Although the hot-cold equity differences may not be as large as they are in Hold'em, there are still occasions where we have to fold our hands to re-raises. That's because we aren't finished with our hand pre-flop. We still have to navigate three further (and potentially expensive) betting rounds post-flop. So if

your hand lacks hitting potential or contains a “dangler,”⁴⁷ and you are OOP, you should avoid defending these hands against a 3-bettor.

The opposite side of the coin is that you can make so-called “light 3-bets” (i.e., re-raises with hand values that may not warrant a re-raise) when *you* are IP. You might have already recognized the term of light 3-betting in your IP defending chart. Generally, you should only 3-bet light with hands that play well in HU pots, either by having the possibility of hitting a wide variety of draws or by dominating loose open-raising ranges.

We can also loosen up our 3-betting range against steals. This is because their ranges are often so loose (I guess you still remember common BTN stealing ranges...), that we have a lot of potential with hands that may dominate their stealing range or play well enough against those ranges in terms of hot-cold equity. We will now take a closer look to all of these topics in the Exercises.

Exercises

- 1) Which hand types qualify for a 3-bet against a steal⁴⁸ (player with RFI >50-55%)?
- 2) Which factors play an important role for light 3-betting?
- 3) Which hand types qualify for loose/light 3-bets?

Solutions

1) Which hand types qualify for a 3-bet against a steal (player with RFI >50-55%)?

We already know from our defending charts which hands are generally suitable to 3-bet with. What we haven't done yet is to consider adaptations against steals (which I'm sure you already noticed on your OOP defending chart). That's because it's way more difficult to play a looser range profitably in a 3-bet pot, even against a player with a wider stealing range. Now that you know the most important post-flop concepts, I feel comfortable to introduce you to looser re-steal ranges. The following should be a good range to go with:

vs. *Steal (RFI >50-55%)*: A-B-C-xds, A-B-C-Cds+, A-C-C-Cds+, A-B-B-xss+, A-T-9-8ss+, Q-Q-x-xds+, K-J-10-9ss+, Q-8-7-6ds+, 9-9-8-7ss+, 8-8-7-6ds+

Again, I don't recommend adding low rundowns for 3-betting from OOP because they simply have too little (or even negative) hot-cold equity. Even a seemingly strong rundown like 9-8-7-6ds has remarkably less equity than a borderline re-stealing hand, like 9-9-8-7ss or even Q-8-7-6ds.

2) Which factors play an important role for light 3-betting?

Here is a small overview of the most important factors to consider when making a light 3-bet:

Position: This is your most important consideration. We only want to 3-bet light IP. Never 3-bet with a light range when you are OOP, unless you have near-perfect reads on the villain's folding to 3-bet statistics.

Playability: Only consider light 3-bets with hands which have some playability. Remember, the idea behind light 3-bets is winning with a weaker range; so make sure that you can at least play on many different boards should you get called.

Effective Stack Sizes: As we learned from the previous lessons, always keep track of the stack sizes of your opponents. This also applies when light 3-betting. The bigger the stack sizes, the lighter and looser you can 3-bet. Remember that we 3-bet hands with playability, which don't necessarily have an equity edge over the range of our opponent. Therefore, we have to keep the SPR high, so that we are more likely to take down the pot without a showdown. With smaller ES, like 50bb or less, we have to skew our light 3-betting range more to hands with better hot-cold equity (e.g., hands like A-B-B-xss or K-K-x-xss).

Players Behind Us: Do you remember the third point of our five-step pre-flop plan? Before we 3-bet, we should also keep track of the players to the left us waiting to act. The reason is because we only want to 3-bet light when we can be relatively sure that we will end up either winning the hand uncontested or in a Heads-Up (HU) pot against a single opponent. So, if the players to the left of us are loose enough to cold-call 3-bets, 3-betting light is suicide.

Being Able to Continue Against 4-Bets: The good news is that you shouldn't expect to be 4-bet that often. If an ultra-tight player directly to your left, who has yet to play a pot during your session, suddenly wakes up and fires out a 4-bet, and assuming the initial raiser folds, we still might consider calling our light 3-

betting range, because we can be almost 100% certain that this player has A-A-x-x. In this case we just have to count our outs OTF against this one hand and easily know if we have the right equity to stack off (by using the method we learned on Day 13). That is also why we should avoid 3-betting light when our hands contain an Ace or a pair. Those hands can't call A-A-x-x 4-bets because they rarely hit the right type of flop to gain the needed equity against A-A-x-x. To get a better understanding of which hands can call 4-bets, I recommend you use the "PLO 4Bet Calculator," by TomGrill: <http://equitybattle.com/4bc/>.

RFI of the Raiser: There are situations where we want to push our equity advantage against looser ranges, for example when we are on the BTN and we face a loose CO open range of 35% or higher. In this case, the best play might be to add hands like A-K-9-8ss, or even A-B-x-xds to our light 3-betting range. As explained above, these are hand types which we have to fold to a 4-bet; however, they are still profitable for 3-betting against looser ranges. That's because with the A-blocker, we reduce the possibility of Villain having A-A-x-x; plus, in a looser range, there won't be that many A-A-x-x combos, so we are less inclined to fold. You should still avoid 3-betting light with pairs (which can't continue against a 4-bet and do not even contain an Ace blocker).

Fold Equity: It was previously mentioned that we make light 3-bets with hands that don't necessarily have an equity advantage over our opponent's range. This is because we should be able to rake in many pots either with the menace of the 3-bet itself or with the following c-bet. It's always good to have an eye on the "Fold to 3-Bet" (F3b) statistic as well as on the "Fold to Continuation Bet in 3-Bet Pots" (F2Cb3bP). The higher these numbers are, the more hands we can 3-bet.

3) Which hand types qualify for loose/light 3-bets?

Now that we have talked about the factors, it's time to give you some concrete examples of hands:

IP

A-B-B-xds, B-B-B-Css

6+6+6+6+ds (e.g. K-10-9-6ds, Q-J-9-7ds) C-C-C-xds -> 3 cards that connect with each other with at most 1 gap (e.g. 6-5-4-xds, K-Q-10-xds) *Against high RFI (>35%):* A-B-x-xds, A-B-B-xss, A-K-9-8ss+, Q-Q-x-xds+

OOP (only as an exploitative move against high F3b and F2Cb3bP values) A-B-P-Pss, B-B-B-xds (where PP = [Any] Pocket Pair)

Practice

1) Update the “vs. Steal” section of your OOP Defending Chart and the “Light 3-Bet” sections of both your defending charts, based on the scenarios and hands presented in the previous exercises.

2) When you play today, for each time you are dealt a hand, determine whether this hand qualifies for a 3-bet. Pay special attention to hands dealt when in the CO and BTN, in order not to miss any good light 3-bet opportunities. Try to go through all the factors that you must consider in order to make a light 3-bet. Also focus on hands dealt in the SB and BB to see if they qualify for re-steals.

3) Using your tracking software (HM2 / PT4), mark each hand where you made a re-steal, a light 3-bet, or called a 4-bet. After you have played and marked about five hands, exit the poker session.

4) Review those hands from Step 3. Compare these hands to your chart. Look at the list of 3-bet factors and verify that you have considered one or more of these factors. Be sure to highlight any factor(s) which you did not (but should have) used in your 5-hand sample.

5) For any hands that you called a 4-bet with, calculate whether calling was correct, using the 4Bet Calculator.

6) Go back and resume your session – this time focusing especially on the factor(s) you highlighted.

7) Repeat Steps 3 through 6 until you feel that you are getting used to the highlighted factors as well.

Summary

- ♠ Re-Steal Ranges
- ♠ Light 3-Betting Factors and Ranges
- ♠ Proper Reactions to 3-Bets and 4-Bets

Day Sixteen

Defending Your Blind

In the previous section, we discussed how to defend our blinds actively against steals. Today, we take a look at how we can defend the blinds, both passively and more frequently, by calling.

Introduction

Blind defense in PLO is quite a complex topic. In most Pot-Limit Omaha literature, you are instructed to maintain a very tight approach in the blinds, which is a perfectly fine strategy when starting out. I also agree that, more often than not, it's just best to cut your losses and muck your hand to a raise. However, now that we already have a good idea about solid post-flop play, we have opportunities where it is both advisable and profitable to widen our defending range.

Consider us in the BB and the player on the BTN is stealing 80% of the time. If we merely fold every time he puts in a raise, then this thief will steal even more frequently in future. As a result, we would lose 100% the amount of our big blind every time we get a hand dealt in the BB. This will result in a negative win (i.e., loss) rate of -100 big blinds per 100 hands played (-100bb/100) from the BB in the long run. That means that if we actually decide to play a hand while in the BB, we only need to lose less than -100bb/100 in the long run to already play with a better expected value (EV). However, we don't just want to just blindly play looser. That can result in huge losses, because remember we still have to get to showdown with our bad hands, which isn't always easy playing OOP. Instead, we want to take a systematic approach to play from the blinds and look at the factors which *justify* playing looser, for example, considering statistics that show us that we will often see a (cheap) showdown against a particular opponent. Also consider the following fact: against a min-raise of 2bb we get pot odds of 3.5:1 for calling in the BB. That means we only need to realize more than 22% equity for a profitable call. There is basically no realistic hand vs. hand scenario in PLO where one hand has less equity.

We have to take a couple of things into consideration before we can determine our best play. The first is the distinction as to whether we are in the small blind or the big blind. You have to think about the fundamental differences between these two spots in your next exercise. The second thing is the blind vs. blind scenario itself. This is a very special case, because the BB gets very good odds against a SB steal and has the advantage of playing IP post-flop. This justifies not folding any hands in this specific spot, considering the small equity differences between starting hands in PLO. For today, we will also complement the "Calling OOP" section of your OOP defending chart. This will be done based on the solutions of the upcoming exercises, so that all the gaps in your

charts are finally filled.

Exercises

- 1) Which factors influence our blind defending range?
- 2) Which stats make our decision easier?
- 3) Why does our SB defending range differ from our BB defending range?
- 4) How many of our hands (as a percentage) in the BB should we defend against SB steals? Why? Which hand types should we fold?

Solutions

1) Which factors influence our blind defending range?

We can loosen up our blind defending range based on the following factors:

Raising Range and Stealing Range of Villain

The more hands the villain steals against us, the more hands we can defend. This is because the villain's stealing hand range gets wider and weaker, based on the increased frequency of the villain's steals. As mediocre as your hands might be, Villain's hands are probably worse. Therefore, it's easier for us to make profit against those hands.

SPR

SPR is a topic which remains important in almost every lesson. Get used to checking the SPR before making any decision, just as discussed in our previous lessons. For example, the SPR in blind defense spots becomes important when the stealer is short-stacked. We now can 3-bet hands which we would have otherwise called, such as hands with good hot-cold equity, like A-B-B-xss.

Position of Villain

When sitting in the BB, if the villain steals from the SB and we decide to call, we will have the advantage of having position against the SB in the post-flop betting rounds. As a result, we widen our defending range *a lot* (defending >80% against SB steals is standard). On the other hand, if the villain's raise is from under the gun (UTG), we must respect this raise as one with a very strong range; so here, we should tighten up.

Our Own Hand Strength

This sounds logical enough. There are simply times where we look down at our own hand in disgust and decide our own hand strength just isn't worth wasting chips on the flop and beyond. Even an SB raise by the "worst PLO player in the world" still won't justify defending our big blind with an unplayable off-suit (i.e., rainbow) hand like $K\clubsuit-8\heartsuit-2\spadesuit-2\diamondsuit$.

SB or BB

Always bear in mind that our SB defending range should be a lot tighter than our BB defending range. In fact, the SB is the tightest defending position in PLO. We will get more into detail in Exercise 3 of this section.

HU or MW Pot

Is there only one player we have to play against? Or have several players already joined the pot? If the pot is HU, then we only have to win against one player. When we have a limped MW pot and action is on you in the SB, despite the better pot odds for calling and completing our big blind, you still need a hand that can perform well in MW pots. In this spot, you are looking for hands that have the potential to flop the best hand against multiple players, such as J-J-x-xss or Q-J-10-x.

Villain's Bet Size

The final factor is the villain's bet size. When he steals with a pot-size raise, we get worse pot odds to call; therefore, we need to win more often when we do defend. Our adaptation to this is to defend tighter, to give us a better chance to take down the pot with our stronger defending range. When Villain bets small, we can call a wider range since we are getting better odds on our call and therefore need to win less often.

2) Which stats make our decision easier?

Let's refer to your brand new HUD. These statistics serve as our decision aids. So make sure you add them to your HUD if you haven't already.

RFI: The RFI is equal to the raising-/stealing-range of Villain which we talked about in Question 1 of this section.

CBet Flop/Turn: This stat is important for our pre-flop decisions. As stated before, when in the blinds, it's all about realizing our equity by getting our hand to showdown. When the c-bet stat of the villain is really low, this means that we will see the showdown more often compared to someone who is very aggressive post-flop.

CBet/Fold: This stat describes how often Villain folds to a raise after he c-bets. If this value is very high, along with his CbF/T stat also being high, it means that we can often win the pot by check-raising him, which justifies calling more hands against him pre-flop. However, this must be tempered with the fact that you also have to consider the players behind you waiting to act.

Fold to Donk Bet: If this stat is significantly high, it means that we can often win the pot simply by betting into the villain OTF after defending pre-flop.

(FoldTo3Bet IP / Fold to Re-Steal, FoldToCBet in 3-Bet Pots): I put this one in parentheses, since this is the only situation where we actively (i.e. by 3-betting) defend our blinds. We can exploit high values of these stats by 3-betting Villain a lot. But remember what we learned in the previous exercise: don't 3-bet light when OOP! Only when these stats are heavily in your favor, should you dare to exploit them by re-stealing with a wide range.

Skip CBet IP and Fold to Turn Bet: This value determines how often Villain folds OTT after he checked behind OTF. This stat, combined with the C-Bet stat, determines if we can exploit it. For example, if the villain only c-bets 45% of flops, but has a "Skip CBet IP and Fold to Turn Bet" of 80%+, it is very profitable to defend lighter pre-flop against this type of player.

3) Why does our SB defending range differ from our BB defending range?

As previously mentioned, the SB is the tightest position to defend. A few brief points to support this statement include:

- ♠ There is still one more player to act behind us.
- ♠ Odds for calling are worse.
- ♠ The “Sandwich Effect” (remember the term relative position from Day 1) in MW pots.
- ♠ We will always be playing OOP on the flop and later streets.
- ♠ Considering all these factors, hopefully we see why there is a difference between SB and BB defending ranges.

4) How many of our hands (as a percentage) in the BB should we defend against SB steals? Why? Which hand types should we fold?

As we already learned in our previous lessons, there are very few hands that we should fold against SB steals. That's simply because we get odds of 2:1, which means we only need 33% equity with our hand to justify a call. As we know, almost every hand has at least 33% pre-flop equity in PLO (even a random hand against A-A-x-x). Additionally, we are IP. That enables us to be the ones who can outplay our opponent post-flop. I would go with an 90% defending range in the BB against a steal from the SB. Hands that I would fold are:

- ♠ Weak connected rainbow/monotone hands (e.g. K-J-6-3rb) ♠ The worst suited, non-A-high, disconnected hands (e.g. Q♠-9♦-3♥2♥) ♠ Low pairs, from 22-66 which are weak-suited (e.g. J♦-6♠-6♥2♠)

Against min-raises, I would recommend defending almost 100% of your hands (including the ones above), with the exception of freaky hole cards like trips or quads.

To summarize: against steals when you are in the blinds, *only loosen up in the BB and stay tight in the SB*. You should loosen up by defending *your BTN opening range* in the BB if one or more of the following points apply:

- ♠ Stealer is passive post-flop (<60% CbF) ♠ Steal size is ≤3bb
- ♠ Stealer has a high RFI value (>35%)

Practice

1) Fill in the gaps in your Calling OOP Chart with the information you've learned today.

2) In today's PLO session, consider your hands when in the blinds. Try to implement the concepts we have learned in this section (and the previous one) to develop an overall blind defense strategy. Each time you are in the BB and facing a single raiser, try to find appropriate arguments for calling your borderline playable hands; if you can't find justification – simply fold. Make sure you keep defending tight from the SB. Also try to take stats into consideration before you make your decision.

Summary

- ♠ Loosen Up Your BB Defending Range
- ♠ Differences Between SB and BB

Day Seventeen

Playing Double Pairs

One family of hands in PLO we haven't discussed yet are the double pairs. Today, we discuss this interesting hand type.

Introduction

Almost all of my students tend to misplay double pairs and lose more money than necessary. A lot tend to play every double pair because they assume that their chances of flopping a set are relatively high (to be exact, 23.4% or once every 4.25 hands). While that sounds very good, we must also consider that our double pairs *do not* flop sets 76.6% of the time. Without flopping a set (and no potential draw), your double pocket pairs are almost always behind after the flop. Additionally, hitting low sets (2-2-2 to 6-6-6) might be great in Hold'em, but isn't really something we should get too excited about in PLO. Imagine you open raise Q-Q-2-2 from UTG and 3 players call. The flop is 10♠-9♠-2♦. We c-bet the flop, only to get raised by someone we have tagged as loose and passive. Are we willing to stack off here? I don't think so. Another common scenario would be that we bet our set of deuces on the flop and get called in 2 spots. The turn is 7♥. Even if the nut straight draw (Q-J) didn't get there, are we really comfortable in betting a pot that is so large now that you could possibly get stacked if someone raises? And what if the turn does bring a K, an 8, or a flush card? Even a paired board with a 10 could be risky. Unlike Hold'em, where sets are extremely powerful and losing to set-over-set is quite rare, in a more volatile game like PLO, we may have to consider taking a weaker line here due to larger sets and made draws.

Hopefully, you can now see the big problem with overplaying weak double pair hands. The likelihood of losing set-over-set is much higher than in Hold'em. Even full houses can be catastrophic if the paired card on the board is higher than your set and makes someone else a boat. In general, there are few situations in which we can play these hands and bet them through Fifth Street and/or risk our entire stack against aggression. That's why we also have to be more selective about which double pairs we want to play, and also be more careful about how we play them.

Now that we know that we shouldn't defend or even open every double pair, it's time to define a playable range. When we have to differentiate between IP and OOP, and be aware of the fact that our IP range should be wider than our OOP range. We have to determine a range of playable hands that either:

- ♠ Has at least one very high pair in it.
- ♠ Consists of two middle pairs which are connected.

♠ Contains two low pairs which are connected and double-suited.

Exercises

- 1) Which double pairs should we defend against a single RFI? Divide them into top range, middle range, and bottom range.
- 2) Which of these ranges should we call, and which of them should we 3-bet
a) IP b) OOP? Why?
- 3) What do we do with our ranges when 2 or more players already joined the pot (when there was no 3-bet)?

Solutions

1) Which double pairs should we defend against a single RFI? Divide them into top range, middle range, and bottom range.

Before proceeding, it's important to classify our double pairs. The top range is all the high double pairs. Our middle range represents combinations of high and low pairs. Finally, bottom range is the low and middle connected double pairs.

Top Range: A-A-P-Pss, Q-Q-P-Pds+, J-J-8-8ss+, 10-10-6-6ds+

Middle Range: Q-Q-P-Pss, J-J-4-4ss, J-J-8-8rb *Bottom Range:* 8-8-5-5ss+, 6-6-4-4ss+, 4-4-3-3ds+

2) Which of those ranges should we call, and which of them should we 3-bet a) IP b) OOP? Why?

Now that we've defined a range of defensible double pairs IP and OOP, we should determine which of them to call and which of them to 3-bet. Again it's very important that we are able to defend knowing *why* we are preferring one option to the other.

[Table 2](#) should give you a basic idea.

	a) IP	b) OOP	
		SB	BB
Top Range	3-bet	3-bet	3-bet
Middle Range	Call	3-bet	Call
Bottom Range	3-bet	3-bet	Call

Table 2: Action matrix with double pairs based on position

a) IP

♠ We call our middle range and 3-bet our top and bottom range.

One of the reasons we call our middle range IP is that we have more possibilities to outplay our opponents IP and to control the size of the pot in case we hit our weaker set. It's also not that troublesome if the pot goes MW because we always have a high pair and flush draw to dominate a bigger field of players OTF. We 3-bet the rest of our ranges IP, because we want to create fold equity pre-flop and post-flop with our bottom range, while extracting value from our top range.

b) OOP

- ♠ We 3-bet all three ranges from the SB.
- ♠ We 3-bet our top range and call our middle and bottom range in the BB.

OOP (SB): We can't call our middle range in the SB because we can't be certain to get HU, since the BB could still call and we aren't IP post-flop. As a result, we can't control the pot well enough.

OOP (BB): Even though we aren't IP in the BB, we can still call our middle and bottom range because we always will be HU on the flop. We 3-bet our top range, for the purpose of extracting value. In addition, when we hit a set in a 3-bet pot we get potentially more pay-off, since the SPR is already smaller and therefore people will stack-off wider. The final reason is that when we 3-bet, we are HU on the flop more often and we therefore lower the risk of being dominated by higher sets.

3) What do we do with our ranges when 2 or more players have already joined the pot? (When there was no 3-bet)

- ♠ We squeeze our top range
- ♠ We call our middle range
- ♠ We call our bottom range

We raise our top range for value, call our middle range for top sets (with additional flush draw potential), and call our bottom range (only for the good odds we get) and proceed with highest caution when hitting a set.

Practice

1) Fill in the gaps of the Calling OOP section of your OOP Defending Chart with the hands that we should call in the BB. At the same time, exclude those hands that you call in the BB, but still 3-bet in the SB from your 3-betting OOP section, by drawing parentheses around those ranges.

2) Before you join the tables, get yourself a deck of cards. Take the top 2 cards then go through the deck until you pair both of these first 2 cards (this will give you variation with the suits). Put every pair on a separate pile like 2,2 or K,K and remove the other 2 cards of the same value. Repeat for as long as you have every pair on a separate pile (13 pair piles and the remaining 26 cards discarded). Now, randomly (there are a million ways to randomly generate this) pick up 2 piles to represent your hole cards. Think about the things we discussed here:

- ♠ What range is this double pair?
- ♠ What do you do with that hand IP/OOP against a single RFI?
- ♠ What do you do with this hand in a SR pot with 2 or more players?

Try to get decent accuracy with your answers until you are satisfied.

3) Join the tables and try to implement all the double pair (along with all other) concepts we have learned so far. For double pairs, note the ones that worked or did not work for you during this session.

Summary

- ♠ Dividing Your Double Pairs into Top, Middle, Bottom Range.
- ♠ Playing Double Pairs IP vs. OOP.
- ♠ Finding the Correct Plays in Certain Situations.

Day Eighteen

The Stack-to-Pot Ratio

We have been examining some more exotic post-flop concepts this week. Now, I want to wrap it up with the topic of SPRs. Stack-to-Pot Ratio is simply the ratio of effective stacks to the current size of the pot.

Introduction

In previous sections, we have discussed SPR at length and also noted that it needs to be taken into consideration on almost every street. As we know, 100bb stacks are standard for pre-flop. We are very familiar with these stack sizes because most people are playing this deep. We know that we can 4-bet any A-A-x-x hands because the SPR on the flop will be low enough to profitably stack off. As soon as the SPR gets above 150bb to 200bb, we might have to start calculating what our SPR will be OTF and if a 4-bet with blank aces is still the best play. On the other hand, if an open raiser is short, we have to consider which hands we want to 3-bet now. Speculative hands lose their value because they no longer benefit from their playability advantage. Hot-cold equity becomes more important when SPRs get lower. Hands like A-B-B-xss suddenly become good 3-betting hands because of their high card value.

Also, post-flop, there are several important SPRs in PLO. Important SPRs specify how many bets of a certain size are necessary to get all-in over different betting rounds. The three most important ones you should commit to memory are:

- ♠ *SPR 1*: There is only one pot-sized bet left.
- ♠ *SPR 4*: There are two pot-sized bets left HU (or a pot-sized bet + a pot-sized raise).
- ♠ *SPR 13*: There are three pot-sized bets left HU.

Consider that OTF, there is \$100 in the pot. If Hero bets \$100 and Villain calls, then there is \$300 in the pot OTT. Hero again bets the pot for \$300 and Villain calls. Now on the river, there is \$900 in the pot and Hero bets his last \$900 and is all-in. If we sum up all the bets of Hero then we have \$100 (flop) + \$300 (turn) + \$900 (river) = \$1,300, which equals an SPR 13 on the flop, an SPR 4 on the turn, and an SPR 1 on the river. At the same time, if Villain had raised Hero OTF and Hero called there would have been an SPR 1 OTT or Hero could have re-raised exactly all-in OTF.

Your exercise now will be to think about these SPRs and give an explanation of why they are important.

The final task for today will be to create an SPR table which we will use and discuss in detail in the next section. It will be worth taking the time and effort to

do this, as it will be something you can refer to for the rest of your poker career.

Exercises

1) Why are the SPRs (1, 4, and 13) important? Which other important post-flop SPRs do you need to know considering your own bet-sizings?

2) Specify the following SPRs: a) 0.25, b) 0.33, c) 0.50, d) 0.66, e) 0.75, f) 1, g) 1.5, h) 2, i) 3, j) 4, k) 13, l) 20 as a table containing:

- ♠ Conversions to fractions ♠ Equity needed for a break-even stack off (without FE) ♠ Pot odds

Tips

Use the Day 7 solution set for guidance in calculating pot odds and equity.
Assume a \$100 pot going into the flop.

Fraction (SPR)	Equity	Pot Odds
1/4	16.6%	5:1

Solutions

1) Why are SPRs 1, 4, and 13 important?

The following example demonstrates why these three SPRs are important to know in an in-game situation:

Imagine you are HU OTF with an SPR of 13. You are holding $A\spadesuit-A\clubsuit-9\heartsuit-2\spadesuit$ and the board is $A\heartsuit-10\heartsuit-8\clubsuit$. You bet pot-sized for value and protection and Villain calls. The turn brings the $5\clubsuit$. Now you might think that betting pot-size again might be the best play because the board is so draw-heavy and you want to protect your hand. The problem now is nearly every river card completes either a straight or a flush (34 out of 44 cards). We look at the SPR OTT and see that it is 4. We know that if we bet pot-sized here, the SPR on the river will be exactly 1 and we most likely won't know whether to value bet, to x/c, or just to x/f on most scare cards. To prevent that situation from happening, we should check with the intention of raising any semi-bluff by Villain to get all-in OTT with our massive equity edge. This assumes the villain is not a passive calling station, who would never consider bluffing a busted draw OTR. If he was, we'd simply pot-bet the turn and check to him OTR when an obvious draw like the flush completes (this is where checking the "Bet vs. Missed CBet" stat can work wonders!).

Which other important post-flop SPRs do you need to know considering your own bet sizings?

Since pot-size bets aren't always our standard sizing, it's also good to know the SPRs for other common bet sizings. Here are examples for two bet sizes I use commonly (for wet and paired boards):

3/4 pot sized bets

- ♠ *SPR 0.75*: There is only one 3/4 pot-sized bet left.
- ♠ *SPR 2.6*: There are two 3/4 pot-sized bets left (or a 3/4 pot-sized bet + a 3/4 pot-sized raise).
- ♠ *SPR 7.3*: There are three 3/4 pot-sized bets left.

1/2 pot sized bets

- ♠ *SPR 0.5*: There is only one 1/2 pot-sized bet left.
- ♠ *SPR 1.5*: There are two 1/2 pot-sized bets left (or a 1/2 pot-sized bet + a 1/2 pot-sized raise).
- ♠ *SPR 3.5*: There are three 1/2 pot-sized bets left.

You can also work out different combinations of bet sizes, like what SPR is needed to get all-in with 1/2 OTF, 3/4 OTT, 3/4 OTR and so on. Just observe your betting patterns and figure out what are the most important SPRs that best fit your game plan!

Specify the following SPRs: a) 0.25, b) 0.33, c) 0.50, d) 0.66, e) 0.75, f) 1, g) 1.5, h) 2, i) 3, j) 4, k) 13, l) 20 as a table.

Method

$0.25 = 1/4$

Pot: \$100

Villain bets all-in for \$25

$25 / ((100+25)+25) = 16.6\%$

25 for 125 = $125/25 = 5:1$ (“One out of 6 times”)

Fraction (SPR)	Equity	Pot Odds
1/4	16.6%	5:1
1/3	20%	4:1
1/2	25%	3:1
2/3	28.4%	2.5:1
3/4	30%	2.3:1
1	33%	2:1
1.5	37.5%	1.66:1
2	40%	1.5:1
3	42.5%	1.33:1
4	44.4%	1.2:1
13	48.2%	1.1:1

20	~50%	1.05:1

Practice

- 1) Print the table from Exercise 2. We will need this table for the advanced pot odds which will be discussed in the next section.
- 2) In your session today, you should focus strongly on the SPR on the flop, turn, and river. Think about how big you need to bet for value to get all-in until the turn/river. Using your table, highlight the most important SPRs, based on your typical betting patterns during your sessions.

Summary

♠ How to Use Important SPRs

Day Nineteen

Advanced Pot Odds

In this section we will discuss the most important math concept you will need for PLO. The reason why it is so important is that if you can practice and master the methodology here, you should be able to calculate the pot odds almost instantly (within 10 seconds) in any situation. If you are really good at mental arithmetic, then you will be even quicker.

Introduction

We have already completed exercises where we estimated our equity given our outs. The final step is to estimate the pot odds we are getting and compare those two values. Back in the day, my poker coach told me to always have a calculator next to me while playing to assist in calculating the pot odds. Because I didn't want to use a calculator (even online, that's too nerdy) while playing, I successfully developed my own "secret formula" for in-game executable estimations. The estimation of pot odds is quite easy and all you have to do is remember three steps: 1) Calculate "\$pot"

- 2) Relate the call/raise size to \$pot
- 3) Check results with our SPR table

As you can see, in the first two steps, you need to know the "\$pot" variable. So let's see how to calculate this magic number: $\$pot = \text{Pot before Bet} + [\text{Hero Bet (or Raise)} \times 2] + [\text{Callers}]$

Let's examine the right hand side of the equation.

Pot before Bet: The amount that's in the pot before any betting took place.

Hero Bet (or Raise)x2: Add twice the amount of the last bet (or raise) by hero.

When there was no bet or raise from Hero, then this value is 0.

Callers: When there are callers ("dead money") in the pot then you just add up the money from every call. *This variable is only considered in a MW pot. In a HU pot, this is always 0.*

That's it! Don't worry if you don't understand everything yet, we will have plenty of examples to practice. Here is one where we will use each of these variables, so that you understand the method: Pot: \$100

Hero bets \$50, BB calls \$50, CO raises to \$250, Hero? (>\$200 left) Before calling, we have go through our step process:

Calculate \$pot

To do this we need to add up the three variables listed above. The pot before Hero's bet was \$100. Hero's bet itself was \$50. The formula says we have to multiply this bet by 2, so we have $\$50 \times 2 = \100 . We have one caller (the BB), who calls \$50. Therefore, we have: Answer to 1) \$pot = $\$100 + \$100 + \$50 = \250

Relate your call/raise size to \$pot

The second step is to relate the size we are going to call or raise to \$pot. In this case we want to call, therefore we have to relate the call size, which is \$200 to \$pot: Answer to 2) $\frac{\$200}{\$250} \geq 34$ (i.e. is a little bigger than 3/4)

Check results with our SPR table

The final step is to decrypt our result “3/4”. This is where we need our SPR table created in the previous section. 3/4 is the “Fraction (SPR)” of our SPR table. The SPR table tells us that 3/4 means that we need 30% equity. Due to the fact that 200/250 (0.8) is more than 3/4 (0.75), we know that we will need a little more than 30% equity.

If you are bad with math, then simply judge that 200 is less than (1 times) 250 and you come up with the result that we need <33% for a stack-off. With this method, we are deviating away from the mathematically correct answer, but you should still end up with a usable result. By the way, the mathematically correct answer in this case would be $200 / ((100+50+50+250)+200) = 30.8\%$

And that’s it! Now it’s time to practice.

Exercises

1) Pot: \$35

Hero bets \$35, Villain raises to \$126 and is all-in, **Hero?** (\$62 left)

- a) How much equity does Hero need for this call?
- b) How can we estimate it?

2) Pot: \$15

Villain bets \$15, **Hero?** (\$47 left)

- a) How much equity does Hero need if he wants to raise all-in? (without FE)
- b) How can we estimate it?

3) Pot: \$15

Hero bets \$15, Villain raises \$30, **Hero?** (\$47 left)

- a) How much equity does Hero need if he wants to raise all-in? (without FE?)
- b) How can we estimate it?

4) Pot: \$10

SB bets \$5, BB calls \$5, UTG calls \$5, Hero raises to \$15, SB calls \$10, BB raises to \$50, UTG calls \$45, **Hero?** (\$35 left)

- a) How much equity does Hero need for this call?
- b) How can we estimate it?

Solutions

1) Pot: \$35

Hero bets \$35, Villain raises to \$126 and is all-in, **Hero?** (\$62 left)

a) How much equity does Hero need for this call?

i) \$62 for \$70 (pot) + \$97 (Villain all-in)* = \$62 for \$167

$167/62 = 2.7:1$ (win 1 out of 3.7) = $1/3.7 = 27\%$

ii) $62 / ((35+35+97) + 62) = 27\%$

**Note that we have to take the ES (Hero's \$62) into consideration*

b) How can we estimate it?

1) \$pot = \$35 (Pot before Bet) + \$70 (Hero Bet × 2) = \$105

2) $62/105 \leq 2/3$

3) $\leq 2/3 \leq 28.4\%$ equity

2) Pot: \$15

SB bets \$15, **Hero?** (\$47 left)

a) How much equity does Hero need if he wants to raise all-in? (without FE)

i) \$47 for \$15 (pot) + \$47 (SB Bet + Call of Hero all-in) = \$47 for \$62 $62/47 = 1.3:1$ (win 1 out of 2.3) = $1/2.3 = 43\%$

ii) $47 / ((15+15)+47+32) = 43\%$

b) How can we estimate it?

1) \$pot = \$15 (Pot before Bet)* = \$15

2) $47/15 > 3$

3) $> 3 > 42.5\%$ equity

**Note that the Hero Raise is 0 here, because Hero hasn't raised yet*

3) Pot: \$15

Hero bets \$15, SB raises to \$30, **Hero?** (\$47 left)

**a) How much equity does Hero need if he wants to raise all-in?
(without FE)**

i) \$32 for \$30 (pot) + \$47 (SB all-in) = \$32 for \$77 $77/32 = 2.4:1$ (win 1 out of 3.4) = $1/3.4 = 29\%$

ii) $32 / ((15+15+30)+32+17) = 29\%$

b) How can we estimate it?

1) \$pot = \$15 (Pot before Bet) + \$30 (Hero Bet × 2) = \$45

2) $32/45 > 2/3$

3) $> 2/3 > 28.4\%$ equity

4) Pot: \$10

SB bets \$5, BB calls \$5, UTG calls \$5, Hero raises to \$15, SB calls \$10, BB raises to \$50, UTG calls \$45, **Hero?** (\$35 left)

a) How much equity does Hero need for this call?

i) \$35 for \$10 (pot) + \$5 (SB bet) + \$5 (BB call) + \$5 (UTG call) + \$15 (Hero raise) + \$10 (SB call) + \$45 (BB raise) + \$45 (UTG call) = \$35 for \$140 = 4:1
(win 1 out of 5) = $1/5 = 20\%$

ii) $35 / ((10+5+5+5+15+10+45+45)+35) = 20\%$

b) How can we estimate it?

- 1) \$pot = \$10 (Pot before Bet) + \$15*2 (Hero Raise × 2) + \$5+\$5+\$10+\$45 (Callers) = \$105
- 2) $35/105 = 1/3$
- 3) $1/3 = 20\%$

By looking at these exercises you might also understand now why we need small SPRs like 1/3 as well as higher SPRs like 3 in our SPR table.

Practice

You have just finished an admittedly very difficult math lesson! Remember, mastering this method for the estimation of equity requires a lot of practice. But if you put in the effort, you will see the payoff. Don't rush to the tables yet with this new method.

Summary

♠ Calculating Needed Equity In-Game

Day Twenty

Four-Betting Non-A-A-x-x Hands

We are almost at the end of Week 3. By now, you should know all the basics of pre-flop play. This is a good time to add one more concept into our pre-flop “bag of tricks.” It’s time to move away from only 4-betting A-A-x-x in response to our opponent’s 3-bet.

Introduction

When we face a 4-bet in PLO, we usually have to assume that the range of our opponent almost exclusively consists of A-A-x-x. It's fine for us as well to start off by limiting our 4-betting range to the best hand in PLO, especially if we are not certain how we can change this specific part of our game plan.

When we learn about advanced 4-betting in this section, it's important to know which hands have an equity advantage when considered hand-vs-hand. For demonstration purposes, I will use the PokerStrategy Equilab again. The goal is to find ranges which have an equity advantage against the 3-betting range of our opponent. In the upcoming exercise, it will be your turn to find 4-betting ranges to counter the Villain's 3-betting ranges.

Before we start our calculations, we should take a look at how programs like Equilab calculate percentage inputs. Remember, if we want to calculate our equity against, let's say, someone with about a 12% 3-betting range, then we can't just blindly input "12%" in Equilab. That's because no player in PLO 3-bets exactly the top 12% (in terms of raw pre-flop equity) of hands. As we know from our own strategy, we also 3-bet rundowns like 7-6-5-4+, 8-7-6-4+, 9-8-6-5+ or 10-8-7-6+. Just recognize that a hand like K-K-8-6rb has more equity than a hand like J-10-9-8ds. Even hands as weak as A-Q-4-4ss or K-K-K-9ss are considered stronger than a rundown like 7-6-5-4ds. That said, given the choice between J-10-9-8ds or K-K-8-6rb, I think you know which hands people prefer to 3-bet more frequently. In addition to rundowns, iso-raise hand types like B-B-B-xds are often in Villain's 3-betting ranges. So, for our hand range estimation of a player we have pegged at a 12% range, we want to consider reducing the number of actual top 12% equity hands to a lower percentage, while replacing these with other types of hands observed during actual play. This establishes the specific player's actual 12% range.

[Note: If you have problems with the syntax of Equilab you can check it via Help -> Syntax documentation and samples.]

Exercises

- 1) Specify a non-A-A-x-x 4-betting range against a 3-betting range of a) $\geq 8\%$, b) $\geq 12\%$, c) $\geq 16\%$, d) $\geq 20\%$, e) $\geq 30\%$
- 2) Why are hands like 8-7-6-5ds, J-10-9-8ss good hands to 3-bet with, but bad to 4-bet (assume you have a 100bb ES)?

Solutions

1) Specify a non-A-A-x-x 4-betting range against a 3-betting range of a) $\geq 8\%$, b) $\geq 12\%$, c) $\geq 16\%$, d) $\geq 20\%$, e) $\geq 30\%$

As mentioned in the introduction, we want to incorporate other hand types (e.g., lower equity hands we observed at showdown, and other “classic” speculative hands players love to play), not just the specific hands within a defined range. I will demonstrate one example of how I calculate these ranges. The goal is that we have $>50\%$ equity against the final calculated range, so that we can be sure we are ahead, even without the need of FE.

If we want to calculate our equity against a $\geq 8\%$ 3-betting range, the approach is as shown in *Figure 20*:

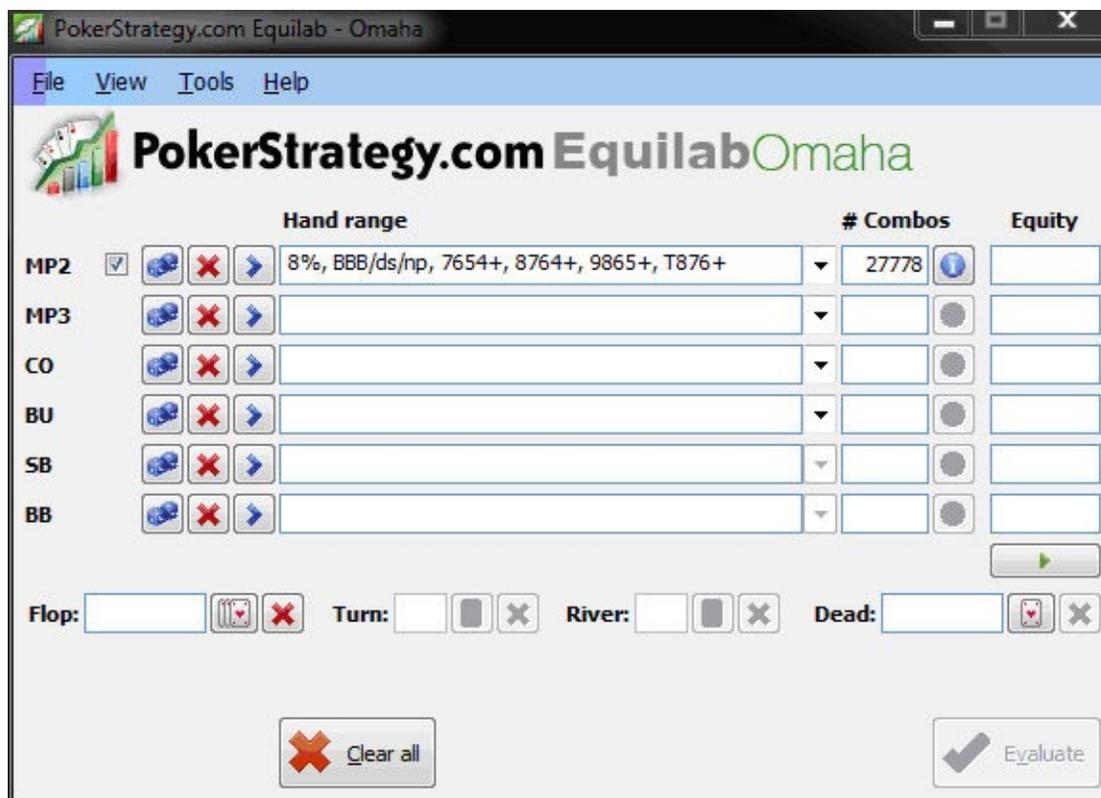


Figure 20: First steps of determining a general 8% 3-betting range

This figure illustrates an 8% 3-betting range for an imaginary player. We enter the standard “8%,” plus the expected rundown range and other hands (*BBB/ds/np*)⁴⁹ players tend to be 3-betting. Overall, we get a little over 27k combinations. When we delete the “8%” for “MP2 Hand Range,” we now have 9k combos left.

We then calculate the Standard 8%/Rundown ratio of: $27/9 = 3$. The inverse ($9/27$) tells us that about $1/3$ of MP2’s 8% 3-betting range consists of rundowns and other weaker hands, which represent lower-ranking standard hands (in terms of hot-cold equity). Now we want to determine what proportion of rundowns replace hands like K-K-8-6rb from the standard 8% range: Dividing 8%, by our ratio 3, we get 2.6%. That means we have to remove 2.6% from the 8% range: $8\% - 2.6\% = 5.4\%$. As a result of these calculations, we have determined that this player has a final range specification as follows: *Top 5.4%, BBB/ds/np, 7-6-5-4+, 8-7-6-4+, 9-8-6-5+, and 10-8-7-6+*.

Now we just have to run different types of hands against this range (and the other ranges in our exercise set) to see when we have more than 50% equity (in addition to A-A-x-x, which we already knew from before and do not need to calculate here).

Light 4-Betting Table	
3-betting Range of Villain	Light 4-betting Range of Hero
Vs. $\geq 8\%$	A-K-K-xss+, K-K-5-4ds+, A-K-Q-Qds, A-B-B-Bds
Vs. $\geq 12\%$	A-Q-Q-xds, K-K-x-xds, K-K-9-8ss, Q-Q-J-Jds
Vs. $\geq 16\%$	K-K-x-xss, K-K-9-8r+, A-B-B-xds, A-B-B-Bss
Vs. $\geq 20\%$	K-K-x-xrb, Q-Q-x-xds, A-Q-Q-xss, A-J-J-xds, A-K-x-xds, A-B-M-Mds ⁵⁰ , A-10-9-8ds+, B-B-B-Bds
Vs. $\geq 30\%$:	J-J-x-xss, 10-10-x-xds, A-10-10-xss, A-x-x-xds, A-B-M-Mss, B-B-B-xds, B-B-B-Bss, A-B-B-xss

Table 3: Hands we can 4-bet light with (based on opponent with an 8% range)

Please note that in book notation, “B” means “10, J, Q, or K” (In Equilab B = J, Q, K or A).

Why are hands like 8-7-6-5ds, J-10-9-8ss good hands to 3-bet with, but are bad to 4-bet? (100bb ES)

As you might have noticed during the first exercise, these hands don't have an equity advantage – even against a loose range. That's why they don't fare well with a low SPR in 4-bet pots. However, 3-betting and calling 3-bets with these types of hands is fine, because they are very well defined OTF and play best with an SPR of 4 or higher.

The final point is that if you 3-bet with a hand like 8-7-6-5ds, and get 4-bet, you can conveniently call the 4-bet. That way, you don't have to worry about making tough decisions whether to call or fold when faced with a 4-bet situation. To refresh your understanding of which hands can call 4-bets, I recommend you use the “PLO 4Bet Calculator” – see Day 15.

Practice

- 1) Copy the solutions to Exercise 1 and print it out.
- 2) Whenever you face a 3-bet in today's session, use this printout as your guide in deciding if your hand is good enough to 4-bet against that range. Keep in mind that you should have a good enough sample of villain's 3-betting range to prevent you from 4-betting too thinly!
- 3) Each time you get 4-bet in this session, and you aren't sure whether you made the right call (or fold) with your hand, note that hand. After your session, calculate whether calling was correct, using the 4Bet Calculator.

Summary

♠ Hands Other Than A-A-x-x You Can 4-Bet

Day Twenty-One

Taking Notes

A flaw for most players, especially when they are either multi-tabling, playing fast-fold poker (e.g., PokerStars Zoom Poker), and/or some other reason they are in auto-pilot mode, is that they fail to take notes during their sessions. This is unfortunate, as by not doing this you would be throwing away money. In this section we will discuss methods for taking useful notes.

Introduction

Nearly every online poker software and tracking program allows you to write notes about your opponents at the table. Numerous “apps” solely for note-taking are also available. Nevertheless, few people take advantage of this powerful feature for developing reads on their opponents. I often ask my students why they aren’t taking notes more often. Most of them simply don’t have a proper system for notes or are too distracted “multi-tasking” between playing online poker, watching television and looking at their Facebook profile. Some are simply too lazy to write them down because they would rather just play. At the opposite end of the spectrum, there are players who do take copious notes, but these notes are of little value, as they contain large amounts of information with no structure or organization.

Notes can be incredibly powerful when you know what to look for and how to organize them for fast retrieval. Of course, there are many different ways to do this and I will show you one of the better ways which, incidentally, is my own approach.

There is a basic template I use for each player:

General Leaks / Exploits:

1) <First General Leak/Exploit>

Pre-Flop:

1) <First General Pre-Flop Note>

Flop:

1) <First General Flop Note>

Mono:

1) <First Note for Mono Flops>

Paired:

1) <First Note for Paired Flops>

3-Bet:

1) <First Note for 3-bet Pots Flop>

Turn:

1) <First General Turn Note>

River:

1) <First General River Note>

At first sight, this might seem like a lot of information; however, it is very logically structured. You should have no problem finding the point in the hand where you are at that moment, and then recording the information you need about that point in a timely fashion. Also remember that it might be useful to keep track of the number of times a player repeats this specific action. If you like, you can customize this template. For example, if you think you want to know more details about players' ranges, like which hands they limp/raise/3-bet from certain positions, then you could add all the different positions to the pre-flop note section and write down those hands you saw at showdown. This might help you determine your 4-bet range against certain players. Be creative and think about the information you need the most to win pots and win money.

Exercises

For each part of the template, give examples of player notes which you think could best help you in future encounters with that player.

- a) General Leaks/Exploits
- b) General Pre-Flop Notes
- c) General Flop Notes
- d) General Turn Notes
- e) General River Notes

Solutions

For each part of the template, give examples of player notes which you think could best help you in future encounters with that player.

This is a sample solution of how a set of notes for a certain player could look like:

Name: Fuzzynuts46

a) General Leaks/Exploits

- 1) Passive Fish
- 2) Plays draws mostly passive
- 3) Strong when he chats
- 4) Fast check = weak (2x) [where x is each time you observed the behavior]

b) General Pre-Flop Notes

- 1) Limp/raises A-A-x-x (2x)
- 2) Squeezes dry K-K-x-x
- 3) 4-bets 4-5-6-7ds (@100bb+)

c) General Flop Notes

- 1) Check/pot-raise nuts
- 2) Check/min-raise strong draws (3x)
- 3) Check as PFA = Give up (2x)

d) General Turn Notes

- 1) Check Boat after x/r Flop Set

e) General River Notes

1) 3rd barrel \$6 in \$16 = Weak two pair 2) Donk bet 1/2 on scare card = Bluff 3) Pot donk bet = Nuts Considering this example, there are several major things which we can't quantify with statistics, but only with observations and notes:

- ♠ Bet sizing (tells)
- ♠ Behavior on specific board textures
- ♠ Exact hand ranges
- ♠ Timing tells

Practice

With the advice from this section, develop your own method for taking notes that best fits your game. Try to anticipate reads from your opponents which fall into one of the above mentioned categories.

If you become a regular enough player, then you will often be playing against the same players in numerous sessions. When you develop your database of Villains (i.e., “rogue’s gallery”), you will be able to look up these very same villains at your table.

1) During your session, when it looks like you are going to be HU with a specific player, look at your notes, the data on hands this player showed down with, and then try to play your hand in a way that exploits these reads. Did the hand play out based on the same read/leak? If it did, make a note about it (as you watch the pot drag towards you). There is no greater feeling in poker than winning a pot based on knowing exactly what hand you were up against, which was only possible through efficient note-taking and making informed reads of your opponents. If the hand played out differently to how you expected from your notes, then make a note of that too. What makes the best PLO players so hard to play against, is that they change gears and may play the same exact situation in different ways!

2) Once you have a big enough sample on a player you face regularly, you might even filter your database for hands this player showed down. Analyze these hands and write down notes for this player when you observed a distinctive play. This way you don’t have to shift focus while playing at the cost of taking notes.

Summary

♠ Taking (the Right) Notes

Week Three Summary

You made it through Week 3! Do you already sense the fear of your opponents on the tables when they have to play against you? Honestly speaking, I know you had a lot to learn up to this point. So feel free to refresh, if you haven't completely caught every point we've learned. If you feel you have mastered Week 3, per the checklist below, then you have my permission to move on to your final week.

Day 15

- ♠ Re-Steal Ranges
- ♠ Light 3-Betting Factors & Ranges
- ♠ Proper Reactions to 3-Bets and 4-Bets

Day 16

- ♠ Loosen Up Your BB Defending Range
- ♠ Differences Between SB and BB

Day 17

- ♠ Dividing Your Double Pairs Into Top, Middle and Bottom Range
- ♠ Playing Double Pairs IP vs. OOP
- ♠ Finding the Correct Plays in Certain Situations

Day 18

- ♠ How to Use Important SPRs

Day 19

- ♠ Calculating Needed Equity In-Game

Day 20

- ♠ Hands Other Than A-A-x-x You Can 4-Bet

Day 21

♠ Taking (the Right) Notes

WEEK FOUR

Advanced Concepts

Today starts your final week of mastering PLO. If you understood everything presented so far, you should have developed a somewhat solid game by now. From here, we will delve into some advanced topics.

Day Twenty-Two

Fold Equity

Today, we will take a look at fold equities. If math makes you squeamish, the good news is we don't have too many more math topics. We are almost there.

Introduction

Imagine you are HU OTF as the PFA with your bottom range. The board is relatively dry and your HUD tells you that your opponent folds on average 55% to c-bets. Now, wouldn't it be nice to know if you have auto-profit with a 3/4 pot-sized c-bet.

Another scenario would be that you are on the river and your big draw missed. Villain bets half the pot. Again, how great would it be to know how much fold equity you need on average to make a pot-sized bluff raise profitable?

This is where the power of considering fold equity in your decisions comes in. Keep in mind that not only the "F2Cb" stat determines your FE. There are additional, even more important, factors like the board texture, your bet size, number of players in the pot and the remaining SPR. Your FE increases:

- ♠ The bigger the "F2Cb" stat is ♠ The dryer the board texture is ♠ The bigger you bet
- ♠ The less players are in the pot ♠ The bigger the SPR

Only combining all of these factors will enable you to fully estimate your actual fold equity in a spot. There are some nice fold equity calculators available for free on the web simply by doing a Google search. By using one of these calculators, you should be able to do the following exercises. I recommend you experiment using different sizes to get a feeling for the fold equities.

For the calculations in these exercises, you can use the equity calculator; or, simply use the mathematical methods which we already examined previously.

Exercises

1) How much fold equity do we need for a profitable a) pot-sized bluff, b) 3/4 pot-sized bluff, c) 2/3 pot-sized bluff, d) 1/2 pot-sized bluff?

2) The pot is \$20 and Villain fold to c-bet is 45%.

What is the maximum bluff c-bet we can make to still make auto-profit in this spot (given only his fold to c-bet statistic)?

3) The pot is \$100 and Villain bets \$70, Hero raises to a) \$310, b) \$225, c) \$155

How much fold equity does Hero need in this spot for a profitable pure bluff raise?

4) What is the general pattern we observe here (considering fold equities for pot-sized bluff raises, 3/4 pot-sized bluff raise, 1/2 pot-sized bluff raise)?

Solutions

1) How much fold equity do we need for a profitable a) pot-sized bluff, b) 3/4 pot-sized bluff, c) 2/3 pot-sized bluff, d) 1/2 pot-sized bluff?

a) *e.g.* \$100 bet in \$100 pot: $((100 / (100)+100) = 50\%$ FE

b) *e.g.* \$75 bet in \$100 pot: $((75 / (100)+75) = 43\%$ FE

c) *e.g.* \$66 bet in \$100 pot: $((66 / (100)+66) = 40\%$ FE

d) *e.g.* \$50 bet in \$100 pot: $((50 / (100)+50) = 33\%$ FE

2) The pot is \$20 and Villain fold to c-bet is 45%.

What is the maximum bluff c-bet we can make to still make auto-profit in this spot (given only his fold to c-bet statistic)?

This is an analogous approach to Exercise 1). This time, only the variables change: \$x bet in \$20 pot: $x/(x + 20) \geq 0.45$

The rest is just transforming the inequality: $0.45 \times (x+20) \geq x$
 $0.45x + 9 \geq x$
 $9 \geq 0.55x$

$$x \leq 9/0.55$$

$$x \leq \$16.36$$

So we can bet up to \$16.36 to make an auto-profit in this spot.

3) The pot is \$100 and Villain bets \$70, Hero raises to a) \$310, b) \$225, c) \$155

How much fold equity does Hero need in this spot for a profitable pure bluff raise?

a) $310 / ((100+70)+310) = 64.5\%$

b) $225 / ((100+70)+225) = 57\%$

c) $155 / ((100+70)+155) = 48\%$

4) What is the general pattern we observe here (considering fold equities for pot-sized bluff raises, 3/4 pot-sized bluff raise, 1/2 pot-sized bluff raise)?

The smaller Villain bets, the less fold equity we need for our raise.

For a pot-sized bluff raise we need around 65% FE.

For a 3/4 pot-sized bluff raise we need around 57% FE.

For a 1/2 pot-sized bluff raise we need around <50% FE.

Practice

If you haven't already, then you should find some time to play around with different fold equities using the fold equity calculator of your choice. When you feel confident, you should also think about fold equities when you consider c-betting your bottom range. Keep in mind that you almost always have at least some kind of equity when you bet, even with your absolute bottom range (The old adage is, "You bet. You win"). Try to find out how much fold equity you need for your bet sizes; and, if you have that fold equity, considering the board structure and the villain's Fold to C-Bet stat.

Summary

- ♠ How to Calculate and Estimate Fold Equity

Day Twenty-Three

Wraps: Knowing Your Outs

A wrap is one of the strongest draws in Pot Limit Omaha. If you are new to Omaha, you should note that these types of draws don't exist in Texas Hold'em. In this section, we will learn about different wraps in Omaha and how many outs they give. This will help you minimize the time you need to count your outs for further calculations, like pot odds and implied odds.

Introduction

Wraps are basically very powerful straight draws. They have between 9 (“inside-wrap”) to 20 (“double-wraparound”) outs. They are called wraps because they “wrap” two of the cards on the board that you need for the straight. An example for a wrap would be $Q♥J♥8♥x$ on the board $10♠-9♦-2♣$. In this example we have a 17-out wrap: $K♠, K♣, K♥, K♦, Q♠, Q♣, Q♦, J♠, J♣, J♦, 8♠, 8♣, 8♦, 7♠, 7♣, 7♥, 7♦$ gives us the straight.

This might look really time-consuming to count during a hand. That’s exactly why it’s useful when you can immediately determine your outs by just looking at the draw’s structure. Note that we also have to consider discounted outs (also known as “douts”). For example, if the board is $10♠-9♠-2♣$, we would have to discount (eliminate) the draws to the flush – $K♠, Q♠, J♠, 8♠, \text{ and } 7♠$ (especially when MW). In this example, we would only have 12 clean outs left. This demonstrates why flush draws are the biggest enemy of straight draws and why pure straight draws (without a pair or any other extra draws) should be played cautiously on flush draw boards.

The following exercises will give you some insight of how strong certain wraps are, compared to others.

Exercises

- 1) Which kind of wraps do you know about? Give an example for each distinct kind of wrap (distinct in respect to their (nut) outs).
- 2) How many outs do they have? How many of them draw to the nuts? How many outs do you have to discount when there's a flush draw out?

Solutions

The solution, presented in [Table 4](#), has the following structure: The first two columns are the hero hand and the meaningful part of the board. The third column displays the outs of the wrap with the nut outs in parenthesis. The last column shows how many outs we have left if there is a flush draw out there, again with the nut outs in parenthesis.

Hand	Board	Outs (Nut Outs)	Douts (Nut Outs)
Q-J-8-7	10-9-x	20 (14)	14 (10)
Q-J-8-x	10-9-x	17 (11)	12 (8)
10-7-6-x	9-8-x	17 (7)	12 (5)
K-Q-J-8	10-9-x	16 (16)	11 (11)
J-9-8-6	Q-10-7	16 (6)	11 (4)
10-9-7-x	8-6-x	13 (13)	9 (9)
8-7-5-x	9-6-x	13 (7)	9 (5)
7-5-4-x	8-6-x	13 (3)	9 (2)
9-8-7-x	10-6-x	9 (9)	6 (6)

Table 4: The wraps with their outs, douts, and nut outs

When we take a look at the nut outs, we see why 1) low cards and 2) top gaps are especially bad in PLO. They have very little domination potential, since they rarely draw to the nuts when they complete.

Practice

Get a deck of cards and place two cards of a wrap (for example 10♠-9♥) in front of you. Then sort out all the hearts of the deck and complete the wrap in various directions and guess how many outs you have, and how many are to the nuts. When you are done, change the cards of the board (for example, to 9♠-6♥) and repeat the drill. At the same time, you can learn how many outs you would have to discount if a flush draw was out.

Summary

- ♠ Recognizing Number of Outs/Douts/Nut Outs of Wraps

Day Twenty-Four

Further Use of Your HUD and Pop-Ups

As you might have guessed, statistics are very important in PLO. You should thus aim to be a player who works a lot with statistics. Today, I will introduce you to the advanced use of the HUD with pop-up stats.

Introduction

The HUD is a very powerful tool when you know how to use it effectively. The more effort you put into creating and applying your HUD, the more value you will get from it (as measured by your bottom line). In this section, I want to explain how I use the HUD and associated pop-up stats to help increase my edge. Today should be the day where you are experienced enough to be able to make proper use of these stats as well. Feel free to rebuild what you see in the screenshots and tailor it to your own needs.

Color coding

You can see my HUD in *Figure 21*, I use five different colors in my HUD (although you can't see them here). This helps me to see quickly both obvious pre-flop and post-flop leaks of my opponents, and how pronounced these leaks are.

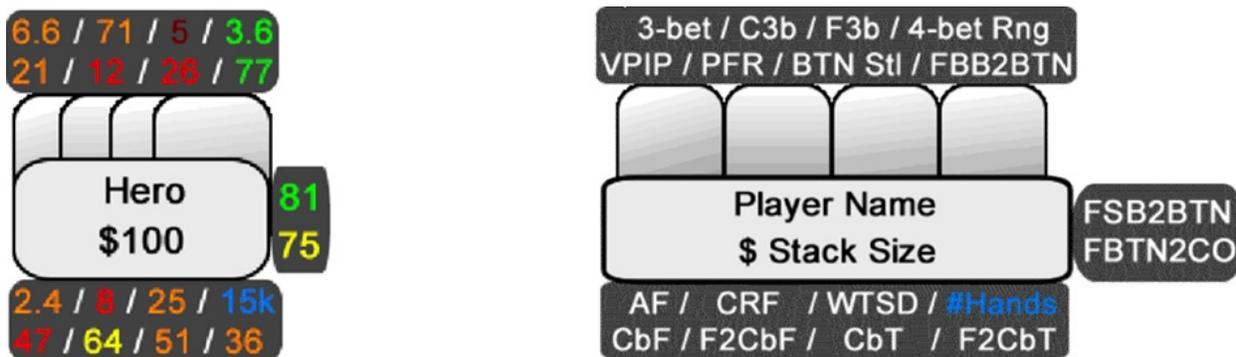


Figure 21: The final HUD (left) with the description of the stats (right)

I use colors for ranking as follows (relative to average/good values): *Dark Red*: Very Low *Red*: Low
Orange: Average *Yellow*: High
Green: Very High

PokerStars Players Note: Since Oct 1st 2015, the HUD used for PokerStars may no longer contain more than three different colors. As an adjustment, I created a modified HUD version with only three different stat colors (red, orange, green).

In this example, Hero folds 77% of his hands in the BB when facing a BTN steal. This value would be green, and green means GO, we should steal almost every hand from the BTN when this player sits in the BB. Also consider this player's Fold SB to Button Steal (FSB2BTN) value. It is 81% and would also be marked green. When you have a player in the SB with a green fold SB to BTN steal and another player in the BB with a green fold BB to BTN steal, then they are *begging* you to steal their blinds with any four cards from the BTN. You could even go further: when you are in the CO and first in, then you could also consider the Fold BTN to CO Steals (FBTN2CO) value, which in this case is 75% (this would be in yellow). Yellow tells us that it's not like you can steal exactly with your BTN range from the CO here (which I would do if this value was also green), but you can definitely widen your CO stealing range. In this case, whenever the value of this stat is yellow, you might also take a look at his 3-bet BTN vs. CO stat, which leads us to the first pop-up. When I click on the 3-Bet stat, then the pop-up illustrated in [Figure 22](#) opens, giving me detailed insight to this player's 3-betting tendencies.

3-Bet	Total	EP	MP	CO	BTN	BTN vs. CO	SB	BB
3-Bet	6,8	-	12,8 (47)	7,0	8,9	13 (72)	4,8	5,9
3-Bet vs. Hero Pos								
Squeeze	7							
3-Bet is AA	19 (26)					Resteal vs. Hero		

Figure 22: The 3-bet pop-up

In this case, this player would 3-bet 13% in BTN vs. CO situations. Remember, he defends only 25% of the time, but 3-bets 13% of the time when he does defend. This information would lead me towards a tighter stealing range from the CO against this player, and mostly steal with hands that are strong enough to call 3-bets OOP. Squeezes in PLO are usually very strong hands, almost as A-A-x-x-heavy as 4-betting ranges, simply because there is barely any FE in PLO when squeezing, compared to NLHE. There are, however, players like the one in [Figure 22](#), who squeezes 7% of his hands. So we might even 4-bet hands that play well against that squeezing range, as we learned on Day 20.

I've developed another important pop-up when clicking on either the VPIP or the PFR value of a player:

POS	TOTAL		EP		MP		CO	
	Defend	Raise	Defend	Raise	Defend	Raise	Defend	Rais
Unopened	1	30	0	16	0	19	0	41
Limper(s)	30	19	-	-	19	19	29	26
Raised	24	7	-	-	15	5	19	8
Re-Raised	6	1	-	-	-	-	6 (97)	0 (97)

	Fold	Call	Raise
limp vs. rs	20 (82)	78 (82)	2 (82)

Figure 23: An extract from my VPIP/PFR pop-up for every position

Here I get information about how this player approaches all different pre-flop situations such as: unopened pot; with one or more limpers before him; and, with raised and re-raised scenarios. You can see the details for every position which helps to define his range for almost every kind of situation. I also integrated his reaction to raises after he limps in this pop-up.

Another useful post-flop pop-up appears when I click on the C-Bet Flop stat, per [Figure 24](#). It helps me to determine if there are any leaks this player has when he is the PFA.

CBet	Total	Normal	3Bet	HU (1)	Multiway (3)	Multiway (4+)
CBet	68	68	67	86	48	22 (81)
CBet IP	69	68	73			
CBet OOP	67	68	63			

CBet vs. Raise	Total	Normal	3Bet
CB-Call	34	27 (78)	47 (38)
CB-Reraise	25	24 (75)	26 (27)
CB-Fold	45	50 (78)	34 (38)

Skip CB OOP and	Total	Normal	3Bet
Check-Call	15 (95)	11 (64)	23 (31)
Check-Raise	6 (94)	0 (64)	20 (30)
Check-Fold	79 (95)	89 (64)	58 (31)

Skip CB IP and	Total
Call Turn Bet	43
Raise Turn Bet	4
Fold to Turn Bet	53

Figure 24: My CBF pop-up

Again, in my set-up I have color-coded the most important stats with the above-mentioned color-coding system. For this player, you would see a green check-fold value when he doesn't c-bet OOP, while c-betting 67% from OOP in total. Exploiting this kind of player is very easy. Just bet every time he (as the PFA) checks to you and you will make auto-profit.

The last pop-up I want to show you is illustrated in [Figure 25](#). It opens when clicking on the Fold to C-Bet Flop stat.

Flop CB vs Raise			Donk Bet vs Raise		3-Bet	Multiway
CB-Call	34		Donk Bet	24	15	28
CB-Reraise	25		Donk-Call	43 (14)		
CB-Fold	45		Donk-Raise	30 (10)		
			Donk-Fold	36 (14)		

Flop vs CB	IP	OOP	3-Bet	vs Donk Bet
Call CB	42	28	35	Call Donk 35,0
Raise CB	13	10	20	Raise Donk 19
Fold to CB	46	63	45	Fold to Donk 47
Bet vs. Missed CB	47	28	49	

Figure 25: My F2CbF pop-up

This pop-up covers everything when you are the PFA and you want to know the behavior of this player when facing a donk bet. In this case, the Fold to C-Bet value from OOP is 63% and would be marked green. Therefore, you should almost always c-bet when this player is OOP and you are the PFA (e.g., when you steal from the BTN and Villain calls from the blinds). You also won't face a lot of pressure from this player when you don't c-bet. That's because his Bet vs. Missed C-Bet values are red and therefore very low.

Overall, I use 16 individual pop-ups, which I can consult for detailed information of almost every statistic in the HUD. If you are interested in acquiring my HUD and/or the pop-ups please see

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Exercises

- 1) Try to include color-coding in your current HUD in order to be able to indicate your opponents' obvious leaks.
- 2) Look over the statistics lessons and write down all stats which were considered important.
- 3) Try to incorporate those statistics in pop-ups for the stats which fit them best. Try to also include positional stats for pre-flop and distinctions between IP and OOP post-flop.

Solutions

There is no right or wrong solution for these exercises. Just figure out what works best for you. Creating a HUD is a time-consuming process. If you do it on your own, then you should create it gradually and incrementally. Refining it on a weekly or even on a daily basis is the key. Over time, you will get a better feel for standard values for all your stats and how to correctly set the color codes.

Practice

You should practice using your HUD every time you play a session. Have a sheet of paper or a blank notepad document handy while playing and make notes on how to adapt certain color values, which stats would be useful to include into your pop-ups, and which you don't use at all. When you find stats that you seldom use, they may be cluttering your HUD. Either discard them, or redouble your efforts in trying to utilize them if you feel they could be useful.

Summary

♠ Using Pop-Ups

Day Twenty-Five

Implied Odds

This will be the final math lesson in the book. Unless you're that rare bird who enjoys math, then that is probably good news. It's very important that you dedicate your full attention to the following discussion. If you can do that, then you won't have any problems understanding this crucial topic and will be able to apply it to the tables that much more quickly.

Introduction

Implied odds (or “Implieds”) define the amount of money we need to win on future streets to justify an incorrect call (based purely on pot odds) to a current draw. You can compare implied odds to the process of taking a bank loan, which you have to pay back at a later point in time (when you hit your draw). The fewer outs your draw has, the more money you need to win on future streets. That’s the theory behind implied odds. There are three methods of calculating them: 1) Determine how big the pot *would have to be* to make the call with your draw correct (based on drawing odds). The difference between this theoretical pot and the actual pot is the amount of money that you have to win on future streets.

2) Multiply your actual pot odds (left-hand side of the odds) with the amount bet (or raised) by the villain; and then, subtract the amount that’s currently in the pot.

3) You can also make rough “guesstimates” by comparing the given pot odds with the odds you would need for a correct call. The difference in these odds is the amount of Villain’s bet or raise size that you have to win on later streets.

We will practice all three methods in the exercises. All of these methods will produce the same result; so you can use more than one method to “check your homework” in the calculations with the method you are using.

We also have to consider how likely it is that we will get the amount of money we need to justify our call. There are several factors that help us in determining the amount of money we could get on future streets when our draw completes. There will be an exercise where we will discuss these factors.

Exercises

1) Which factors are important to calculate the implied odds we can expect?

2) Pot: \$12; Villain bets \$9; Hero real equity: 20% (e.g. flush draw) a)

Estimate and b) calculate:

How much implieds does Hero need for a profitable call?

3) Pot: \$12; Hero bets \$8.50, Villain raises to \$27; Hero real equity: 20% (e.g. flush draw) a) Estimate and b) calculate:

How much implieds does Hero need for a profitable call?

Solutions

1) Which factors play an important role for how much implied odds we can expect?

Visibility of Our Draw

This is the most important factor. Imagine the board is $K\spadesuit-7\spadesuit-4\heartsuit-Q\heartsuit$, you check-called both the flop and the turn with a diamond flush draw, and the river is $2\spadesuit$. In Omaha, you don't expect to get much more money out of the villain, when it is so obvious that you hit the flush with this card. If you check, no other hands (besides other made flushes) will value bet; and, when you donk bet, your line of play is too obvious and your opponent will likely fold (or call/raise you if he also has a flush).

Now consider that same $K\spadesuit-7\spadesuit-4\heartsuit-Q\heartsuit$ board, and you have suited spades in your hand, instead of diamonds. On the river, the $2\heartsuit$ is dealt and you make "runner-runner" for your backdoor spade flush. In this case, you can check your backdoor flush and realize your implied odds, as there are a lot of weak hands and busted diamond flush draws that don't have any showdown value, which means they can only win with a bluff bet on the river. Donk betting should work too. That's because there are a lot of "bluff catcher"⁵¹ hands, which could call your donk bet now. Players who profess to being "expert" bluff catchers might call with hands as weak as top pair, because they focused on betting to protect against more obvious draws (e.g., 5-6, J-10, or the diamond flush draw). Now that these missed, and the unlikely backdoor spade draw hit, bluff catchers wouldn't expect you to call both the flop and turn, then donk bet the river. That is because if you already had a made hand like a set or two pair, you wouldn't have waited to bet for value in this spot. Hopefully, you see the difference between the visibilities of these draws, which, when OOP, is a huge factor.

SPR on the Next Street

Imagine the pot is \$100 on the turn. Again we take the board from above (K♦-7♦-4♠-Q♠) as an example. Both players have \$100 left. If Villain bets \$50 and you call, then on the river, both of you only have \$50 left in your stacks for a pot of \$200. Compare this to a scenario, where OTR there is \$300 left in your stack for a pot of \$250. It is obvious that in the first scenario you are more likely to get the rest of your stack in. On the other hand, if the SPR is bigger there is more money behind that you can theoretically win.

Player Category of Villain

When you think of the different player types, then you may reach the conclusion that you will get a lot more implieds against a weak, calling-station kind of player, than against a more sophisticated regular.

Hand Strength of Villain

Consider the board $K\spadesuit-7\spadesuit-4\heartsuit-Q\heartsuit$. Your implieds when you hit your straight OTR with $9\heartsuit$ will be a lot higher if Villain holds a hand as strong as $K-K-x-x$ compared to him only holding a pair with a busted diamond flush draw.

Position

When talking about the visibility of our draw, I brought up an example where we were OOP. In that same spot, if we were IP, we could have gotten more implieds than OOP, even with the more obvious flush. We already learned about that in our previous lessons.

Reverse Implied Odds

Let's assume the board is Q♦-3♦-2♠-K♥ with us holding a diamond nut flush draw. Villain bets the turn big but we are still calling with our draw, assuming that we will have enough implieds when we hit our draw. The river brings the K♣ and the villain bets again. Now, even though we hit our draw, we can't be happy about calling our flush, because every full house beats us now. So even though we hit one of our outs, we stand to lose even more money.

2) Pot: \$12

Villain bets \$9; Hero real equity: 20%

a) Estimate and b) calculate: How much implieds does Hero need for a profitable call?

a) We get pot odds of around 2.5:1⁵² (\$9 for \$21); but we actually need 4:1 (20% equity = win 1 out of 5 times = 4:1). This means that we need around 1.5 times the amount of villain's bet. $9 \times 1.5 = \$13.50$

b1) With 20% equity, we can call a 1/3 pot-sized bet. So the pot would have to be 3 times bigger than Villain's bet: $\$9 \times \$3 = \$27$ (but it's only \$12).
 $\$27 - \$12 = \$15$

b2) 4×9 (odds \times Villain bet) = \$36
 $36 - 12$ (pot) - 9 (Villain bet size) = \$15

**3) Pot: \$12; Hero bets \$8.50, Villain raises to \$27
Hero real equity: 20%**

a) Estimate and b) calculate: How much implieds does Hero need for a profitable call?

a) Hero gets pot odds of around 2.5:1, but would need 4:1. That means Hero needs 1.5 times the raise of Villain: $(18 \times 1.5) = \$27^*$

**Try to keep your estimations simple by omitting cents or rounding off to whole dollars*

b1) With 20% equity we can call a 1/3 pot-sized bet, so the pot would have to be 3 times bigger than Villain's raise: $18.50 \times 3 = \$55.50$ (but the pot is only \$12 here).

$$55.50 - 12 \text{ (pot)} - 8.50 \text{ (Hero bet size)} - 8.50 \text{ (Villain call size)} = \$26.50$$

$$\text{b2) } 4 \times 18.50 \text{ (odds} \times \text{Villain raise)} = \$74$$

$$74 - 12 \text{ (pot)} - 8.50 \text{ (Hero bet size)} - 8.50 \text{ (Villain call size)} - 18.50 \text{ (Villain raise size)} = \$26.50$$

Practice

For calculating implied odds, your SPR table will prove a very handy tool. By using it, you can easily transform your calculated equity from a percentage to actual pot odds. Just compare the difference between the pot odds you are getting with the drawing odds you actually have, then multiply that by the money added to the pot. That should be the most practical method, as less in-game calculation is required. I admit this is somewhat of an advanced concept. However, even without the math, there are times where this is very intuitive (as experience will teach you).

Summary

- ♠ Factors Determining Your Implieds
- ♠ Calculating and Estimating Your Implieds

Day Twenty-Six

The Final Math Exam

This will be your final math exam! The aim in this section is for you to test your knowledge of all the mathematical concepts, which we've already learned in previous lessons.

Introduction

I want to summarize and present a checklist of all the mathematical concepts we've examined. If all of these are "easy peasy" to you (i.e., you have successfully applied them during your sessions), then you are ready to proceed to the last set of exercises. If not, review the section(s) you are not totally familiar or comfortable with.

Estimating equity using outs

We learned that there are two different situations to consider when using our outs to estimate our equity: the *locked* and *unlocked* methods. If you aren't entirely sure what these are, and in which situation you should use them, you should go back to *Day 13* and review these methods again.

Calculating / Estimating pot odds

In addition to pot odds, we also learned about the estimation method (\$pot). These are very important concepts. If you don't feel sure about this yet or have forgotten something, I strongly recommend you go back and repeat the *Day 6 (Pot Odds)* and *Day 19 (\$pot)* lessons.

Calculating / Estimating fold equity

The calculation of fold equity basically follows the method used for calculating pot odds. Also, remember the most common fold equity percentages for bluff-raising are: pot-sized; 3/4-pot; and 1/2-pot. If you need to repeat this lesson, then go back to *Day 22*.

Calculating / Estimating implied odds

In my experience this is the most difficult topic for most PLO players to comprehend. If you need to, go through this lesson again as a refresher. If you feel like you have to, then go back to *Day 25*.

Exercises

Imagine you are involved here. Try to answer the following questions:



Figure 26: The starting point of today's exercise

- 1) How much equity does Hero need before his raise for a profitable call?
- 2) How much equity does Villain need against Hero's raise for a profitable call?
- 3) How much equity does Villain need for a profitable stack-off (without FE)?
- 4) How much equity does Hero need for a call if Villain decides to stack off here?
- 5) How much percentage fold equity does Hero need with his raise if he bluff-raises?
- 6) What implied odds does Villain need if he is holding 8-7-6-5 and faces a full house?

Calculate the results a) mathematically (exact) as well as b) with an estimation method which you also could use in-game. If you are already an expert in this,

then you can try to measure the time it takes you to calculate the results. A time of less than 10 seconds for the estimation method should be your final goal.

Solutions



Figure 27: Doing calculations for this particular scenario

1) How much equity does Hero need before his raise for a profitable call?

a) Calculation

1) $\$19 \text{ for } \$39 + \$19 = 58/19 = 3.05:1 = 24.7\%$

2) $19 / ((19+39)+19) = 24.7\%$

b) Estimation

1) \$pot = \$39

2) \$19 in \$39 $\leq 1/2$

3) $\leq 1/2 \leq 25\%$

2) How much equity does Villain need against the raise of Hero for a profitable call?

a) Calculation

1) \$36 for \$113 = $113/36 = 3.1:1 = 24\%$

2) $36 / (113+36) = 24\%$

b) Estimation

1) \$pot = 38+19+19 = 76

2) \$36 in \$76 < 1/2

3) < 1/2 < 25%

3) How much equity does Villain need for a profitable stack-off (without FE)?

a) Calculation

1) $\$110$ for $\$40+\$55+\$95 = 190/110 = 1.7:1 = 37\%$

2) $108.5 / ((19+19+39.5)+108.5+108.5) = 37\%$

b) Estimation

1) $\$pot = \$38 + \$19 + \$19 = \$76$

2) $110/76 \sim 1.5$

3) $\sim 1.5 \sim 37.5\%$

4) How much equity does Hero need for a call if Villain stacks off here?

a) Calculation

1) $\$75 \text{ for } \$130 + \$40 + \$55 = 225/75 = 3:1 = 25\%$

2) $75 / ((39 + 130 + 55) + 75) = 25\%$

b) Estimation

1) $\text{\$pot} = \$40 + \$55 + \$55 = 150$

2) $75/150 = 1/2$

3) $1/2 = 25\%$

5) How much % fold equity does Hero need with his raise if he bluff-raises?

a) Calculation

1) \$55 for \$39+\$19 = $58/55 = 1.05:1 = 48.6\%$ FE

2) $55 / ((19+39)+55) = 49\%$ FE

b) Estimation

The raise is about $1/2$ pot sized $\geq \sim 50\%$ FE

6) How much implieds does Villain need if he is holding 8-7-6-5 and faces a full house?

a) Calculation

8-7-6-5 vs. Full House $\sim 25\% = 3:1$

1) $36 \times 3 = 108 - 39 - 19 - 55 = \-5

2) $36 \times 2 = 72 - 39 - 19 - 19 = \-5

Since the implied odds are negative this means that we already get the direct correct odds, so we don't need any implieds.

b) Estimation

He has about 9 outs. $9 \times 2.5 \sim 25\% \sim 3:1$. So he needs odds of 3:1.

He gets 36:114 $\sim 3:1$, so he doesn't need implieds.

Practice

If you have completed this final math lesson, you should be able to identify where your biggest weaknesses are in this topic. Work on this, through review and practice, on at least a weekly basis. Through study and in-game application, these methods will soon become second nature. Try to use them in every session you play. By doing this, you will become faster and more accurate in your calculations. Being faster in calculating your equity for, let's say, a draw, is very important. One of the most obvious tells in online poker is when someone c-bets to protect against the draw and then you see the clock running as the player on a draw is obviously struggling to churn the numbers as to whether to call or not. Repetition is the key to making instant decisions with these methods.

Summary

♠ Consolidating Your Math Knowledge

Day Twenty-Seven

Hand Reading: Putting it all Together

We are now finished with learning PLO theory. It's now time to put it all together and improve our hand reading. The easiest way to improve your thought processes is to take a look at concrete hand examples, decide upon the best plays and justify them.

Introduction

Hand reading is one of the greatest arts in poker. At first, you might think that unless your last name is Nostradamus, it's almost impossible to do hand reading in PLO. After all, there are twice as many hole cards as Hold'em, and so many more combinations of hand types. Nevertheless, it is still possible to break down the range of possible hand types in the course of a hand according to the story that Villain is trying to sell you. I will give you one hand example here in the introduction, then give you some more examples in the exercises for practice purposes.

Pre-Flop: (\$1.50)

Villain (BTN): ??? \$108.70

Hero (BB): **K♠-Q♠-J♣-9♥** \$127.30

UTG folds, MP folds, CO folds, *BTN raises to \$2.50*, SB folds, *Hero raises to \$8*, BTN calls \$5.50

We sit in the BB and face a raise from the BTN. It is a steal and therefore we should 3-bet for value, even in the BB. We 3-bet and get called by the BTN. Note that for all examples, the rake is already deducted from the pot.

Flop: (\$16.50) **8♠-3♣-6♦** (2 players)

Hero bets \$10.50, BTN calls

The first thing we should do is to analyze the board structure. It is a relatively dry board, so a c-bet of around two-thirds pot is sufficient. With this bet, we have immediate FE because there are not a lot of hands that hit this board. Common hands that might call the flop are pairs with a gutshot or overpairs. Against those hands, we have a lot of fold equity when we continue betting on the turn. That's why we have to think about whether there are enough turn cards that improve our hand. There are actually enough turn cards (any spade, 9, 10, J, Q, K) with which we can second barrel. Therefore, we decide to c-bet the flop for \$10.50 and the BTN calls.

Turn: (\$37.50) **8♠-3♣-6♦-J♦** (2 players)

Hero: ? (\$90.20 ES left)

The turn brings a J♦. Since this card improves us to top pair, with 3 other hole-cards to hit the best two-pair on the river (and the gutshot), we should definitely fire a second barrel. The pot is \$37.50 and there is \$90.20 left to play for. The J isn't really a scare card, because it doesn't complete any straights, but does bring some additional draws (the 9-10 straight draw and the diamond flush draw). After Villain calls the flop, we already said that we perceive his hand to be pairs with a gutshot or overpairs. It's also possible that he picked up a flush draw with the turn card. Stronger hands like sets and two-pair would most likely have raised the

flop, because there are also some scary cards for these hands (in fact, every turn card except an 8 or a 6 decreases their strength). Even if he has a hand like 8-6-x-x or got two pair with the J♦ (which is pretty unlikely since we are holding a J ourselves), we still have outs with every K, Q, and 9. Even against a slow-played set, we have the 10 as a straight out. Now we have to determine our bet size.

It's always important to ask ourselves how we can force our opponent to make the biggest mistakes. In this case, the villain has a lot of draws which would only make it a small mistake (and, against our specific hand, not a mistake at all) for him to call a smallish bet OTT. When betting small, and getting raised, we still can't be certain if there is room to fold our hand. However, if we make a pot sized bet, then the mistakes Villain makes by calling with a draw or folding with a pair plus a weak draw are magnified. So, in this case, we don't worry about over-representing our hand, because everything that called the flop and folds now has a lot of equity against our hand. The final point why I like betting big more than betting small here is because of the river SPR. If we bet small OTT, we look at a river SPR of 1, where again our being OOP will often cause us to make bigger mistakes than Villain. That's why my suggested play in this spot is to pot-bet the turn and stack-off if raised.

Turn: (\$37.50) 8♠-3♣-6♦-J♦ (2 players)

Hero bets \$37.50, BTN calls \$37.50

BTN calls. That basically suggests that he isn't very strong here and should be on either a weak made hand or a draw.

River: (\$112.50) 8♠-3♣-6♦-J♦-2♥ (2 players)

Hero: ? (\$52.70 ES left)

The river is the 2♥, which basically is a blank, meaning that it doesn't complete any draws and makes two-pair unlikely. Therefore, our read is that this river card shouldn't have helped his (as we perceive) weak hand. When we now bet the river, we can expect that the villain will fold his busted draws, or call his two-pair hands (in which case, we lose). On the other hand, if we decide to check, I don't think he will push something like 8-6 or K-K for value, but will just check. However, by checking, we look more like we are giving up on a busted draw ourselves and give Villain the chance to bluff his busted draws and hands which he knows are too weak to win at showdown. It's again a situation where we have to think how we can get Villain to make the biggest mistakes. The bottom line is that we have a game plan: If we would bet he folds the hands

that can't win while calling with hands that beat us. So it's better for us to check and induce a bluff that we will invariably call in this spot.

River: (\$112.50) **8♠-3♣-6♦-J♦-2♥** (2 players)

Hero checks, BTN bets \$52.70 and is all-in, **Hero calls \$52.70**

We decide to check. Villain shoves. At this point in time, it's important to look at our relative hand strength rather than on our absolute hand strength. Our absolute hand strength is just a pair of jacks in a 150bb pot where we get pushed for an additional 50bb on the river. But since we are looking at the whole hand and how it has played out, we believe that we have a strong enough hand to call, because it beats all his hands that he doesn't bet for value. Let's take a look on the results:

Results: (\$217.90)

BTN shows **A♦-10♦-9♠-4♥**

Hero shows **K♠-Q♠-J♣-9♥**

Hero wins \$217.90 with a pair of Jacks

The hand Villain showed is a good example of hands that players would have easily folded to a bet, but bluff because they don't have any other way of winning the pot. Also, on the turn, we forced him to make his biggest mistake by calling our pot sized bet. In general, you shouldn't be too scared of slow-plays in PLO, because there are just so many scare cards and action-killer cards which so often punish slow-plays. Even on a dry flop like this, every 2, 4, 5, 7, 9, and 10 completes a straight on the turn and often just shuts down the action you might get with a set, or opens up the action you don't want to face (from straights).

By studying this hand example, I hope you have seen how hand reading in PLO can work. I now want you to try describing your own thought processes, by considering the hands in the following exercises. Take your time and really try to evaluate the merits of each play. In order to assess your thought process and judge if you are already a very solid player, I have added a new wrinkle. In the solutions, you will be rewarded with points based on the relative correctness of the play chosen.

Exercises

Evaluate Hero's following hands through from flop, to turn, to river. For each betting round, recommend what move (e.g., c-bet/donk-bet, x/c, x/r, or x/f) Hero should have made and give your reasoning why.

1) **Pre-Flop:** (\$1.50)

Villain (CO): ??? \$127.40

Hero (UTG): **Q♣-J♠-10♥8♣** \$248

Hero raises to \$3.50, MP folds, CO raises to \$12, BTN folds, CO folds, BB folds, Hero calls \$8.50

Flop: (\$25.50 | ES \$115.40) **6♦-4♣-7♥** (2 players) *Hero checks, CO bets \$18, Hero folds*

2) **Pre-Flop:** (\$1.50) Villain (CO): ??? \$141.80

Hero (SB): **J♣-J♦-9♦-8♣** \$918.50

UTG folds, MP folds, CO raises to \$3.50, BTN folds, Hero raises to \$11.50, BB folds, CO calls \$8

Flop: (\$24 | ES \$130.30) **K♥5♣-Q♦** (2 players) *Hero bets \$15.30, BTN calls \$15.30*

Turn: (\$54.60 | ES \$115) **K♥5♣-Q♦-9♥** (2 players) *Hero bets \$39.50, BTN folds*

3) **Pre-Flop:** (\$1.50) Villain (BTN): ??? \$191

Hero (BB): **A♥J♠-10♥8♣** \$101.50

UTG folds, MP folds, CO folds, BTN raises to \$2, SB folds, Hero raises to \$6.50, BTN calls \$4.50

Flop: (\$13.50) **J♠-4♠-Q♥** (2 players) *Hero bets \$8.50, BTN calls \$8.50*

Turn: (\$30.50) **J♠-4♠-Q♥9♦** (2 players) *Hero bets \$20.40, BTN calls \$20.40*

River: (\$71.30) **J♠-4♠-Q♥9♦-8♠** (2 players) *Hero checks, BTN checks*

Results: (\$71.30)

BTN shows Q♦-J♦-10♠-6♦

Hero shows A♥J♠-10♥8♣

Hero wins \$35.65 with a straight, 8 to Q

BTN wins \$35.65 with a straight, 8 to Q

Solutions

For each betting round, recommend which play (e.g., c-bet/donkbet, x/c, x/r, or x/f) Hero should have made and give your reasoning why.

1) Pre-Flop: (\$1.50)

Villain (CO): ??? \$127.40

Hero (UTG): **Q♣-J♠-10♥8♣** \$248

Hero raises to \$3.50, MP folds, CO raises to \$12, BTN folds, CO folds, BB folds, Hero calls \$8.50

Flop: (\$25.50 | ES \$115.40) **6♦-4♣-7♥** (2 players)

Hero checks, CO bets \$18, Hero folds

Before rating Hero's play, let's take a look at all the possible options we have in this spot:

- ♠ *Hero Donk Bets (20P):* By donking, we are already showing some strength, and keeping the SPR a bit higher. Note that our main intention isn't the FE OTF, even though we have FE against higher rundown hands like A-K-10-9ds. The goal for donking would be to "delay" the FE against overpairs to the turn. If we think ahead to the turn, we could effectively second barrel: 2, 3, 5, 8, 9, 10, J, or Q. Even cards like 7 or 6 are likely to be good for us, because Villain may think we either donked two pair or a straight OTF. The only bad cards for us OTT are the K and the A, on which we have to x/f (although we could consider barreling the K♣ and A♣).
- ♠ *Hero Check-Folds (15P):* Hero has a gutshot and a backdoor flush draw OTF and decides to check. Villain bets \$18 and takes down the pot after Hero folds. This looks like a very standard, yet unimaginative play from Hero.
- ♠ *Hero Check-Calls (5P):* X/c doesn't look like a valid option here, because there are just too few turn cards on which we can continue without having the initiative and we also don't have any showdown value with our hand at the moment.

- ♠ *Hero Check-Raises (10P)*: By checking, we enable Villain to make his c-bet and then take our FE with a raise. However, on this specific board, a x/r won't look that scary to Villain in a 3-bet pot (assuming he holds A-A-x-x or K-K-x-x with backdoor draws). Just think about how we would play hands like 9-8-7-x. Despite the fact that our FE with a x/r against overpairs isn't that great, I still would definitely recommend the x/r here with those kinds of hands. However, in the actual example, I don't like the x/r with a rather small FE; I don't need to tell you that we pot-commit ourselves with a x/r.

Hero decides to check, CO bets \$18, Hero raises to \$62, CO raises to \$115.40 and is all-in, Hero (\$53.40 left): ???

- 1) \$pot = 26+124 = \$150
- 2) 53/150 > 1/3
- 3) > 1/3 > 20%

- ♠ *Hero Folds*: We would need a little over 20% equity to justify the call. We can use Equilab to check our equity against the two *straights*. The results from [Figure 28](#) show us that we would have a close fold against only the straight.
- ♠ *Hero Calls*: Considering your hand reading of this player, it may tell you he also raises other hands like 7-8-9-x, or just A-A-x-x, and may not even have the straight yet. Sometimes, we just have to grit our teeth and make the call.



Figure 28: We almost have the correct odds to call the shove after we check-raise

Bottom Line: For this flop, I recommend the donk bet over the other alternatives x/f and x/r. Check-calling is the least best of the four options.

2) Pre-Flop: (\$1.50)

Villain (CO): ??? \$141.80

Hero (SB): **J♣-J♦-9♦-8♣** \$918.50

UTG folds, MP folds, *CO raises to \$3.50*, BTN folds, *Hero raises to \$11.50*, BB folds, CO calls \$8

The 3-bet is very dependent on the open raising range of the CO and especially the looseness of the BB. Without this information, either calling or 3-betting are acceptable plays.

Flop: (\$24 | ES \$130.30) **K♥5♣-Q♦** (2 players)

Hero bets \$15.30, BTN calls \$15.30

OTF, we have a weak pair, a gutshot, and two backdoor flush draws.

- ♠ *Hero Bets* (20P): We decide to bet about 2/3 pot. If Villain calls, then we will have an SPR of around 2 OTT. We block the only real draw (J-10); and, therefore, his calling range should most likely be one pair hands. If he has middle cards, he would most likely fold to a c-bet, which is an okay outcome for our hand. With the two backdoor flush draws and gutshot, there are a various turn cards that should be good enough to either: 1) get him to fold a single pair of Kings or Queens; and 2) yield us enough equity should we get pushed OTT. Based on all these considerations, c-betting here is a sound plan.
- ♠ *Hero Check-Calls* (10P): Another option would be to x/c the flop. If we do so, we might induce bluff bets from his middle card holdings. If we go with this read, his best improvement OTT will most likely be a middle flush draw. We would still have an SPR of 2 OTT, but this time without the initiative. If we check again, he will most likely pot bet and we won't really know what to do. That's because without seizing the initiative, he can even semi-bluff us off our hand with middle card holdings that picked up a draw OTT, but would have folded to our flop had we c-bet.
- ♠ *Hero Check-Folds* (10P): Check-folding is the final option. I would recommend this line when we face a passive player who we know will only bet the flop (after we check) when he has a King or Queen (we don't have this information here though).

So my ranking here is x/f > b/f > x/c against passive players and b/f > x/c > x/f against everyone else.

Turn: (\$54.60 | ES \$115) **K♥5♣-Q♦-9♥** (2 players)

Hero bets \$39.50, BTN folds

The turn brings the 9♥ and Hero decides to bet again. I disagree with betting this card. Even though we block the straight, with an SPR of 2, there won't be too many hands that fold here. That's because this card actually improves Villain's hand substantially, based on his flop-calling range. At the same time, it weakens our range, because it's neither a blank nor a card that gives us something like a flush draw. I would only bet cards that either don't help either of our ranges (like the 2♠), or something that improves only our range, like a flush draw. The only hand that called the flop that might fold now is something like A-K-P-P. On this particular turn, I prefer to x/f (20P) over b/f (10P). BTN folds so this time Hero was right (which doesn't mean that Hero's play was correct!).

3) Pre-Flop: (\$1.50)

Villain (BTN): ??? \$191

Hero (BB): **A♥J♠-10♥8♣** \$101.50

UTG folds, MP folds, CO folds, *BTN raises to \$2*, SB folds, *Hero raises to \$6.50*, BTN calls \$4.50

The BTN min-raises and we decide to 3-bet for value in the BB. This should be the best play; calling would only be good against very tight ranges.

Flop: (\$13.50) J♠-4♠-Q♥ (2 players)

Hero bets \$8.50, BTN calls \$8.50

This is the first interesting spot in the hand. Hero has a pair, a double gutshot, and a backdoor flush draw.

- ♠ *Hero Bets* (10P): Hero decides to bet rather small and BTN calls. In my opinion this bet size is too small. If Hero wants to bet, he should bet bigger, because this size gets called by every draw. Therefore, it's very hard for us to determine which turn cards are good for us and which of them improve Villain. If Villain pushes, we have to fold our hand and a lot of equity along with it.
- ♠ *Hero Check-Calls* (20P): Even if we have A-A, we should also check (with all three options being viable afterwards). Having a check-calling range in this spot is great to balance our check-folds. Another good thing is that we don't mind if Villain checks behind and takes a free card, because we don't miss a lot of value and we have enough turn cards to improve our hand. Normally, we want to avoid check-calling because it often makes our hand face-up (we are on a draw). But, in this case, this information doesn't help Villain much. What should he do on a spade turn now? So, it's hard for him to determine which cards he can barrel or bluff bet on the turn. If he holds a queen and the turn brings the flush, he will most likely check the turn behind. We can even bluff the river if we think we haven't got enough showdown value.

So I think x/c is the best option and betting is the second best. However, if you want to bet here, you should definitely bet bigger than Hero did.

Turn: (\$30.50 | ES \$86.50) J♠-4♠-Q♥9♦ (2 players)

Hero bets \$20.40, BTN calls \$20.40

The turn gives us the low straight.

- ♠ *Hero Bets* (10P): We decide to bet again. However, as on the flop, Hero bets rather small. The problem with this is that if we get raised, we most likely have to fold, although we really don't want to with such a strong hand. There are still many draws he could use to raise. However, we have no idea if he's going to play them that aggressively, as he may be raising simply because he has the better straight.
- ♠ *Hero Check-Calls* (15P): Another play would be to x/c the turn. This enables Villain to semi-bluff his draws. The problem is that he will check any busted draws behind on the river and we won't get any more value from them.
- ♠ *Hero Check-Raises* (20P): The better play, when checking, is to x/r. By check-raising, we force Villain to pay dearly to see the river card and he won't be able to save some money when he doesn't hit his draw OTR. At the same time, we also get more value from his draws. You might argue that we lose our entire stack against K-10 (against which we still have the K as an out). In reality, we would lose the money anyway, even if we x/c, since we won't be able to fold our straight if the river blanks. If Villain checks behind, we still have a value bet OTR, since he must have hit something when calling the flop.

Because we can't really judge whether b/f or b/broke⁵³ would be the better play, and we will have an ugly SPR on the river when he calls, my suggestion for the turn is $x/r > x/c > \text{bet}$.

River: (\$71.30) **J♠-4♠-Q♥9♦-8♠** (2 players)

Hero checks, BTN checks

As played, I don't think that there are any other options other than checking on this specific river card. Let's analyze the results:

BTN shows **Q♦-J♦-10♠-6♦**

Hero shows **A♥J♠-10♥8♣**

Hero wins \$35.65 with a straight, 8 to Q

BTN wins \$35.65 with a straight, 8 to Q

Ouch! We split with a hand where we had 89% equity on the turn. In most cases, he would have b/broke anyway had we check-raised. Also consider that we might have bet-folded the turn had he decided to go with his hand OTT.

Now it's time to sum up your points. If you got a score of over 75 (out of 100) points you can hand read well and have already developed a very good understanding of the game.

Practice

I hope you have a feeling to get into hand reading, by integrating everything you know about PLO. Even without considering the powerful tools of stats or notes, you can see that we can still do good breakdowns of ranges to determine the best plays. I highly recommend that you do as much hand analysis as possible. Get together with friends and talk about hands you were unsure about and get their input. That's one of the best ways you can improve your knowledge of the game (apart from what you learned in this book!). When playing, evaluate each hand and try to find the "keys to success," whether that means playing the hand in a technically sound manner, exploiting the player types, their stats, their ranges, their leaks (per your notes) or figuring out the story they are trying to tell you.

Summary

♠ Hand Reading Approaches

Day Twenty-Eight

Adaptions: Deep, Casino and Tournament PLO

In this final section, I present a selection of topics to help adapt your game beyond online short-handed PLO. This is just an overview and more detailed information can be found in other books as well as online. The aim of this section is to take your already solid PLO game and give you a general idea on how to adapt to these different environments.

Introduction

The two main differences between the following three variations are the SPR and/or the player types. I will present each variant by comparing them to what we've learned so far.

Deep Play

When playing fast fold games, you will get deep really fast (since you play so many hands at a single table). When playing deep, each incorrect decision will cost you much more money. The flip side is that you benefit from your opponents' mistakes of by the same margin. The only thing that changes when playing deep is the SPR. The deeper you are with your opponent(s), the more important position becomes. Try to tighten up OOP, even more than you do at the moment. However, you can widen your light 3-betting range and stealing range from IP even further and lower your F3b range. When playing deep post-flop, there is more maneuvering room for moving your opponent off his hand, without having to resort to stacking off. As you already know, position helps tremendously when planning to take down a pot before it ever reaches showdown.

Casino PLO

If you play in casinos regularly, then you might have already noted that the tables are full of players with deep stacks. This is because there are more people at the table (nine to ten, instead of six) and live players make more “crying calls” with a lot of weak hands. This results in pots building a lot quicker than in online PLO. A further consideration is you won’t have your online tools; so it’s harder to count the money – both to calculate the pot size and the effective stack size. Of course, you can always ask the dealer to perform a count of the pot for you if you want to do a quick equity analysis (asking a player how much he has left in his stack during a hand is a trickier proposition). In any event, when out of a hand, make sure to take time counting and remembering which players are short or deep stacked. Trying to do this in the middle of a hand is too late.

An even bigger difference in casino PLO compared to online is that people play even looser and more passively. When playing with 9 other people, you can expect every pot to be typically 5-way, and even a 9-way “family pot” is not unheard of. By now, you should already know the correct adaptations for massive MW pots. So take care to always play hands with domination potential and avoid investing too much money when not drawing to the nuts. Don’t bother much about balancing. Instead, bet/raise big with your big hands to dissuade MW pots when you have hot-cold equity.

Finally, you are no longer online and can see everyone’s “poker face.” So look for physical tells, which are behaviors people have (and aren’t aware of) in specific situations. Classic tells include someone’s hand starting to shake (indicates they have a big hand), or they start trash-talking to you (when they are bluffing). But be cautious: Sometimes those very same tells can also lead to wrong assumptions. For example, someone shaking uncontrollably could mean great strength, but could also mean someone is in sheer terror after risking all his money on a bluff. Use tells only when you have observed this behavior numerous times, or it’s your last (i.e., tiebreaker) consideration that determines the play you end up making.

Tournament PLO

Tournament PLO (both live and online) is a hybrid between deep play and casino PLO. As blinds increase at fixed intervals, SPRs will start ultra-deep, but eventually reduce to 10bb in the later stages. The player pool is usually comparable to the players participating in casino games. One reason is that the biggest fish prefer tournaments over cash games as, over a given amount of time, it is less costly to play a single tournament than to make multiple buy-ins in a cash game while losing stack after stack. Flexibility and adapting to the dynamics and stack sizes of the table is very important. Like fast-fold poker, getting deep reads on your opponents is generally difficult, because they will be replaced by other players on a regular basis. Not only do the individual players at a table get swapped around, but you also will be moved from table to table yourself as more players bust out and tables close, while others get consolidated. Strategies, from adapting your open-raising sizes to adapting your hand ranges, based on the looseness of the table, should be considered. You should also keep an eye on SPRs at every stage of the hand. Finally, the most important difference is that when you lose your stack, you're out (assuming you're not in the re-buy stage of a tournament).

To make money in a tournament, you must finish in typically the top 10% of the field. During the "bubble" phase of a tournament, where only one more player needs to lose his stack for everyone else to get paid, the table dynamics change dramatically. Great tournament players boldly steal from almost any position, picking up huge blinds and antes, as many players freeze up until the bubble is burst (for fear of being the "bubble boy" themselves). You will even see other players actually teaming up and calling with weak hands just to bust an all-in short stack, in order to burst the bubble. This relates to the concept of Independent Chip Modeling (ICM), which is purely a tournament (or Sit-and-Go) consideration, and out of our scope for cash games.

Now take a deep breath and take your time to do your final exercises.

Exercises

I'm sure you still remember the hand examples from the previous exercise. I now want you to think about how best play varies if those hands were deep, played in a casino, or played at the final table of a tournament. I already substituted the plays of hero with the suggested plays of the last exercise. Again, justify how our best play varies given the new circumstances?

1) Deep Play

Pre-Flop: (\$1.50)

Villain (CO): ??? \$127.40 → \$248

Hero (UTG): Q♣-J♠-10♥8♣ \$248

Hero raises to \$3.50, MP folds, CO raises to \$12, BTN folds, CO folds, BB folds, Hero calls \$8.50

Flop: (\$25.50 | ES \$236) 6♦-4♣-7♥ (2 players) *Hero bets \$18, CO calls \$18*

Turn: (\$61.50 | ES \$200) 6♦-4♣-7♥J♣ (2 players) *Hero bets \$48, CO raises to \$202 and is all-in, Hero? (\$152 left)*

2) Casino Play

Pre-Flop: (\$15) (10 players)

Villain (CO): ??? \$1,418

Hero (SB): **J♣-J♦-9♦-8♣** \$9,185

6 folds, *CO raises to \$35*, BTN folds, *Hero raises to \$115*, BB folds, CO calls \$80

Flop: (\$240 | ES \$1,303) **K♥5♣-Q♦** (2 players) *Hero bets \$153*, BTN calls \$153

Turn: (\$546 | ES \$1,150) **K♥5♣-Q♦-9♥** (2 players) Hero checks, *BTN bets \$150*, *Hero?* (ES \$850)

3) One more player to bust to be in the money in a tournament. Average stack is 60,000, shortest stack is 5,000.

Pre-Flop: (1,500) (6 players)

Villain (BTN): ??? 191,000

Hero (BB): **A♥J♠-10♥8♣** 101,500

3 folds, *BTN raises to 2,000*, SB folds, *Hero raises to 6,500*, BTN calls 4,500

Flop: (13,500) **J♠-4♠-Q♥** (2 players) *Hero checks*, BTN bets 8,500, Hero calls 8,500

Turn: (30,500) **J♠-4♠-Q♥9♦** (2 players) *Hero checks*, *BTN bets 20,400*, *Hero raises to 86,500 and is all-in*, BTN calls 66,100

River: (203,500) **J♠-4♠-Q♥9♦-8♠** (2 players) **Results:** (203,500)

BTN shows **Q♦-J♦-10♠-6♦**

Hero shows **A♥J♠-10♥8♣**

Hero wins 101,750 with a straight, 8 to Q

BTN wins 101,750 with a straight, 8 to Q

Solutions

1) Deep Play

Pre-Flop: (\$1.50)

Villain (CO): ??? \$127.40 → \$248

Hero (UTG): **Q♣-J♠-10♥8♣** \$248

Hero raises to \$3.50, MP folds, CO raises to \$12, BTN folds, CO folds, BB folds, Hero calls \$8.50

The only thing that changed from yesterday's hand is Villain's stack size. I advised you in the Introduction to be tighter OOP when playing deep. Still, this hand is too strong to be folded to a 3-bet; and, therefore both the open raise and the call are fine.

Flop: (\$25.50 | ES \$236) **6♦-4♣-7♥** (2 players)

Hero bets \$18, CO calls \$18

As you can see, I have already adapted the actions to the best play as discussed yesterday. So instead of check-folding, we donk bet and CO decides to call. Now that we are deeper, I would even consider check-raising over donk betting because the Villain won't feel nearly as comfortable stacking off with A-A as with the lower SPR. Additionally, we still have room to fold should he shove. The donk bet also loses value when we are deeper because there is more room for him to slow-play the flop and raise on the turn.

Turn: (\$61.50 | ES \$200) **6♦-4♣-7♥J♣** (2 players)

Hero bets \$48, CO raises to \$202 and is all-in, Hero? (\$152 left)

The turn brings the J♣ and we improve to a top pair, a flush draw, plus a gutshot. As recommended yesterday we continue our aggression, trying to fold out A-A-x-x. And BOOM, Villain fires out a raise. Let's first see how much equity we need for a profitable stack-off in this situation:

- 1) \$pot = \$62+\$100 = \$162
- 2) 152/162 < 1
- 3) < 1 < 33%

That means that for a profitable stack-off we need a little less than 33% equity. Let's take a look on our equity against the two most likely hands: a slow-played straight and A-A-x-x with a flush draw. *Figure 29* shows us the results. Notice that I added "LL" and "MM" to the straights to get more realistic combinations when mixing in other hands like A-A-x-x with clubs.



Figure 29: Equity analysis of stacking off using EquilabOmaha

As you can see, we simply don't have enough equity here to stack-off OTT this deep. Therefore, when this deep, we have to fold. In this case, donking the flop no longer seems like a very good play. While check-folding might still seem legitimate, I want to show you my favorite play for this stack depth on the flop – check-raising.

Flop: (\$25.50 | ES \$236) **6♦-4♣-7♥** (2 players)
Hero checks, CO bets \$18, Hero raises to \$62, CO calls \$44

Turn: (\$149.50 | ES \$174) **6♦-4♣-7♥J♣** (2 players)
Hero bets \$149.50, CO raises to \$174 and is all-in, Hero? (\$24.50 left)

We don't even have to start calculating to see that we have a no-brainer call

here. The other big advantage of this play is that we have massive FE both on the flop and the turn. With so many cards that we can barrel (as said - every card except a K or an A), this play clearly is my favorite in this deep-stacks scenario.

2) Casino Play

Pre-Flop: (\$15) (10 players)

Villain (CO): ??? \$1,418

Hero (SB): **J♣-J♦-9♦-8♣** \$9,185

6 folds, *CO raises to \$35*, *BTN folds*, *Hero raises to \$115*, *BB folds*, *CO calls \$80*

To make this hand a little more casino-style I raised the stakes to \$5/\$10. Also we are now sitting with 9 other people on the table, which doesn't really matter here since the first six of them folded anyway. I like the 3-bet more in this scenario, because the BB is more likely to be a calling station. So by raising we are increasing the chances of the pot being HU with the CO.

Flop: (\$240 | ES \$1,303) **K♥5♣-Q♦** (2 players)

Hero bets \$153, *BTN calls \$153*

As discussed in the previous section, I liked the c-bet more than checking the flop. You might also remember my statement that I prefer to x/f when facing a passive player. When playing in a casino, we should assume that, unless proven otherwise, the player pool will be loose and passive. That's why, in this case, I prefer the x/f. When he checks behind we have several good turn cards to go from there.

Turn: (\$546 | ES \$1,150) **K♥5♣-Q♦-9♥** (2 players)

Hero checks, *BTN bets \$150*, *Hero?* (ES \$850)

After betting the flop, we decided that checking is now the best play OTT because this card hits his range more than ours. You will often see odd bets of this size when playing in a casino. People playing live tend to lose track of how much money is in the pot and just bet randomly. Even though this bet is so small, and we only need $150/550 > 1/4 > 16.6\%$, we still aren't certain which river cards are good for us because there are no clean outs for our hand.

Raising as a bluff is very risky. Players betting small are possibly terrified of someone holding the nuts, but it is unlikely that they are going to fold as long as

they can visualise any cards that will win them the pot OTR. That's another characteristic of casino players, especially if they are taking advantage of free alcohol, they have no clue of hand equity and will call with the thinnest of draws at this juncture in the hand. That's why I would avoid raising and just fold here.

3) One more player to bust to be in the money in a tournament. Average stack is 60,000, shortest stack is 5,000.

Pre-Flop: (1,500) (6 players)

Villain (BTN): ??? 191,000

Hero (BB): A♥J♠-10♥8♣ 101,500

3 folds, *BTN raises to 2,000*, SB folds, *Hero raises to 6,500*, BTN calls 4,500

Our stack sizes have been adapted to be normal for tournament play. The average stack is 60,000, whereas the short-stack only has 5bb left. This means that we are one of the healthier stacks left in the tournament. One more player has to lose his stack for us to cash. Blinds are 500/1000 which means that we are a little over 100bb deep. BTN min-raises and I still agree with our 3-bet for value pre-flop.

Flop: (13,500) J♠-4♠-Q♥ (2 players)

Hero bets 8,500, BTN calls 8,500

As discussed in the previous section, we are going with a x/c this time. I still prefer this play since it keeps the pot small. I don't want to get into a knife fight with the chipleader in this stage of the tournament, especially with such a healthy stack of my own.

Turn: (30,500) J♠-4♠-Q♥9♦ (2 players)

Hero checks, *BTN bets 20,400*, *Hero raises to 86,500 and is all-in*, BTN calls 66,100

The suggested play OTT was to x/r and get the money all-in against all the draws that Villain might hold. I still don't think that's a bad play; but we have to consider that we are playing against a rather passive player pool which prefers to check draws and only bets very strong made hands. The second point is that we are playing for our tournament life. If Villain has K-10, then we bust out of the

tournament and get no money at all. Nothing in poker is more devastating than playing a tournament for hours and leaving with nothing!

That's why I might rather x/c here. By check-calling, I allow myself to still make a tight (and painful) fold on the river if he bets big. But at least I'm still in the tournament with a stack of 66,100, which will still be above average. I also don't think that players, who are playing passively, would risk more than half their stack on a bluff of their busted draws OTR.

River: (203,500) J♠-4♠-Q♥9♦-8♠ (2 players)

Results: (203,500)

BTN shows Q♦-J♦-10♠-6♦

Hero shows A♥J♠-10♥8♣

Hero wins 101,750 with a straight, 8 to Q

BTN wins 101,750 with a straight, 8 to Q

While these results might make you believe that you are the unluckiest person on earth, you still shouldn't forget that this might have been your last hand in the tournament, in the case when Villain held K-10 here.

Practice

If, after reading and working through this topic, you feel like it, you can try out different PLO variants like casino or tournament PLO. If there's no casino nearby, many online PLO tournaments at various buy-ins are always just a click away. With the concepts you have learned in this book, I'm sure you will be able to switch gears quickly and find the proper adaptations to these other variants. You just have to think about what has changed and what has stayed the same, as compared to your typical 100bb short-handed cash games. In your future sessions, try putting it all together and consult the book after a session where you think that you are unsure about particular topics.

Summary

♠ Adapting Your Play to Deep-/Casino-/Tournament-PLO

Week Four Summary

You have learned many potentially valuable concepts which will help you to improve your game. From my personal experience, I can guess that you may have to review at least a few of these lessons before you'll feel confident about applying them during your sessions.

To give you a check-up about what you should have learned within this last week, here is your final check-list:

Day 22

- ♠ How to Calculate and Estimate Fold Equity

Day 23

- ♠ Recognizing Number of Outs/Douts/Nut Outs of Wraps

Day 24

♠ Using Pop-ups

Day 25

- ♠ Factors Determining Your Implieds
- ♠ Calculating and Estimating Your Implieds

Day 26

♠ Consolidating Your Math Knowledge

Day 27

♠ Hand Reading Approaches

Day 28

- ♠ Adapting Your Play to Deep/Casino/Tournament PLO

Final Thoughts

Congratulations! You have now reached the end of an admittedly demanding journey. At this point, I would recommend that you to go back to the table of contents and check off all those topics on which you feel unsure of (or find unexecutable) while in-game. Prioritize these topics, considering your own leaks, and try to focus on those lessons for your next sessions. Redo the exercises and compare the results with your first attempt. Try to apply these concepts in the safe haven of a play-chips table, until you gain the confidence to use them at a real-money table.

I hope by reading and working through this book, you now feel less intimidated at the tables and also trust more in your newly refined game. As you play more of these situations, the amount of “???” during your sessions will diminish (and “\$\$\$” grows). Eventually, you will be able to judge – and especially, justify – why a certain play in a certain situation has higher merit over another. The ultimate goal of this book would be that you don’t just find the solutions to the given exercises, but also are able to apply these concepts in an actual game in all types of situations.

If you liked the book, still have open questions about a topic, report mistakes in the book or just want to support me, feel free to follow me.

♠ Facebook: www.facebook.com/rulaZPoker

♠ Twitter: www.twitter.com/rulaZPoker

I also plan to do some future projects in terms of producing interactive PLO content. If you are interested in some free sample videos and like to know what I’ll do in the future, also subscribe to my free newsletter:

♠ www.smallstakesplo.poker/#newsletter

If you can't get enough of it after all and you haven't done so yet, I also dedicated a 4 hour video coaching series to this book. You can buy it at www.dandbpoker.com/product/strategies-to-beat-small-stakes-pot-limit-omaha.

I wish you good luck for your further journeys in PLO. See you at the tables (we'll be the ones with the big stacks).

Glossary of Poker Terms

This is the place you should come whenever you have trouble of understanding any slang word or abbreviation presented in this book.

3-bet: The first re-raise pre-flop.

3-way: A situation where exactly three players are left in the hand.

A-Game: Your best game.

A-Mindset: Your best state of mind.

ABC-Style: Playing a straightforward, “by the book” poker style. That basically means to bet/raise strong hands, check/call medium-strength hands and check/fold weak hands.

Auto-Pilot: Making automatic plays without thinking about the best play. Mostly occurs when playing too many tables or taking too little time to think about the hand.

Backdoor Draw: A *draw* that needs both the *turn* and *river* card to complete.

Balancing: Playing hands of different strengths the same way in order that your opponents aren’t able to read your actual hand.

Bankroll Management (BRM): The decision of how many buy-ins to choose for a certain limit, and when to move up and when to move down the limits.

Big Blind (BB): The position on the table (two seats to the left of the *BTN*) that has to pay the *Big Blind (bb)*.

Big Blind(s) (bb): The bigger of the two minimum stakes that have to be paid before each hand.

Blinds: The minimum stake that two players (the *Small Blind* and the *Big Blind*) have to post before the hand is dealt.

Blockers: Hole cards that reduce the probability another player has the cards we

block. (e.g., when the flop is A♥K♥10♦ and we are holding Q♥Q♦-5♠-3♣ we block both the *straight* and the *nut flush draw*, so we can represent both of these hands credibly.) **Bluff Catcher:** A weak (*made*) hand that calls only to win against bluffs.

Board: See *Community Cards*.

Boat: A slang term for a “full house”.

Button (BTN): The position on the table, marked with the dealer button symbol. It is the best position on the table because the player on the BTN always acts last *post-flop*.

Calling Station: A player that, once in a hand, calls it down to the river and rarely folds. Do not try to bluff a calling station!

Cash Game: A poker game where each of your chips is worth a certain amount of money. You can join and leave a table anytime you want.

Check back/behind: If the player *in Position* checks it's called a check back or check behind.

Community Card(s): The cards that gets dealt *post-flop*. Every player may use those cards to improve their *hole cards* (In Omaha, up to three).

Continuation Bet (C-bet): A bet by the player who made the last bet or raise in the previous betting round.

Cutoff (CO): The player on the right side of the *button*. It is the second best position on the table.

Dangler: One card that doesn't work well with the other three cards in your hand.

Donk Bet: A bet by a player who didn't make the last bet or raise on the previous betting round.

Discounted Out (Dout): *Outs* of your draw that might also improve your opponent to a better hand than yours. For example *outs* that complete your straight but also a flush. Or *outs* that complete your flush but at the same time pair the board for a full house.

Double Suited (ds): When your *hole cards* consist of exactly 2 cards of 2 different suits. Examples: A♥K♥7♦-3♦, 9♣-6♠-3♣-2♠.

Draw: A (*made*) hand that needs one more *community card* (turn or river) to complete to a straight (*straight draw*) or a flush (*flush draw*).

Effective Stack Sizes (ES): The *stack size* of the shortest player who is still in the hand.

Equity: The current chances of a (*made*) hand to win at *showdown*.

Expected Value (EV): The money you can expect to win in the long run when making a certain play.

Fast-Forward Game: A game variant where you get your next hand dealt as

soon as you fold your current hand. Players and positions for each hand are assigned randomly by the online poker software.

Float: Attacking the weakness of the *Pre-Flop Aggressor* on a street (usually the turn).

Flop: The second betting round where the first three *community cards* get dealt.

Fish: An affectionate term for a bad player.

Flush Draw: A *draw* with 9 *outs* to complete the flush.

Fold Equity (FE): The value we gain by getting our opponent to fold.

Free Card: Being guaranteed to see the next *community card* for free by *checking behind*.

Gutshot: A *draw* with 4 *outs* to complete the straight.

Hand: One cycle from *pre-flop* to *showdown*. A hand may end after each betting round. Also see (*Made*) *Hand*.

Heads-Up (HU): A situation where exactly two players are left in the hand.

Heads-Up-Display (HUD): A display that presents you the statistics of every player on the table to help you identifying player types and *leaks*.

Hero: The player from whose perspective one observes a hand.

Hole Cards (Hand): The cards a player holds in his hands, only visible to them. Therefore also called the “hand” of a player.

Hot-Cold Equity: Hands with a high probability of winning a hand at *showdown*.

In Position (IP): Acting last in *post-flop* situations (relative to other player(s)).

Iso(lation)-Raise: To raise a player (commonly a limper) with the intention to play a *Heads-Up* pot with him.

Leak(s): Flaws in a player’s game.

(Over-)Limper: A limper is a player who called the *Big Blind*. An overlimper is a player who called the *Big Blind* after one or more limpers already joined the pot.

Loose-Aggressive (LAG): A regular player who plays a lot of hands and plays those hands aggressively.

(Made) Hand: Consists of 5 cards. You have to use exactly 3 cards from the *board* and exactly 2 cards from your *hole cards* to build a made hand. The player who holds the made hand of the highest rank at the *showdown* wins the pot.

Micro-Stakes: Games with *blinds* from \$0.01/\$0.02 to \$0.10/\$0.25 (\$2 to \$25 buy-in games).

Middle Position (MP): The player to the left of *UTG* and to the right of *MP* who has to act second *pre-flop* at a six-handed table.

Mono(tone): When your *hole cards* consist of 4 cards of the same suit. Examples: A♥K♥7♥3♥, 9♠-6♠-3♠-2♠.

Multi-Way (MW): A situation where three or more players are left in the hand.

Nit: A player who only plays the strongest of hands.

Nuts: The best possible *made hand* at the given moment.

On The Flop (OTF): The situation after the first three *community cards* got dealt.

On The Turn (OTT): The situation after the fourth *community card* got dealt.

On The River (OTR): The situation after the fifth *community card* got dealt.

Open-Ended Straight Draw (OESD): A *draw* with 8 *outs* to complete the straight.

Open Raise: If the first player joins the pot *pre-flop* with a raise, it's called an open raise. Also called *Raise First In (RFI)*.

Out: A card (or cards) that a player needs to make a better (*made*) hand.

Out of Position (OOP): Acting before other player(s) in *post-flop* situations.

Perceived Range: The *range* a player likely has in a given situation, based on prior observations and/or *statistics*.

Pop-up: A window that pops up when hovering over or clicking on a *stat* of your *HUD*.

Post-Flop: The betting rounds from *flop* to *river*, ending with the showdown.

Pre-Flop: The first betting round before the *flop* gets dealt.

Pre-Flop Aggressor (PFA): The player who did the last aggressive action *pre-flop*.

Rainbow (rb): When your *hole cards* consist of 4 cards of 4 different suits. Examples: A♥K♣-7♠-3♦, 9♥6♠-3♦-2♣.

Raise First In (RFI): See *open raise*.

Rake: The share of money that is taken out from every pot that at least went *post-flop*.

Rakeback: The percentage of *rake* that you get paid back by the poker site, mostly at the end of each month. This percentage is either a fixed amount ("flat rakeback") or depending on the amount of rake you had to pay during the month.

Range: A set of different possible hands a particular player can hold in a given situation.

Regular (Reg): A player who plays a limit at a regular basis. This term is usually used to describe solid players.

River: The fourth and last betting round where the fifth and last *community card* gets dealt. Also referred as "5th Street".

Sandwich (position): The player in a *multi-way* pot that sits directly to the left of the *pre-flop aggressor* is in the sandwich position. This means that he is the first player to announce his decision without having the information about the hand strengths of the rest of the players.

Scare Card: A *community card* that likely improves the *perceived range* of a player in the pot.

Semi-Bluff: Betting or raising a hand *post-flop* that most likely isn't the best (*made*) hand but has *outs* to improve. Typical examples are drawing hands like *straight draws* or *flush draws*.

Set: A “three of a kind” when holding a pair in your *hole cards*.

Short-Handed (SH): A table with a maximum of 3-6 players.

Showdown: The phase after the last betting round where all the remaining players show their hands and the winner gets determined.

Single Suited (ss): When your *hole cards* consist of 2 or 3 different cards of a suit but are not *double suited*. Examples: A♥K♥7♠-3♦, 9♥6♠-3♠-2♠.

Small Blind (SB): The player between the button and big blind, who has to post half the amount of the Big Blind (see *Big Blind(s) (bb)*). As he always has to act first in *post-flop* situations, this is the worst position on the table.

Small Stakes: Games with *blinds* from \$0.25/\$0.50 to \$0.50/\$1 (\$50 to \$100 buy-in games).

Squeeze: A raise with the intention of forcing out the PFA and at least one more caller in the pot pre-flop.

Stack Size: How much money a player has left.

Stack-to-Pot-Ratio (SPR): The SPR describes the ratio of the stack in relation to the pot. To determine the SPR you always consider the *Effective Stack Sizes*.

Starting Hands Chart (SHC): A chart which lists all the playable *pre-flop* open raising hands.

Statistics (Stats): Information about a player based on his prior actions.

Steal: A *raise first-in* from the CO, BTN or the SB.

Straight Draw: A *draw* that needs one more card complete the straight. There are three different straight draws: (*Double*) *Gutshot*, *Open-Ended Straight Draw (OESD)*, and a *wrap*. All of them differ in their amounts of *outs*.

Street: A term to address the *post-flop* phases. The *turn* is the 4th street, *river* the 5th street.

Tight-Aggressive (TAG): A regular player who plays mostly strong hands and plays those hands aggressively.

Turn: The third betting round where the fourth *community card* gets dealt. Also referred as “4th Street”.

Under The Gun (UTG): The position between the *BB* and *MP*. The player who is UTG has to act first *pre-flop*.

Villain: The opposing player in a poker hand.

Wrap: A *draw* with 9-20 *outs* to complete the straight.

Glossary of Statistics

In this section, you will find a summary of every stat that has been discussed in the course of this book.

PRE-FLOP STATISTICS		
Statistic Name	Abbreviation	Meaning
3-bet	3b	How often a player re-raises a single raise before him
4-bet Range	4Bet Rng	An indicator of how often a player 4-bets non-AA** hands. A 4-bet Rng of around 2.5% indicates that this player only 4-bets AA**. Calculated by multiplying the PFR with the 4-bet value
BTN Steal	BTN Stl	How often a player steals from the Button
Call 3-bet	Call3Bet	How often a player calls a 3-bet
Fold BB to BTN Steal	FoldBB2BTN	How often a player folds his Big Blind to a Button Steal
Fold BTN to CO Steal	FoldBTN2CO	How often a player folds on the Button to a Cutoff Steal
Fold to 3-bet	Fold3Bet, F3b	How often a player folds to a re-raise
Pre-Flop Raise	PFR	How often a player raises pre-flop
Raise First-In	RFI	How often a player raises pre-flop when all the other players before him folded
Voluntarily Put Money In Pot	VPIP	How often a player puts money in the pot pre-flop except when posting the blinds

POST-FLOP STATISTICS		
Statistic Name	Abbreviation	Meaning
Aggression Factor	AF	The aggression factor of a player. The calculation for the AF is as follows: (amount bet + amount raise) / (amount call)
Check-Raise Flop	Check-R F, CRF	How often a player raises the flop after checking OOP
Continuation Bet	C-bet, Cb, CBet	How often the PFA bets on the flop to continue his pre-flop aggression.
Continuation Bet Flop/Turn/River	CbF/T/R	How often this player continuation bets on the flop/turn/river.
Fold to Continuation Bet Flop/Turn/River	F2CbF/T/R	How often a player folds to a continuation bet on the flop/turn/river
Went To Showdown	WTSD	How often a player brings his hand to the showdown after seeing the flop

POP-UP STATISTICS			
Statistic Name	Abbreviation	Meaning	Pop-up Stat
Bet vs. Missed C-Bet	BvMCb	How often a player bets when the PFA didn't c-bet	F2CbF
BTN vs. CO 3-bet	3bBTNvsCO	How often the player on the BTN 3-bets when facing a CO Steal	3-bet
Cold Call 3-bet	CC3b	How often a player calls when there was a 3-bet before him	VPIP/PFR
Donk Bet	Donk, Db	How often a player bets out OOP into the PFA	F2CbF
Fold Continuation Bet to Raise on the Flop	CB-Fold F	How often a player folds to a raise after he continuation bet	CbF
Fold to Donk Bet	F2Db	How often the PFA folds IP to a bet	F2CbF
Fold SB to BTN Steal	FSB2BTN	How often a player folds his Small Blind to a Button Steal	FBB2BTN
Fold to Continuation Bet in a 3-bet Pot	F2Cb3bP	How often a player folds to a continuation bet in a 3-bet pot	F2CbF
Limp-Fold, Limp-Call, Limp-Raise	LF, LC, LR	How often this player folds, calls, or raises against a raise after he limped	VPIP/PFR
Skip Flop Continuation Bet and Check-Fold	FSkCbF	How often this player folds to a bet after he checked as the PFA	CbF

- 1 \$2 to \$25 buy-in games (blinds range from \$0.01/\$0.02 to \$0.10/\$0.25).
- 2 \$50 to \$100 games (blinds range from \$0.25/\$0.50 to \$0.50/\$1).
- 3 A table with a maximum of 6 players, compared to a full table of 9 or 10 players.
- 4 Each of your chips is worth a certain amount of money. You can join and leave a table anytime you want.
- 5 You buy-in for a fee to receive a defined amount of chips (of no value) and play until you lose all your chips. Typically, 10% of the remaining field receives cash prizes based on the total number of buy-ins. One other difference with tournaments vs. cash games: In tournaments, blinds increase over time (determined by the amount of time at each level).
- 6 \$200 to \$400 buy-in games (blinds from \$1/\$2 to \$2/\$4).
- 7 The difference between the actual and the average result, influenced by the factor of randomness in poker.
- 8 A set of different possible hands a particular player can hold in a given situation.
- 9 Consists of 5 cards. You have to use exactly 3 cards from the *board* and exactly 2 cards from your hole *cards* to build a made hand. The player who holds the made hand of the highest rank at the *showdown* wins the pot.
- 10 The value we gain by getting our opponent to fold.
- 11 Players who call pre-flop when there was no raise before them are called “Limper.”
- 12 A situation where exactly two players are left in the hand.
- 13 A situation with three (i.e., 3-way action) or more players left in the hand.
- 14 The player who made the last raise pre-flop.
- 15 A bet by the PFA.
- 16 A very strong made hand.
- 17 A bet by a player who didn’t make the last bet or raise in the previous betting round.
- 18 The player from whose perspective one observes a hand. Typically, Hero represents your hand.
- 19 “Street” is a slang term to address the post-flop phases. The turn is known as 4th street, the river is known as 5th street.
- 20 A community card that likely improves the hand of a player in the pot. An Ace or a 3rd card of the same suit (which makes a flush) are classic scare cards.
- 21 The position in a MW pot directly after the player who made the last aggressive action.
- 22 The opposing player in a poker hand.
- 23 The first re-raise pre-flop is also called a “3-bet”. If this re-raise gets raised again you call it “4-bet” and so on.
- 24 A re-raise after a raise and one or more callers is called a “Squeeze”.
- 25 To have better chances with your hand to win at showdown than your opponents.
- 26 Hands with a high probability of being the best hand pre-flop, then holding up and winning the hand at showdown.
- 27 The x is a placeholder for any card. It typically represents a card that is highly unlikely to help your hand much.
- 28 For the sake of brevity, I will use the abbreviations “ss”(single-suited), e.g. A♥A♣-8♥7♠ = A-A-7-8ss and “ds”(double-suited), e.g. A♥A♠-8♥7♠ = A-A-8-7ds and “rb”(rainbow), e.g. A♥A♣-8♦-7♠ = A-A-8-7rb whenever the exact suits of the hand aren’t relevant.
- 29 The strongest possible “three of a kind”(trips) post-flop, which you can only make when holding a pair

in your hand.

30 Cards on future streets that make you the best possible hand.

31 To raise a player (commonly a limper) with the intention to play a *Heads-Up* pot with him.

32 A raise first-in from the CO, BTN or the SB is considered a “Steal.”

33 A check with the intention of raising when someone else bets. Generally used when holding a dominating hand. In this book I will use both notations “check-raise” as well as “x/r.”

34 A player who rarely folds before reaching showdown. Easily exploitable, as he will always allow you to dictate the action.

35 Blockers are hole cards that we hold, which reduce the probability that another player can make a particular made hand or draw. For example, consider the flop of $A♥K♥10♦$, and we are holding $Q♥Q♦-5♠-3♣$. Our two Queens block the straight draw and our $Q♥$ blocks the nut flush draw. We can also represent both of these hands credibly.

36 There are 52 cards in a poker deck, 13 of each suit. You already know 7 cards (your own 4 and the 3 on the board). As 4 of the 7 known cards are of the same suit, there are theoretically 9 cards out of the remaining 45 unknown cards which make you the flush: $9/45 = 20\%$ (Note: Drawing odds ignore the fact that cards have been dealt to other players and that one or more cards of your desired suit may have been dealt out already).

37 To limp when there are already one or more limpers in the pot.

38 Also known as a “blind vs. blind.”

39 Having such a low SPR, that folding will always be an incorrect play.

40 Betting or raising a hand post-flop that most likely is not the best hand, but has outs to improve. Typical examples are drawing hands like straight draws or flush draws.

41 To play our weaker hands the same way as our strong hands in order to not give Villain any information about our actual hand strength.

42 Windows that open when clicking/hovering over a certain stat of the HUD.

43 Hands that have a reasonably high likelihood at the current state to win at showdown.

44 Betting solely on fold equity to exploit opponents who fold too often.

45 Boat = Full House.

46 Please note for your future calculations that in book notation, “B” means “T, J, Q, or K” (In Equilab B = J, Q, K or A).

47 One card that doesn’t work well with the other three cards in your hand.

48 Also referred to as a “re-steal”.

49 Non-paired.

50 M = middle cards, 10, 9, 8, 7.

51 A weak hand that calls only to win against bluffs.

52 I recommend to round off to 0.5 when estimating implieds.

53 Betting with the intention of sticking the rest of our money in, no matter what happens.

The Video Package



Four hours of additional content demonstrate practical applications of the concepts discussed in this book. This is done by showing thought processes during live play and also by analysing hands played by coaching students. The hand analysis shows how leaks can be identified and then plugged by implementation of the correct strategies.

The video series assumes that you have already read the book, at least to the extent of familiarising yourself with the concepts. If you found the book helpful to your game then the video series is a must, as it will definitely consolidate and amplify this learning.

Contents of the series:

- Setting up the poker client / HUD
- Detailed explanation of the charts
(Starting hands chart, Defending charts, Equity chart)
- First session
- Exploiting your opposition
- Adjusting bet-sizings
- Reviewing leaks of coaching students
- Implementing advanced concepts
(light 3-betting, loose blind defense)
- Hand reading
- Live sessions

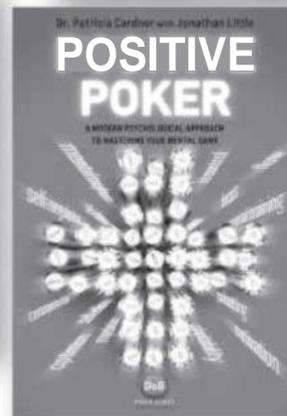
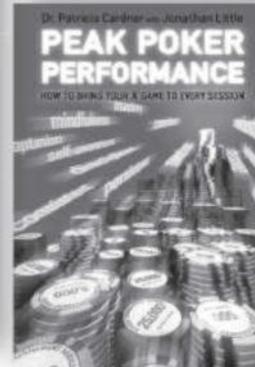
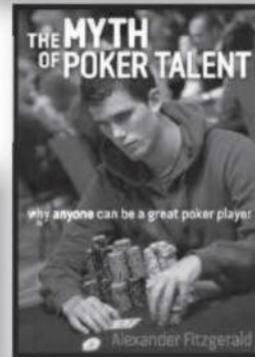
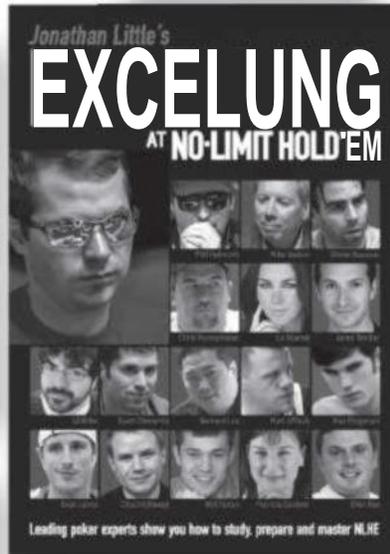
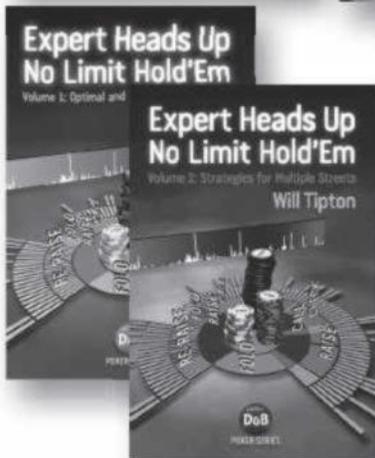
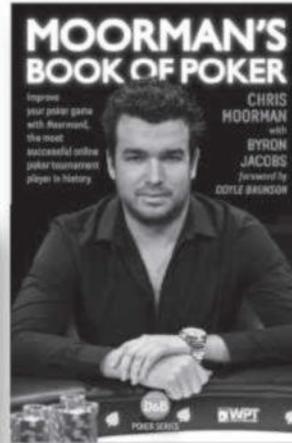
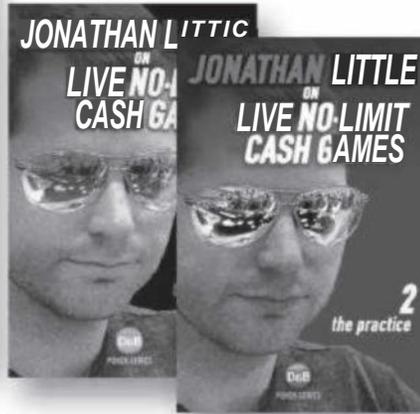
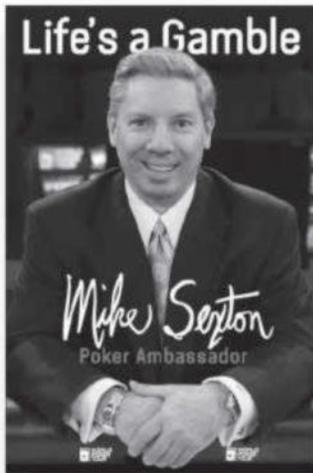


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