POKER SATELLITE
◆ STRATEGY ◆

Dara O'Kearney
with Barry Carter

Poker Satellite Strategy

How to qualify for the main events of high stakes live and online poker tournaments

Dara O'Kearney
Barry Carter

Barry Carter

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www.dokearney.blogspot.com

How to get the most out of this book

To get the most out of this book, we have made some assumptions about how familiar you are with some key concepts in poker. If you are unfamiliar with any of the following assumptions it is perhaps best to do a bit of independent research to bring you up to speed.

The first assumption is that you know how to play poker and understand basic terminology like Big Blind, Flop, 3-bet and Shove. If you do not currently know how to play poker you will be much better off spending your time googling how to play the game and using some of the many free resources available online, before studying satellite specific strategy.

We also assume that you have a basic understanding of how multi table tournaments work. You will have played quite a few of them, you understand the prize structures, you know how the strategy changes at different stages of the tournament and generally appreciate how they are different to cash games. We are heading into very obvious territory now but you should also know what a satellite tournament is. We will cover in depth the differences in approach between regular tournaments and satellites, but you will already be aware that in a satellite all the prizes are of equal value, rather than increasing prizes with every bustout. This is what makes them distinct from other tournament formats and in particular makes the bubble stage (the final position before the surviving players make the money) profoundly important.

You should have at least a small understanding of the concept of Independent Chip Model (ICM). This is a calculation used to understand the current real money value of your chip stack during different stages of a tournament. You don't need to be an expert in this at all because we will be exploring it in some detail, but it would perhaps serve you well to do another quick Google search before you start reading so you at least know what we are referring to.

You should have an understanding of the concept of equity as it relates to a poker hand. For example, it is well documented that most pocket pairs are close to 50/50 against two overcards, so they usually have equity of around 50%. Pocket Aces is a favourite against most hands and has more than 80%

equity against most ranges. At the end of this book we have a chapter for common satellite scenarios that begins with some of the most common equities specific hands have against common ranges. Feel free to skip ahead and take a quick look at that section for a refresher. There are a lot of free poker equity calculators available online and for a smartphone, so if this is a new concept to you please download one of them and play around with it before you get to the 'End Game' chapters.

The examples in this book will not be about how to play a specific hand in a specific spot, but instead will look at different situations and then determine what *range* of hands you would need to call, shove or fold. As a poker player you should always be thinking in terms of your range anyway, but because in super satellites the big decisions you make are preflop, it is particularly important to think about *all* the hands you would play in each scenario. When we look at whether to call an all-in we will not be looking at it from the perspective of Ace King or Pocket Jacks, but the full selection of hands that would make a profitable call, and by inference the full range of hands we wouldn't call with.

With that in mind, when we talk about a range of hands for brevity we start with the weakest part of that range that qualifies. So when we say your calling range is:

AJs+, ATo+, KQs, 88+, A4o-A3o

That means:

AJ, AQ and AK suited
AT, AJ, AQ and AK offsuit
A4 and A3 offsuit
KQ suited
88, 99, TT, JJ, QQ, KK, AA

Are all part of that range.

To highlight specific situations you find yourself in at the tables, we will be using tables that not only show the ideal shoving ranges, but also the ideal calling ranges of those shoves. This is so you can look at each scenario from

the perspective of the aggressor *and* the defending player. For example, in this scenario:

GTO Shoving Range		
CO	**40,000**	**100% Any Two**
GTO Calling Range		
BU	10,000	1.8% JJ+
SB	9,500	2.3% TT+
BB	19,000	0% No Hands Can Call

In this situation the first player to act is the Cut Off (CO) with 40,000 chips, and with this table configuration they should shove any two cards. However, if you find yourself in the position of the Button (BU) and you believe the CO is pushing a wide range, you can call with JJ, KK or AA. If you are the Big Blind (BB) in this scenario then you would fold all of your hands.

In this next example we are simply showing the different shoving ranges for every position at the table. This is why there is no range for the BB because they are last to act. UTG+1's range is based on the assumption that UTG has already folded, MP1's range is based on the assumption that UTG and UTG+1 have folded, and so on.

Shoving ranges by position		
UTG	10,000	18.9% 33+ A2s+ ATo+ A5o K9s+ QTs+ QJo JTs
UTG+1	10,000	17.5% 44+ A2s+ ATo+ A5o K9s+ KJo+ QTs+ QJo JTs
MP1	10,000	22.2% 22+ A2s+ A9o+ A5o K5s+ KTo+ Q9s+ QJo J9s+ T9s+
MP2	10,000	24.1% 22+ A2s+ A9o+ A5o K4s+ KTo+ Q9s+ QTo+ J9s+ T9s+
MP3	10,000	29.8% 22+ A2s+ A7o+ A5o-A3o K3s+ KTo+ Q8s+ QTo+ J8s+ JTo T8s+ JTo T8s+ 98s
CO	10,000	39.1% 22+ Ax K2s+ K9o+ Q4s+ Q9o+ J7s+ J9o+ T7s+ T9o 97s+ 86s+ 76s 65s
BU	10,000	51.3% 22+ Ax K2s+ K6o+ Q2s+ Q8o+ J2s+ J8o+ T5s+ T8o+ 95s+ 98o 85s+ 87o 75s+ 64s+ 53s+
SB	9,500	78.9% 22+ Kx+ Q2s+ Q3o+ J2s+ J4o+ T2s+ T6o+ 92s+ 95o+ 82s+ 85o+ 72s+ 75o+ 62s+ 64o+ 52s+ 54o 42s+ 32s+

There are a lot of different scenarios we are covering so we have tried to make these tables as bespoke as possible. Do not worry if these tables look intimidating. You are not expected to memorise these tables nor should you try to. We use them in this book to highlight the difference between ranges in two scenarios. So we might highlight how ranges change between 10 big blinds and 20 big blinds, or between tight players and loose players. Instead of trying to remember these ranges, try to remember how they change in different scenarios. We are developing your ability to adapt rather than to memorise specific spots.

The Small Blind (SB) and Big Blind (BB) in each example will have already posted their blinds, which is why their stack will be slightly smaller than described. Unless otherwise stated the standard stack will be 10 big blinds, with a stack worth 10,000 and blinds at the 500/1,000 level. We have not included antes in any of the tables just to keep things simple.

Throughout this book when we present the ranges of hands you should be shoving and calling with, we will begin with ranges that are Game Theory Optimal (GTO). This means we are making the assumption that everyone at the table is playing perfectly, and calling and shoving with the right ranges. We use GTO as a baseline because it is harder to exploit, especially in tough games, and also because when you don't know how your opponents typically play it is the best default strategy. In reality nobody plays perfectly and as the book develops we are going to show you how to adjust from GTO ranges

when you have a read on a player which you can exploit, for example, if they fold more hands than would be optimal. Don't get married to the GTO ranges, just use them as a foundation to diverge from when you learn more about your opponents.

We have a general assumption that you are a serious amateur player rather than a professional. The advice in this book is aimed at both amateurs and professionals alike (in fact some of it we consider very advanced), but it is written mostly with amateurs in mind to make it accessible to both parties.

We have ordered the content in this book in terms of importance for your own satellite game. We start with some quick tweaks you can make right away, then we cover the bubble stage of satellites in depth afterwards because that is the most important stage, then we explore further topics in order of their relevance. So while it may not be structured as you would expect a poker book to be, we think you will see the benefits sooner in your game.

Finally, we want to make it clear that this book will be covering super satellites, where more than one prize of equal value will be won. These are by far the most common form of satellite and the format we believe merits a strategy book of their own. We will not be covering Winner Takes All Satellites with a single prize on offer, because the approach used for them is that of a ChipEV strategy where cash game advice would be more appropriate.

With the obvious out of the way, let's dive in...

Chapter 1. Why play satellites?

The fact that you have bought this book means you have your own reasons for playing satellites, but there are probably a few that you may not have thought of.

The first, most obvious, and perhaps best reason to play in a satellite is because it means you can play an event beyond your bankroll for a fraction of the price. If you have only dreamt about playing a World Series of Poker or European Poker Tour event, then the best route to playing one is by winning a package online. If the $10,000 or €5,300 buy-in is out of your price range, but $215 is not, then you could parlay your satellite skills into a seat in one of these events.

Not only does this give you an opportunity to play an event you otherwise would have no chance of playing, it also gives you a mental game advantage. You'll be competing for a prize pool otherwise beyond your means, so the event is less stressful for you because you can reflect on it as only costing you $215. Whenever you face a big decision for your tournament life you can shrug your shoulders and take a profitable risk, knowing that this once-in-a-lifetime trip only cost $215. Later on in this book we will be exploring the correct way of approaching bankroll management in satellites (which differs if you are a pro or an amateur) but until then we will assume you are playing with an amount you can afford to lose.

Often the satellites for live events come with travel expenses and spending money, as well as special events exclusive for qualifiers during days off like meals, nights out and tourist experiences. This means that at the very least, satellites give you the opportunity to travel and have a holiday experience, even if you bust out early. Some online poker rooms also have 'Last Longer' style promotions between fellow qualifiers with a separate prize for the last remaining online qualifier.

When amateur Chris Moneymaker famously won the World Series of Poker Main Event, he did so via an $86 satellite win. He won $2.5 million from a satellite entry, a prize pool you would never see in an $86 tournament

(It's also worth googling the story of that satellite win, because he had no idea he was playing a satellite at the time). The upside of satellites can be huge.

Those are the obvious reasons to play satellites, but there are a lot of other reasons why satellites remain one of the best kept secrets in poker.

First of all, they are the format of poker which most frequently miss their guarantees. A guarantee in poker is an advertised minimum prize pool where, if not enough players turn up, the operator makes up any shortfall. For example, if an online poker room has a $10 buy-in satellite which guarantees 10 x $100 seats, but only 50 of the required 100 players turn up, then the poker room has to pay the $500 overlay. This effectively makes your $10 buy-in worth $20 without any increase in difficulty and, in the case of satellites, your chance of winning a seat doubles. Poker operators are usually quite good at estimating what their guarantees should be, but satellites, especially satellites to live events, routinely get it wrong. It happens rarely, but most satellite regulars have experienced the situation where the operator has estimated the interest in the satellite so poorly that the number of seats guaranteed is almost the same as the number of players registered, and as a result some players win a ticket without playing a hand.

Another reason to play satellites is that they present a viable way to make money in and of themselves. If you have already won a package, most poker rooms will credit you with the cash value of the package if you go on to win a second package. I am quite well known in poker for twice finishing on top of the PokerStars UKIPT Satellite leaderboard where I would frequently win a £2,000 package to a UK or Ireland event, then go on to win another ten packages before the event started meaning I was over £15,000 up before playing in the target event. Other operators will actually allow you to unregister from the destination event and take 'Tournament Dollars' (T$) instead. These work the same as regular money, but they must be used to play in tournaments on the site, so the site keeps you playing in their games but you have flexibility. In the case of satellites held in live casinos they tend to let you just take the cash there and then. This is a viable method of making money but before you embark on it, make sure you know:

1.   If you are playing a 'must play' satellite where you are forced to progress to the destination event

2.   What the operator's policy is on unregistering and/or multiple seat wins

3.   When the event starts. If it is online and starting soon, you may be automatically seated at the destination event with no choice to unregister (This isn't always a bad thing, I once made this error and ended up winning the Super Tuesday for $86,286, my biggest online score)

At the time of writing, online poker sites vary in what their policy is towards satellite grinders so rather than date the material in this book we won't specify which site has which policy. It is a useful practice to check out the satellite policy whenever you play somewhere new, because it is constantly evolving.

The best reason to play satellites, however, is because they are by far and away the softest form of poker regularly available. It seems very counterintuitive because fundamentally satellites are perhaps the most formulaic, solvable form of poker you can imagine, but that is assuming everyone who plays in them is playing Game Theory Optimal (GTO), which they very rarely are. The biggest and most frequent error in satellites is when somebody 'plays for the win' and makes decisions that might maximise their chips in a regular MTT, but in a satellite it would be a suicidal tactic. In satellites everybody is playing for prizes of equal value, so it doesn't matter if you end with 50% of the chips in play or a single big blind, you win the same prize. Putting your chips at risk in a high variance spot, even when it would be profitable in a MTT or cash game, is a huge error in satellites, where the name of the game is reducing variance. Not only do you see recreational players needlessly bleeding chips on the bubble in satellites, you also see otherwise talented MTT regulars unable to make the necessary ICM adjustments. They can also play too tight, which is also good news, because they are easily pushed off hands on the bubble. Either way, many MTT regulars look down their nose at satellites and do not put in the work they need to thrive in them. In fact, plenty of MTT regulars will scoff at the existence of this book in the first place, arguing it is too simple a form of poker to justify a book, whilst simultaneously making basic errors in them.

Just because satellites are soft overall, do not think for one second that you are not going to improve as a player by specialising in them. There is a misconception in poker that 'good satellite regs are bad MTT regs' and that someone would only play satellites because they cannot beat regular tournaments. This is probably because if you see an amateur player make a schoolboy error in a major tournament, they probably won their seat in a satellite, so it's a selection bias. However, if you look at the players who crush the biggest satellites regularly, they are often some of the best players in the world. The players who beat up the old Steps satellites on PokerStars back in the day, or the players at the top of the partypoker PPL leaderboard at the time of writing, are among the biggest winning online MTT regulars as well as the crushers in the live Super High Roller tournaments. It's a bell curve where weak players make up a lot of the field but some of the best players in the world specialise in them (However there is plenty of money to be made for those in the middle). Satellite regulars in particular have an acute understanding of ICM that even very good MTT regulars do not have. So while the games are soft at the low levels, the opportunity to become an ICM master at the top end knows no bounds.

It is precisely because satellites have been overlooked by the serious poker community that they remain a uniquely profitable form of poker. This book should provide you with all the tools you need to quickly remove some of the biggest leaks from your game as well as provide a framework for improving even further on your own. Let's start with some of the easiest tweaks you can make to your game that will have the biggest impact.

Chapter 2. Satellites in 30 Minutes

To get the most out of this book we want you to give you the foundations to review your own play away from the tables, so you develop a solid understanding of satellite endgame and ICM when you are at the tables. We want the common scenarios to have come up so frequently in your self study that when they present themselves at the table you automatically know what your shoving, folding and calling ranges will be.

We know this process will take some time. You are not expected to read a book in one sitting. In fact you probably should be making notes and returning several times to important sections. Nor are you expected to not play poker before you complete the book. We also appreciate that you may be reading this book for the first time literally on your way to play in a satellite or are sat reading it at the table right now. To begin with we want to fix the biggest leaks in your satellite game right away so you can see the important concepts working in practice before you get deep into the theory. If you are already a competent player, following our simple rules below could make you a small winner in satellites.

The Bubble is All or Nothing

The bubble of a poker tournament is the point where one player is left to bust out before everyone makes the money. You either end the tournament inside the money bubble, or outside of it. This is significant in a regular tournament but in a satellite when the bubble is over the tournament ends. Busting out of a regular tournament on the bubble stings but if you were playing for the win then it's easy to recover from. Making a mistake on the bubble of a satellite is so much more costly, because there is only one prize you can win and it is usually much bigger than a regular MTT min cash. We will elaborate on this as you read on, but always keep in mind that the nearer you are to the bubble, the more mistakes are magnified.

The Philosophy of Satellites

A non-poker friend once asked me why I seemed to be a much better player in super satellites than "real tournaments". It seemed pointless to even bring up ICM, so to put it in layman terms. I said that if normal tournaments were war, then satellites were more like the Cold War. Late on in a satellite,

you need to display to your opponents that you are willing to engage, while doing everything possible to avoid actual confrontations. Merely understanding that gives you an advantage over opponents who had never heard of mutually assured destruction.

This viewpoint should point you towards your own biggest leaks when it comes to super satellites. Either you are playing like a maniac and playing too many hands (especially calling too much) or everybody knows you are willing to blind yourself out to make the money so you will be seen as a soft target. Neither approach is ideal, so keep this in mind before anything else. You have to appear dangerous, so ideally you'll have been seen playing aggressively when you get the hands to do so. But you want to avoid confrontation as much as possible. This runs contrary to regular MTTs where you could say that the philosophy of them is to realise your equity, by getting your strong hands paid, as much as possible so you can build a big stack for the final table.

Play Tight and Reduce Variance

The fundamental difference between satellites and regular multi table tournaments is that you are playing for prizes of equal value. That should be obvious, but it is important to repeat - you are playing for prizes of *equal* value.

There is no difference between the Viktor Blom wannabe who is raising every hand and has accumulated 60% of the chips in play, and the tight player who sneaks over the line with three big blinds. When the tournament is over they have both won a ticket to the same event. In reality, the difference between the two players is that the tight player is going to win more seats over the course of their satellite career.

In a regular MTT it pays to take risks, because the name of the game is finishing as high as possible, where the big prizes are. ICM obviously does play a factor in MTTs but taking calculated risks to build a big stack helps you get to the big money payouts. Calling a raise with a small pair in the hopes of making a set, chasing a draw because you think your opponent will pay you off or making a call with an inferior hand because you are priced in - these are all tactics which will see you bust early from MTTs, but when they

pay off they put you in a good position to secure a massive payday.

Playing to min cash is a terrible long term strategy in MTTs but in satellites a min cash is the goal. The number of times you cash is much more important than your ability to crush the field, so that means reducing the number of times you bust by not taking needless risks.

You do have to build a stack to get you to the bubble, but you should look to adopt a tight aggressive strategy and remove any high variance plays from your arsenal. That means once the blinds have started to get big - no set mining with small pairs, no chasing draws with suited connectors, no coin flips and avoid defending with poor holdings because you are priced in. These moves may be ChipEV correct but they reduce your chances of having a survivable stack come bubble time.

Once the blinds are big and the stack sizes become shallow, consider open shoving your strong hands to avoid being reshoved over, even if you have 20 or 30 effective big blinds. If you open to 2.5x big blinds as your standard bet and get shoved on you are going to have to fold so often that this is sure fire way to get blinded down to a micro stack. Generally, you will get a lot more folds when you open shove in a satellite compared to a regular MTT, but that doesn't mean do it with a wide range. Do it with hands you don't mind getting called with.

Fold equity is the most important form of equity in a super satellite. You should be looking to give your opponents an opportunity to fold, even when you have a very strong hand. Trapping and inducing is a great strategy when you are trying to win the whole tournament but the more you avoid showdown, the more likely you are to survive to the bubble. If you see players open shoving 30 or 40 big blinds and showing up with strong hands like JJ or AQ, this is actually a sign of a seasoned satellite player. Don't dismiss them as playing incorrectly - you should be doing the same.

Avoid Calling

By far the biggest errors you will see in satellites, and we will be covering this in depth later, is when players call all-ins too widely. The best way to reduce variance is to dramatically reduce the range you are prepared to call an all-in with when the amount you would stand to lose would hurt you

severely or eliminate you. Quite simply you are putting yourself at the mercy of the deck when you call an all-in, and in satellites we want to avoid high variance showdown situations as much as possible.

This is why, when the blinds get big, it is more prudent to open shove a strong range, rather than open raise and then face the prospect of calling a reshove. When you are the first player to go all-in you put the pressure on the other players and most of the satellite savvy regulars will want to avoid a flip too. You give yourself two ways to win when you are the one putting pressure on others by going all-in - you can get them to fold or you can win the hand at showdown if they call. When you are the one facing an all-in call, there is only one way to win and that is to have the best hand at showdown.

This does not mean you should eliminate calling from your range. If you flop a full house and your opponent shoves you obviously will be calling. What this does mean is that, until you have gone through the more in-depth strategy in this book, you should narrow your own calling ranges. Think about what you would normally call with in the same spot in a regular MTT and reduce that by maybe a factor of three. So if you would normally call with 99+ and ATo+, maybe make the equivalent satellite range QQ+ and AKo+.

Don't get too bogged down in the perfect adjustments at this stage, we are just trying to plug the most obvious leaks between now and when you have completed this book. Until then just think about your calling ranges and tighten them up perhaps to the point where you think you have tightened them up a bit too much. There are spots where folding Aces is correct in satellites so you probably can afford to play tighter than you currently are.

Bully the Players With Everything to Lose

This rule is more of a general guide when you don't have any reads on the table. Your reads should always supersede any general advice, but until then it is usually better to be aggressive against the players who are currently safe but who wouldn't be if they lost after calling a shove to you. These players are better to be aggressive against than the small stacks. When it gets near the bubble and players are stalling, everybody knows that unless two cooler hands come up against each other, the small stacks are going to blind out. So

while the conventional wisdom would be to shove on the big blind of a small stack in regular MTTs as they desperately cling on to the money, in satellites those players know that nobody else in the tournament is going to do them any favours. In a regular MTT, you can hope for Queens against Ace King on another table, but in a satellite you have to expect one of those hands would fold to avoid a variance war. So for this reason, good short stacks in a satellite will realise they are going to have to gamble to stay in the game at some point. They'll be hoping to do so by shoving more, but if they wake up with a good hand against a habitual shover they may have to call.

It is much better, therefore, to identify the players at the table who have everything to lose by calling on the bubble. The players who, if they just sat out, would coast to winning their seat. So we are looking for players who have the average stack and in an online tournament it is worth looking at their actual position in the tournament lobby. If they are inside the bubble, especially if they are inside the bubble by more places than there are players left to bust, they are usually going to fold almost everything in the face of a shove. They don't want to be eliminated for no reason, nor do they want to be reduced to a small stack if they have you covered. If they appear to be stalling a lot anyway, that's a good sign they don't want to play any more pots.

Do not adopt this strategy against the players who have a huge stack. The players who could lose several flips in a row and still have an average stack are the same players who may want to end the tournament risk free but in some cases may spite call you.

How to Estimate the Stack you Need

Unlike a normal tournament this is not a game where the goal is to accumulate all the chips. In fact playing in that manner is one of the worst things you can do in satellites. Satellite newbies will often make the mistake of slowing down too early in satellites, and then blinding away, or continuing to build a stack when they might be better advised to sit out and wait for the bubble to burst.

When you enter a satellite the first thing you need to be aware of is what the average stack will be on the bubble. Once you get to the average stack on

the bubble, you can slow down and pick your spots more carefully, because while you have an average stack, you can safely bet some players will have very big stacks and way more will have micro stacks fighting for their lives. Once you get to about 70% of the target stack, slow down and don't take any unnecessary risks.

The simplest way to work out the target stack you'll need is to see how many buy-ins make up a package you are playing for and multiplying that number by the starting stack. So if you are in a $10 tournament to win a $100 token and the starting stacks are 10,000, that would be 10 players x 10,000 chips = 100,000 target stack. You are aiming for a 100,000 stack on the bubble and once you get to about 70,000 you should prioritise maintaining that stack rather than gambling trying to double up. This calculation is also usually a reliable indicator of what the blind level will be on the bubble. Usually the average stack has ten big blinds on the bubble so in the above example the blind level is likely to be 5,000/10,000.

When to Lock Up

While you should be aiming to get to the target stack, the actual stack you need to get over the line depends on a number of factors, most notably how many seats there are to be won. In general a satellite with five seats on offer will require you to attain a greater target stack than a satellite with 50 seats to be won, because the more players in the satellite there are, the wider the spread of stacks will be.

Once you get closer to the bubble a much simpler way of working out whether you are close to guaranteed a seat is this simple heuristic:

When you are inside the bubble, if there are more people outside the bubble than there are positions between you and the bubble, you usually are guaranteed a seat.

For example, if you are currently 70th of 120 players and 100 players win a seat. In this case, there are 30 players between you and the bubble and a further 20 players outside the bubble. That means that you could blind out and make the money, because those 20 players outside the bubble would need to make a move before you. A further 30 would be in trouble before you.

Your correct strategy in this situation would be to fold every hand, even premium hands like Aces and Kings (unless the person shoving into you has a very small stack which would mean nothing for you to call). The downside of calling and losing is greater than the upside of calling and winning by an order of magnitude. This cannot be stressed enough. Perhaps the most common way new players bubble a satellite starts with them playing a premium hand when they had no reason to. Most satellite bad beat stories start with "I had Aces" when in reality that player should have folded them preflop.

You should also stall every hand when you have a seat locked up, because the fewer hands your table plays during the bubble, the longer you preserve that very safe stack by posting less blinds and antes.

In the same example, if you are 90th of 120 players with 100 seats, the situation is different. You should still be playing extremely tight Lock up when you are inside the bubble because you are still likely to make the money, but a slow bubble and a few double ups from shorties could land you in trouble. You should still fold strong hands and avoid confrontation with players who have you covered, but when you get dealt big hands or see spots to bully a very tight player, you should go for it.

If you are outside the bubble you should usually be looking to make a move. If you are 110th of 120 and 100 get a seat, you will blind out before the other players and you cannot assume 10 players will make a horrendous mistake ahead of you. You should be looking at getting your money in wherever you see a profitable spot.

Key Takeaways

- Avoid calling all-ins
- Take the lower variance lines
- Fold equity is the most important form of equity in satellites
- Work out what the average stack is likely to be on the bubble and tighten up when you get 70% of the way there
- Lock up when you are inside the bubble by more positions than there are players outside of the bubble

Chapter 3. Endgame

Why are we learning endgame first?

It's common in multi table tournament poker books to learn the early deep stack stages first, then the mid game, then the final table, then heads-up. This is because you are going to encounter the early stages first when you start, you will encounter them more often and if you cannot even proceed past them the rest of the material is moot. In this book, however, we begin our detailed analysis by jumping right to the endgame strategy of satellites.

There is a popular school of thought in chess that the correct way to teach the game is by learning the endgame first. Checkmates are the most important part of chess and understanding this stage of the game influences every decision that leads up to it. The best early game strategy is completely useless if you have no idea what you are doing when it gets to the business end of the match. The few remaining chess pieces you have become much more valuable than at the start of the match. And it is much, much, harder to recover from an endgame mistake than it is to recover from one made at the start of the match.

The exact same is true in super satellites. The bubble in a satellite is the checkmate stage of a chess tournament and you should always make earlier decisions with the bubble in mind. If you don't understand the satellite bubble, everything that led up to it is pointless. Endgame in satellites really is all or nothing, and bubbles can go much longer than in a regular MTT. While you will more frequently find yourself in the early stages of a satellite, finding yourself without a solid satellite bubble strategy has the most profound impact on your win rate. Just like in chess, it is much harder to recover from a mistake made on the satellite bubble than it is to recover from a mistake made in the early blind levels.

The ICM pressure is so extreme at the end of satellites and so different to what you might be used to in regular tournaments, that endgame is where we have to start.

If you are skeptical about learning endgame first or are concerned you won't be able to put it in the practice right away, find an online site that offers Double or Nothing (DoN) SNGs where you can essentially practice final table satellite situations. The strategy is exactly the same in DoNs because the prizes are of equal value and they give an adept satellite grinder a chance to put more volume in.

We have written distinct chapters for studying endgame strategy, one for shoves and one for calls. You will occasionally find yourself playing flops on the bubble but in reality 99% of your decisions will be shove/call/fold. We also have a third endgame chapter for shoving over limps and opening raises.

Chapter 4. Endgame - calls

Let's start with understanding when to call and when to fold to shoves, because by an order of magnitude it is the most important skill set in super satellites. The most costly errors you will see on a daily basis in satellites are when players call too wide. A bad fold is often only a small mistake in a super satellite, a bad shove at least has the potential to take down the pot uncontested even if it was an error, but calling too wide when you have no reason to get involved is the cardinal sin of super satellites. If you are a player on the other end of the spectrum who calls too tight then don't assume you can skip this chapter either. It can be a mistake to fold too much. Later on we will highlight a specific situation which comes up where you should be calling very wide that a lot of otherwise decent satellite regulars don't know about.

ICM

The biggest thing that distinguishes super satellites, with prizes of equal value, from normal tournaments, with increasing top heavy payouts, is that ICM is a much bigger factor. There's an entire generation of online MTT players who never got round to learning ICM the way those of us who cut our teeth in SNGs had to. In regular MTTs they can get away with this knowledge gap, as ICM is not that big a factor most of the time. However, in super satellites they regularly make loose calls near the bubble that might be profitable in a normal MTT, but in a satellite are the equivalent of lighting a cigar with a wad of cash in a restaurant in front of the smoke inspector.

The most important concept to understand in satellite poker is the Independent Chip Model (ICM). As stated at the start of this book we made the assumption that you at least have a basic understanding of what ICM is in tournament poker but what follows now is a primer which shows why it is particularly important in super satellites.

ICM is a model used to calculate your overall equity in a poker tournament and what your chips are currently worth based on the payout structure. It explains how the value of your chip stack changes throughout a

tournament. In a cash game if you sit down with $1,000 each chip is worth the actual cash denomination it represents, so a $25 chip is indeed worth $25. Strategically this is what we refer to as a ChipEV situation.

If you sit down in a $1,000 multi table tournament with 100 players in it and a 10,000 starting stack then at the start of that tournament your stack is worth $1,000 (let's assume no rake for this example) and a 1,000 chip is worth $100. However, if you go on to win that 100 person tournament you may only win $30,000 even though there is $100,000 in the prize pool. You have accumulated all the chips but not all the cash. That same 1,000 chip that was worth $100 at the start of the tournament is now actually only worth $30. Where did all the money go? Well, it went to the other players in the form of payouts.

In a standard tournament with normal payouts the cash value of the chips devalue after every payout. The prize pool shrinks with every bustout but the chips remain in play. The average value of the chips remain the same in the tournament until the bubble. This is why a ChipEV decision (one which would be correct in a cash game or winner takes all tournament) is not necessarily going to be the same as an ICM decision (a decision which is profitable in terms of your tournament equity). A call which would, on average, increase your chips, on the bubble can often be unprofitable in terms of real money payouts. This is because all the times you lose you not only miss out on chips but also a payout, whereas folding keeps you in with a shot at making the money.

The value of your chips are fluid throughout the tournament, they go up and down depending on your stack size, your opponents' stack size, the stage of the tournament and the payout structure. The shorter your stack, the more each single chip is worth, especially after the bubble. If the first payout in a tournament is $2,000 when the bubble bursts then a player with 100 big blinds will find each blind is worth $20 but a player still hanging in there with 10 big blinds has 10 blinds worth $200 each.

The more extreme the payout structure, the more the chip values differ by stack size. When we say extreme, in this context we actually mean flat. In a normal MTT 1st place gets more than 2nd, 2nd gets more than 3rd, and so on. In a super satellite, however, 1st might get the same as 20th. All of this

means that ICM mistakes are much more profound in super satellites than in any other format. Because all the prizes are of equal value, after the bubble all the stacks are worth the same amount in real money terms. A six big blind stack is worth the value of the seat just as a 100 big blind stack is. Accumulating a massive stack on or around the bubble is far from an optimal strategy because the tournament ends straight after. You don't need to keep building to get to the final table with a shot at winning and the chips you win are not worth much extra in equity.

Calling Ranges

We've already emphasised how important it is to avoid calling in satellites, now let's put some numbers behind that. We are going to present a number of examples which for argument's sake assumes that everybody has 10 big blinds and that the shoving ranges we are facing are Game Theory Optimal (GTO). Don't get too married to these examples, they do not take into account factors like when you have a much bigger stack, or a much smaller stack, or the presence of micro stacks or maniacs at your table, as well as 20 other factors that are relevant. They are just here to demonstrate how dramatically your calling ranges should tighten up almost all the time in super satellites compared to other formats. Once you have internalised these, you can play around with the numbers and experiment using an ICM calculator. Experimenting with your own hands is the best way to develop an understanding in the moment of each unique situation you are presented with at the tables.

Below is a chart with your 10BB calling ranges from every position in a standard MTT, followed by the same one at a nine handed final table with four satellite seats on offer. For argument's sake everyone has equal stacks. The blinds are at 500/1,000.

Let's take a look at just the early position calling ranges for a shove:

Early Position Shoving Ranges (No ICM)		
GTO Shoving Range		
UTG	**10,000**	**17.8% 22+ A4s+ ATo+ K9s+ KJo Q9s+ J9s+ T8s+ 98s+**
GTO Calling Range		
UTG+1	10,000	8% 77+ ATs+ AJo+ KQs
MP1	10,000	8.3% 66+ ATs+ AJo+ KQs
MP2	10,000	8.3% 66+ ATs+ AJo+ KQs
MP3	10,000	9% 66+ A9s+ ATo+ KQs
CO	10,000	10% 55+ A9s+ ATo+ KQs
BU	10,000	10% 55+ A9s+ ATo+ KQs
SB	9,500	12.2% 44+ A7s+ ATo+ KJs+ KQo
BB	9,000	18.7% 33+ A2s+ A7o+ KTs+ KJo+ QTs+ JTs+
Early Position Shoving Ranges (Satellite with Four Seats)		
GTO Shoving Range		
UTG	**10,000**	**20.7% 33+ A2s+ ATo+ A5o K6s+ KTo+ Q9s+ QJo JTs**
GTO Calling Range		
UTG+1	10,000	3.2% JJ+ AK
MP1	10,000	3.7% TT+ AQs+ AKo
MP2	10,000	3.7% TT+ AQs+ AKo
MP3	10,000	3.7% TT+ AQs+ AKo
CO	10,000	3.7% TT+ AQs+ AKo
BU	10,000	3.7% TT+ AQs+ AKo
SB	9,500	5.4% 99+ AJs+ AQo+
BB	9,000	7.5% 77+ ATs+ AJo+

To highlight the divergence from non-ICM calling ranges, UTG+1 has shifted from being able to call with 77 to having to fold TT. In a satellite, generally we can only call with about 40% of the range we would have called with in a non-ICM spot. This is by far the biggest mistake you'll see in satellites because not only do some players use tools like SnapShove to determine their shoving ranges but also their calling ranges, which really is burning money in a satellite.

As a quick heuristic for people who have previously been using apps like SnapShove in MTTs, ask yourself if you are in the top 40% of your normal SnapShove range? This is essentially over half your standard calling range in

most satellite spots on the bubble.

Another way of looking at it is to increase your range by four 'pips' ie. 66 becomes TT, 88 becomes QQ etc. Suited Aces increase by 2-8 pips, so A6 suited becomes AT suited. Unsuited Aces increase by 2-4 pips, so A9 becomes AJ etc. As a general rule broadway hands like KJ and KQ should disappear from your range entirely. There are no calls with even KQ suited in this calling range.

Now let's look at mid-position shove calling range:

Middle Position Shoving Ranges (No ICM)		
GTO Shoving Range		
MP2	**10,000**	**24.5% 22+ A2s+ A7o+ A5o K9s+ KTo+ Q9s+ QJo J8s+ T8s+ 98s 87s**
GTO Calling Range		
MP3	10,000	11.2% 55+ A8s+ ATo+ KJs+ KQo
CO	10,000	12.4% 55+ A8s+ A9o+ KJs+ KQo
BU	10,000	13.1% 44+ A7s+ A9o+ KJs+ KQo
SB	9,500	16.9% 33+ A4s+ A8o+ KTs+ KJo+ QJs
BB	9,000	24.3% 22+ A2s+ A4o+ K9s+ QTs+ QJo JTs

Middle Position Shoving Ranges (Satellite with Four Seats)

GTO Shoving Range		
MP2	**10,000**	**26.2% 22+ A2s+ A8o+ A5o-A4o K4s+ KTo+ Q8s+ QTo+ J9s+ T9s**
GTO Calling Range		
MP3	10,000	4.7% TT+ AQ+
CO	10,000	4.8% TT+ AJs+ AQo+
BU	10,000	5.4% 99+ AJs+ AQo+
SB	9,500	5.4% 99+ AJ+
BB	9,000	8.6%% 77+ AT+

And then late position:

		Late Position Shoving Ranges (No ICM)		
		GTO Shoving Range		
BU	**10,000**	**43.7% 22+ Ax K2s+ K5o+ Q5o+ Q9o+ J7s+ J9o+ T6s+ T9o 96s+ 86s+ 75s+ 65s 54s**		
		GTO Calling Range		
SB	9,500	29.4% 22+ Ax K6s+ K9o+ Q9s+ QTo+ J9s+		
BB	9,000	37.9% 22+ Ax K2s+ K5o+ Q6s+ Q9o+ J8s+ JTo T8s+ 98s		
		GTO Shoving Range		
SB	**9,500**	**68.6% 22+ Qx+ J2s+ J5o+ T2s+ T7o+ 95s+ 97o+ 84s+ 86o+ 74s+ 76o 63s+ 53s+ 43s**		
		GTO Calling Range		
BB	9,000	53.5% 22+ Kx+ Q2s+ Q4o+ J4s+ J7o+ T6s+ T8o+ 97s+ 87s		
		Late Position Shoving Ranges (Satellite with Four Seats)		
		GTO Shoving Range		
BU	**10,000**	**52.6% 22+ Ax K2s+ K5o+ Q2s+ Q8o+ J2s+ J8o+ T4s+ T8o+ 95s+ 98o 85s+ 87o 75s+ 64s+ 53s+**		
		GTO Calling Range		
SB	9,500	10% 77+ A8s+ ATo+ KJs+		
BB	9,000	18.4% 55+ A3s+ A7o+ K9s+ KTo+ QJs		
		GTO Shoving Range		
SB	**9,500**	**82.8% 22+ Qx+ J2s+ J4o+ T2s+ T4o+ 92s+ 95o+ 82s+ 85o+ 72s+ 74o+ 62s+ 64o+ 52s+ 54o 42s+ 32s+**		
		GTO Calling Range		
BB	9,000	29.7% 44+ A2s+ A3o+ K5s+ K7o+ Q8s+ QTo+ JTs		

You'll notice in all the charts that the later you are in position, the more often you can call, because you get to close the action. If you have AQo UTG+1 then you have to worry about seven other players calling behind you, but when you are the Big Blind you get to close the action so you can call much wider. That is a general principle of calling ranges, they open up when you are late position. It is less about having chips already in the pot, because as we know ChipEV is much less of a factor in super satellites. It's more about the fact you can end the action without the worry of somebody else calling or shoving after you.

Now let's look at a different example, a nine handed table where six seats are on offer.

Early Position Shoving Ranges (No ICM)		
GTO Shoving Range		
UTG	10,000	17.8% 22+ A4s+ ATo+ K9s+ KJo Q9s+ J9s+ T8s+ 98s+
GTO Calling Range		
UTG+1	10,000	8% 77+ ATs+ AJo+ KQs
MP1	10,000	8.3% 66+ ATs+ AJo+ KQs
MP2	10,000	8.3% 66+ ATs+ AJo+ KQs
MP3	10,000	9% 66+ A9s+ ATo+ KQs
CO	10,000	10% 55+ A9s+ ATo+ KQs
BU	10,000	10% 55+ A9s+ ATo+ KQs
SB	9,500	12.2% 44+ A7s+ ATo+ KJs+ KQo
BB	9,000	18.7% 33+ A2s+ A7o+ KTs+ KJo+ QTs+ JTs+
Early Position Shoving Ranges (Satellite with Six Seats)		
GTO Shoving Range		
UTG	10,000	61.5% 22+ Qx+ J2s+ J7o+ J5o T6s+ T9o 95s+ 85s+ 74s+ 63s+ 65o 52s+ 42s+
GTO Calling Range		
UTG+1	10,000	1.4% QQ+
MP1	10,000	1.4% QQ+
MP2	10,000	1.8% JJ+
MP3	10,000	1.8% JJ+
CO	10,000	1.8% JJ+
BU	10,000	1.8% JJ+
SB	9,500	1.8% JJ+
BB	9,000	4.2% 99+ AQs+ AKo

You will instantly notice that the calling ranges get even tighter, even as, in this example, we have made an assumption that UTG is shoving much wider. You still are throwing away JJ and AK in a lot of positions in this situation. This is because we are much nearer to the bubble, so we need a much stronger hand to justify risking elimination. You are only calling about 20% of the hands that you would call in a non-ICM situation. The big pairs retain their value but even AKs disappears from most of the positions except the Big Blind.

Now the same table facing a mid position shove:

Middle Position Shoving Ranges (No ICM)		
GTO Shoving Range		
MP2	**10,000**	**24.5% 22+ A2s+ A7o+ A5o K9s+ KTo+ Q9s+ QJo J8s+ T8s+ 98s 87s**
GTO Calling Range		
MP3	10,000	11.2% 55+ A8s+ ATo+ KJs+ KQo
CO	10,000	12.4% 55+ A8s+ A9o+ KJs+ KQo
BU	10,000	13.1% 44+ A7s+ A9o+ KJs+ KQo
SB	9,500	16.9% 33+ A4s+ A8o+ KTs+ KJo+ QJs
BB	9,000	24.3% 22+ A2s+ A4o+ K9s+ QTs+ QJo JTs
Middle Position Shoving Ranges (Satellite with Six Seats)		
GTO Shoving Range		
MP2	**10,000**	**78.6% 22+ Jx+ T2s+ T4o+ 92s+ 97o+ 83s+ 86o+ 73s+ 76o 62s+ 65o 52s+ 54o 42s+ 32s**
GTO Calling Range		
MP3	10,000	1.8% JJ+
CO	10,000	2.1% TT+
BU	10,000	2.1% TT+
SB	9,500	2.1% TT+
BB	9,000	4.7% 88+ AQs+ AKo

Even though mid position is shoving a wider range, we are still calling almost as tight. Even the Small Blind cannot think about calling with AKs.

Then in late position, little has changed:

		Late Position Shoving Ranges (No ICM)
		Shoving Range
BU	10,000	43.7% 22+ Ax K2s+ K5o+ Q5o+ Q9o+ J7s+ J9o+ T6s+ T9o 96s+ 86s+ 75s+ 65s 54s
		Calling Range
SB	9,500	29.4% 22+ Ax K6s+ K9o+ Q9s+ QTo+ J9s+
BB	9,000	37.9% 22+ Ax K2s+ K5o+ Q6s+ Q9o+ J8s+ JTo T8s 98s
		Shoving Range
SB	9,500	68.6% 22+ Qx+ J2s+ J5o+ T2s+ T7o+ 95s+ 97o+ 84s+ 86o+ 74s+ 76o 63s+ 53s+ 43s
		Calling Range
BB	9,000	53.5% 22+ Kx+ Q2s+ Q4o+ J4s+ J7o+ T6s+ T8o+ 97s+ 87s
		Late Position Shoving Ranges (Satellite with Four Seats)
		Shoving Range
BU	10,000	100% Any Two
		Calling Range
SB	9,500	2.7% 99+
BB	9,000	3.5% 88+ AKs
		Shoving Range
SB	9,500	100% Any Two
		Calling Range
BB	9,000	3.5% 88+ AKs

A quick reminder that you are not expected to memorise any of the tables in this book, they are designed to demonstrate how significantly the satellite ranges differ from regular non-ICM ranges.

The Stone Bubble

The bubble of a poker tournament is literally the point where there is one player left to be eliminated before the money. In satellites this is the most important part of the tournament because all prizes are of equal value so it is also the final stage before the tournament ends. As such, this is where players make the most costly mistakes. Before we can make calculations about whether to call or fold on the bubble, we must first have a way of estimating our chance of winning a seat. You can do this with an ICM calculator but that

isn't the easiest option while you are playing, so we do what I call a Chance of Cashing (COC) calculation. This is the sort of thing you would need practice at to be able to do in the moment, so it might be worth replaying a few satellite hand histories in a replayer to get that practice in without the stress of doing in at the tables. I've done it often enough that it is second nature for me in a satellite, which gives me a massive edge and confidence booster at the tables. My students are able to do a COC calculation at the tables within a few hours of practicing it.

Sometimes the calculation is relatively easy, and we essentially use logic rather than computational mathematics to estimate our COC. Other times it's a little more complex and we have to do some computation. And still other times, the math is too complicated and we revert to logic to try to make a rough estimate.

Later on in this book we will show you how to do a COC calculation for mega satellites where there are several tables remaining. Until then assume the following calculations are for final table situations only.

Let's begin with a simple example where all we need to use is basic logic. There are ten players left and nine players win a seat, everybody has equal stacks, what is our COC?

Obviously it is 90%. Nine seats, ten players, everybody has the same chance. You have a 10% chance of busting, so a 90% chance of cashing.

Now let's take a more real life example where we have to do a bit of mental arithmetic.

On the bubble, three players remain, two seats on offer.

Player 1: 50 BBs
Player 2: 10 BBs
Player 3: 10 BBs

So let's use what I like to call 'Gorilla Maths' to assess the chance of cashing for each player.

The first thing we do is to calculate each players' 'Chance of Bubbling' (COB). We do this with some crude maths based on how much more likely the smaller stacks are of busting relative to the chip leader.

Player 1's stack is five times bigger than the other two players, common sense or logic would suggest that their COB is five times less than the other two players. Those two players have five times more chance of bubbling than Player 1, and the same chance as each other.

So if Player 1's COB is 1x, then Player 2's COB is 5x and Player 3's COB is also 5x.

1x + 5x + 5x = 11x.

Combined COB must equal 1, because there is a 100% chance that one of the players will bubble.

100%/11 = 9%. So in this example 1x = 9%.

Now we know this we just flip the COB to get the COC, so:

Player 1: COB 9%, COC 91%
Player 2: COB 45.5%, COC 54.5%
Player 3: COB 45.5%, COC 54.5%

Note that the combined COC added together becomes 200%, which is the number of seats.

This isn't a perfect calculation for assessing what everybody's chances are on the bubble in the moment, but it is pretty close. Again, it is very useful to do these calculations going over old hand histories so that you can practice them without any financial risk to yourself. Also plug them in to ICM calculators to see how close they are to the true maths. For example, in the calculation above when we put them into ICMIZER (a popular ICM calculator which includes a free version online) it came up with:

Player 1: 95.24%
Player 2: 52.38%
Player 3: 52.38%

That is very close. We have used a very rough method which you'll be able to do automatically under pressure at the tables, and arrived at an answer that is very close and for practical purposes the same. From experience this 'Gorilla Maths' method does tend to underestimate the chances of the bigger stacks and it overestimates the chances of the smaller stacks, which is useful to be aware of when the stacks are a little closer.

So let's do another example. Same scenario, three players, two seats.

Player 1: 50 BBs
Player 2: 10 BBs
Player 3: 5 BBs

Player 1 has a 1x chance to bubble, Player 2 is five times more likely to bubble so they have a 5x chance, Player 3 is ten times more likely so they have a 10x chance.

1x + 5x + 10x = 16x
100%/16x
x = 6.25%

Player 1: COB 6.25%, COC 93.75%
Player 2: COB 31.25%, COC 68.75%
Player 3: COB 62.5%, COC 37.5%

Once again, the combined COCs add up to 200%, ie. two seats.

And just for clarity, put these stacks into ICMIZER and you get:

Player 1: 97.32%
Player 2: 67.95%
Player 3: 34.73%

Once again our rough calculation has overestimated the small stacks chance and underestimated the bigger stacks' chances, but we have arrived at a practically identical outcome.

Of course the stack sizes won't always be as easy to calculate, but this formula is reliable when we round up, let's do a more complex one with five

players, four seats:

Player 1: 50BB
Player 2: 30BB
Player 3: 10BB
Player 4: 20BB
Player 5: 15BB

Player 2 is 1.67 more likely to bust than Player 1, Player 3 is 5 times more likely to bust than Player 1, Player 4 is 2.5 times more likely to bust than Player 1 and Player 5 is 3.33 times more likely.

1x+1.67x+5x+2.5x+3.33x = 13.5x
100%/13.5x
x = 7.4

Player 1: 50BB COB 7.4% COC 92.6%
Player 2: 30BB COB 12.4% COC 87.6%
Player 3: 10BB COB 37% COC 62.5%
Player 4: 20BB COB 18.5% COC 81.5%
Player 5: 15BB COB 24.6% COC 75.4%

If you are doing these calculations perfectly away from the table the COBs should add up to 100% and the COCs should add up to 400% (as there are four seats), but here they add up to a COB of 98% and a COC of 402%, which is fine for in the moment calculations. The actual equities in ICMIZER are:

Player 1: 50BB 97.19%
Player 2: 30BB 91.49%
Player 3: 10BB 55.46%
Player 4: 20BB 82.60%
Player 5: 15BB 73.27%

Using COC to Calculate Odds

Now that we understand how to calculate COC let's get to why it is important. The bubble of a satellite is all about shoving and calling and COC

can be used to calculate the range you would need to call a shove based on your current standing. So let's start with that first example we gave with one player holding five times as many chips as the other two players:

Player 1: COB 9%, COC 91%
Player 2: COB 45.5%, COC 54.5%
Player 3: COB 45.5%, COC 54.5%

Assuming Player 1 is on the Button and they shove, what equity would we need to call in the other two positions? To work that out we need to look at what the new COB/COC would be for that player *after* they win the hand (if indeed they did win the hand).

Let's say it is Player 2 who calls. When they call, one of two things will happen. They will either double up or the satellite is over and they have bubbled. If they win Player 2 will move up to 20BB, Player 1 will move down to 40BB and Player 3 will move down to 9BB. That means after the hand, the new COB/COC figures will roughly be:

Player 1 (40BB): COB 14%, COC 86%
Player 2 (21BB): COB 29%, COC 71%
Player 3: (9BB) COB 57%, COC 43%

This means that when Player 2 wins they gain 16.5% in equity, but when they lose they lose 54.5% in equity (ie. they bust out). Player 2 has gone from 54.5% COC to 71% when they win, but they go to 0% when they lose, so the downside of losing is much greater than the upside of winning.

To calculate the equity needed to call, divide the equity we potentially lose by the potential new COC, so in this case:

Potential equity lost/Potential new COC
54.5/71 = 76%

So Player 2 would need equity of 76% to justify calling the button shove from Player 1.

If Player 1 was shoving any two cards (because they are the big stack and

even if they lose their chances of cashing are still very high), in a normal ChipEV situation Player 2 would only need roughly more than 50% to call, which would be:

Ax, Kx, Q5, J7, 22+

But in this ICM situation where we need 76% equity, they could actually only call with TT+. Not even AK is strong enough to win 76% of the time.

That example is against a very wide range. Against a tighter player who covers you, therefore, you probably should be folding almost all of your range. If we assume a tighter Player 1 would only shove ATs, AJ, 88 or above then we actually can only call profitably with AA, which has 85% equity against this tighter range. Even KK only has 70% equity against this range, making it a close fold. This demonstrates why, on the exact bubble, your calling range against somebody who covers you should be extremely tight. It's by virtue of the fact that the downside of losing is so much greater than the upside of winning.

To reiterate, we have made the assumption that you have an understanding of equity and how a particular hand plays against a specific range of hands. We cover some of the most common ranges you will be up against in satellites at the end of this book. If you are not familiar with this concept we implore you study it away from this book and to play around with one of the many free poker equity calculators, because it is a vital part of a strong poker game regardless of the format you play.

Small Stack Shoving into a Small Stack

In the last example we used a calculation where it was a big stack shoving into two small stacks. In that situation if you are one of the small stacks, then winning the hand does not end the tournament. It just puts you in a stronger position to win a seat. Now let's look at the situation when you are a smaller stack facing a shove from another small stack, essentially guaranteeing that one of you is going home empty handed. Let's use the same example as before, but this time the big stack folds and the Small Blind shoves into the Big Blind:

Player 1 (50BB): COB 9%, COC 91%
Player 2 (10BB): COB 45.5%, COC 54.5%
Player 3 (10BB): COB 45.5%, COC 54.5%

What equity does Player 3 need to call the shove?

The difference this time is that if Player 3 calls, barring any chopped pots the tournament is over either way. They either win the seat or they bubble. So this time around you don't calculate for what the COC is after Player 3 wins, but instead do the calculation for what would happen if Player 3 folds, the new COCs would be as follows (because Player 2 has picked up Player 3's Big Blind):

Player 1 (50BB): COB 9%, COC 91%
Player 2 (11BB): COB 39%, COC 61%
Player 3 (9BB): COB 52%, COC 48%

If Player 3 folds, they will have 48% COC. If Player 3 calls and wins they will have 100%, because they have busted the other player and won the seat, and if they call and lose they will have -48% COC because they have just bubbled the satellite. So the upside of winning in this situation is therefore actually 52%. The seat won is 100% minus the guaranteed 48% COC if they fold and the downside of losing is -48%. In this instance the upside of winning is actually greater than the downside of losing. So we actually only need equity of 48% for it to be a profitable call.

This is very counter-intuitive for anybody with a familiarity of ICM and satellite strategy. Normally where ICM is a factor we have to call really tight, but this is a situation where we should call really wide, maybe even wider than if ICM wasn't a factor. It's by virtue of the fact that when we win we do the double whammy, we get the extra chips and we also win the satellite. This is something that the general poker population doesn't understand very well at all. People understand that you are supposed to call tight in satellites but in the specific case of a small stack shoving into a small stack on the bubble the player facing the call should do so very wide. In layman's terms think of it like the big stack has taken themselves out of the running to be eliminated and given there are no bigger prizes to be won, essentially it has created a situation where the two small stacks with identical chips have created a ChipEV situation between themselves. It has become like a Heads-

Up SNG for the final seat, rather than a three-way battle for two seats.

The two takeaways from this Gorilla Maths method on the stone bubble is that when a big stack shoves, we have to call very tight. This is because the downside of busting on the bubble is huge and the upside of winning chips is rarely anywhere near as big. When a small stack shoves and we can end the tournament, ICM breaks down and we can call wider. This is also true when a small stack shoves into a big stack. When a big stack folds to a shove their COC will remain very high, but when they call and win it goes up to 100% and they get to end the tournament. The upside will be greater than the downside for the big stack too. Any time a small stack shoves the last player to act should be calling wider.

Of all the chapters in this book, this is the one where we hope you don't take our word for it and commit to some self study. Practice the COC calculations by looking at old hand histories and at the tables. Work on your calling ranges using poker equity calculators, and ideally spend some time with one of the many ICM calculators that are available so you can compare the Gorilla Maths to the real maths. It doesn't take that long to develop an an acute understanding of ICM in the moment when you have spent some time away from the tables studying it. Once you feel you have grasped the basics of calling in satellites, understanding what hands to shove with is the next step, in no small part because knowing what to shove will also help you better understand the hands you should be calling with.

Key Takeaways

- You need an extremely strong hand to call a shove when you are covered on the bubble
- The downside of calling and losing is usually greater than the upside of calling a shove and winning
- On the bubble when everyone else has seats locked up other than two short stacked players, they should be willing to get their chips in the middle quite wide against each other because there is no longer ICM pressure.

Chapter 5. End game - shoves

Let's start the aggressive part of endgame strategy with a reminder on why we shove or fold most of our range in the late stages of a satellite, rather than make a standard opening raise of 2-3 big blinds, even when we have plenty of blinds and/or strong hands.

In standard MTT strategy, when the stacks become shallow, there are some hands we will raise and call when shoved on; these would be our strongest hands. Then we have some hands we would raise but fold if shoved on, which would be the weak part of our raising range. Then we have some hands that are too strong to raise/fold but we prefer not to have to call either, and those we would just shove.

The strong hands we would raise and call with are 'induce' hands. What we mean by 'induce' is when we make a standard raise that can be shoved over by an opponent, giving us a call or fold decision. In a regular MTT this is a good strategy with our strongest range but it becomes much less attractive in a satellite. We never want to put ourselves in a position where we call an all-in and are risking our tournament life. Even if we are dealt Aces, if we make a standard open and get shoved on we are now facing a call effectively for our tournament life. If our opponent is shoving with a small pair, then that 18% chance that they beat us makes this an unnecessary risk on a satellite bubble. The adjustment we make is to shove more of the hands we would normally open, even when we have 20 or 30 big blinds.

We shove rather than induce to put the all-in decision on our opponents and to get them to fold more. This does not mean we shove a wide range, however, in fact we shove as a bluff much less often too. We still shove a tight range, but we are taking away the possibility for opponents to shove over the top of our opening bet. This is a mistake weak satellite players regularly make. They continue opening their standard hands and then when they get shoved on, they have to fold because they are risking their seat. It is a sure fire way to bleed chips at a key stage in the satellite and something that good satellite regulars exploit.

In a regular tournament it is standard to open shove all our range when we get to around 10-12 big blinds. In a satellite that increases and it can be correct to shove our entire range with 20, 30 or even 40 big blinds. There are situations in satellites where it can be profitable to balance your range between raise/call, raise/fold and shove, but those situations are very complex and the gains are very marginal. You won't be making a massive error in the late stages of a satellite shoving the entire range you would normally play, and it is much easier from a mental game perspective to keep it simple and have a default strategy. Later on in this book we'll explore post flop endgame spots a bit more (but we still arrive at this conclusion).

One of the reasons why satellites are hard to master is there is such a divergence between what the strategy should be based on what the players behind you *should* be doing and what they are actually doing. This X-factor difference between what should work and does work, is why we have included sections on how to adjust to nits and maniacs later on in this chapter.

Satellite metagame has changed over the years. When I started playing satellites I had a sick conversion rate - I was winning 1-in-2.5 seats when the standard ratio was 1-in-10. I had a very simple strategy which was to min raise whenever it was folded to me. Players folded far too much and people never adjusted. That's not an effective strategy today online although it does still sometimes work in soft live satellites. Online, however, I'll get 40 big blinds shoved in my face every time. What once was an incredibly winning strategy is now an incredibly losing strategy. Metagame only really applies if you are a satellite regular playing against the same satellite regulars. If you are in 100 seat mega satellites it really isn't necessary to balance your ranges because shoving instead of inducing is almost always more effective, with the possible exception of live satellites and one-off very soft satellites, like for the WSOP Main Event.

10 Big Blind Shove Ranges

Let's begin with some relatively standard spots you might find yourself in, which is playing effective 10 big blinds on or near the bubble. Don't internalise the specific ranges as being gospel, but rather look at how the ranges vary in different positions and how significantly they differ from

standard 10 big blind MTT situations. Understanding how ranges diverge in super satellites compared to cash games and MTTs is the most useful takeaway here.

Correct GTO shoving ranges are widely available now thanks to apps like SnapShove and HoldemResources Calculator. However, few people adjust these ranges for satellites and it is a huge mistake to follow them blindly, as you will see.

10 big blind Shoving Ranges (No ICM)		
Shoving ranges by position		
UTG	10,000	17.8% 22+ A4s+ ATo+ K9s+ KJo+ Q9s+ J9s+ T8s+ 98s
UTG+1	10,000	17.6% 33+ A3s+ ATo+ K9s+ KJo+ Q9s+ J9s+ T9s 98s
MP1	10,000	20.4% 22+ A2s+ A9o+ K9s+ KJo+ Q9s+ QJo J9s+ T8s+ 98s
MP2	10,000	24.5% 22+ A2s+ A7o+ A5o K9s+ KTo+ Q9s+ QJo J8s+ T8s+ 98s 87s
MP3	10,000	30% 22+ A2s+ A3o+ K6s+ KTo+ Q9s+ QTo+ J8s+ JTo T8s+ JTo T8s+ 98s 87s
CO	10,000	34.3% 22+ Ax K4s+ K9o+ Q8s+ QTo+ J8s+ JTo T7s+ 97s+ 86s+ 76s 65s
BU	10,000	43.7% 22+ Ax K2s+ K5o+ Q5s+ Q9o+ J7s+ J9o T6s+ T9o 96s+ 86s+ 75s+ 65s 54s
SB	9,500	68.6% 22+ Qx+ J2s+ J5o+ T2s+ T7o+ 95s+ 97o+ 84s+ 86o+ 74s+ 76o 63s+ 53s+ 43s
10 big blind Shoving Ranges (Normal Final Table ICM)		
Shoving ranges by position		
UTG	10,000	18.9% 33+ A2s+ ATo+ A5o K9s+ QTs+ QJo JTs
UTG+1	10,000	17.5% 44+ A2s+ ATo+ A5o K9s+ KJo+ QTs+ QJo JTs
MP1	10,000	22.2% 22+ A2s+ A9o+ A5o K5s+ KTo+ Q9s+ QJo J9s+ T9s
MP2	10,000	24.1% 22+ A2s+ A9o+ A5o K4s+ KTo+ Q9s+ QTo+ J9s+ T9s
MP3	10,000	29.8% 22+ A2s+ A7o+ A5o-A3o K3s+ KTo+ Q8s+ QTo+ J8s+ JTo T8s+ 98s
CO	10,000	39.1% 22+ Ax K2s+ K9o+ Q4s+ Q9o+ J7s+ J9o+ T7s+ T9o 97s+ 86s+ 76s 65s
BU	10,000	51.3% 22+ Ax K2s+ K6o+ Q2s+ Q8o+ J2s+ J8o+ T5s+ T8o+ 95s+ 98o 85s+ 87o 75s+ 64s+ 53s+
SB	9,500	78.9% 22+ Kx+ Q2s+ Q3o+ J2s+ J4o+ T2s+ T6o+ 92s+ 95o+ 82s+ 85o+ 72s+ 75o+ 62s+ 64o+ 52s+ 54o 42s+ 32s

Here is a standard spot input into an ICM calculator. Nine people are on the table and everyone has 10 big blinds. This is the difference between when ICM is not a factor, such as a cash game or very early in an MTT, and when it's a standard final table with normal payouts. In both examples the first thing to notice is you shove a lot less hands in early position than you do in late position. In the first example, under the gun you are shoving 17.8% of hands, on the button you are shoving 43.7% of hands or less, and as the Small Blind you can shove as many as 68.6% of hands profitably. This is fairly widely understood; quite simply you have less players to worry about calling

you the later you are to act, so you are much more likely to take down the pot preflop or get called by a wider range of hands. Under the gun can always shove a bit wider than UTG+1, but that is what is called a future game simulation factor, the calculation takes into account that UTG is posting their big blind next, so therefore you can justify shoving wider after a cost benefit tradeoff of knowing you will probably lose your blind the next hand.

Now let's look at how the ranges change when final table ICM is a factor. When we say normal we mean a standard MTT where every position pays more than the last and the big prizes are the top three. In this example we have used payouts from a 180-man SNG on PokerStars which is close to the mean average. The first thing to notice is that the shoving frequencies remain very similar. UTG shoves 17.8% in the first example and 18.9% in the ICM example, the Small Blind shoves 68.6% in the first example and 78.9% in the ICM example. For the most part you are just shoving a few more hands in every position.

The bigger change is the *types* of hands you shove in the ICM example. Although the relative percentage of hands remain the same, the types of hands to shove actually change. In early position the smaller pairs have gone down in value. UTG can shove 22+ and UTG+1 can shove 33+ in the normal example, but that becomes 33+ and 44+ respectively in the ICM example. When the effective stack sizes get bigger, this becomes a bigger factor and small pairs decrease even further in value.

The other hands that go down in value are the worst suited connectors. UTG in the first example you can shove T8s+ and 98s+, in the ICM example it becomes JTs+. On MP3 you can shove 87s+ in the first example, but 98s+ in the ICM example. Unsuited rag Aces also go down in value in the same positions.

However, as the hand ranges have increased in the ICM example, what has replaced them? The simple answer is suited Aces become more more profitable in the ICM example. A2s+ is a profitable shove in every position whereas you need A4s UTG and A3s UTG+1 with no ICM. In middle position the suited broadway hands become more profitable too. For example you need at least K9s in MP1 but K5s in the same position when ICM is a factor. Finally, in late position, the ranges just get wider overall, even 32s is a

profitable shove in the Small Blind.

We can generalise this by saying that when ICM is a factor, big cards and suitedness is more important, and hands possessing both of these traits that wouldn't be shoves if ICM wasn't a factor suddenly become shoves, whereas the worst hands that don't have big cards (like small pocket pairs) or suitedness (like unsuited Aces) that would be shoves without ICM no longer are when ICM is a major factor. The reasons for this are twofold:

- The major reason is that when ICM is a factor we are much less happy to have our all-ins called, and when we have high cards in our hand we are less likely to be called as we 'block' the hands that might call us (There are less possible combinations of AX hands that would call us when we have an Ace ourself). When ICM is significant, fold equity is by far the most important type of equity, so anything that makes it more likely our opponents will fold is huge

- A second reason is that suitedness adds more to our equity when we are called by a tighter range (and calling ranges will be tighter with ICM). For example, KJs has 3.38% more equity than KJo against a calling range of the top 10% of hands, but only 2.53% more against a range of top 40%

Now let's look at how the ranges differ from the no ICM situation and a satellite. In this example we have nine players, everyone has 10 big blinds and four seats of equal value are up for grabs. We are a few places off the money but make no mistake, ICM is already a huge factor in our decision making.

10 big blind Shoving Ranges (No ICM)		
Shoving ranges by position		
UTG	10,000	17.8% 22+ A4s+ ATo+ K9s+ KJo+ Q9s+ J9s+ T8s+ 98s
UTG+1	10,000	17.6% 33+ A3s+ ATo+ K9s+ KJo+ Q9s+ J9s+ T9s 98s
MP1	10,000	20.4% 22+ A2s+ A9o+ K9s+ KJo+ Q9s+ QJo J9s+ T8s+ 98s
MP2	10,000	24.5% 22+ A2s+ A7o+ A5o K9s+ KTo+ Q9s+ QJo J8s+ T8s+ 98s 87s
MP3	10,000	30% 22+ A2s+ A3o+ K6s+ KTo+ Q9s+ QTo+ J8s+ JTo T8s+ JTo T8s+ 98s 87s
CO	10,000	34.3% 22+ Ax K4s+ K9o+ Q8s+ QTo+ J8s+ JTo T7s+ 97s+ 86s+ 76s 65s
BU	10,000	43.7% 22+ Ax K2s+ K5o+ Q5s+ Q9o+ J7s+ J9o T6s+ T9o 96s+ 86s+ 75s+ 65s 54s
SB	9,500	68.6% 22+ Qx+ J2s+ J5o+ T2s+ T7o+ 95s+ 97o+ 84s+ 86o+ 74s+ 76o 63s+ 53s+ 43s
10 big blind Shoving Ranges (Satellite Four Seats ICM)		
Shoving ranges by position		
UTG	10,000	20.7% 33+ A2s+ ATo+ A5o K6s+ KTo+ Q9s+ QJo JTs
UTG+1	10,000	18.7% 33+ A2s+ ATo+ A5o-A4o K9s+ KJo+ QTs+ QJo JTs
MP1	10,000	23.7% 22+ A2s+ A9o+ A5o-A4o K5s+ KTo+ Q9s+ QJo J9s+
MP2	10,000	26.2% 22+ A2s+ A8o+ A5o-A4o K4s+ KTo+ Q8s+ QTo+ J9s+ T9s
MP3	10,000	32.3% 22+ Ax K2s+ KTo+ Q8s+ Q6s+ QTo+ J8s+ JTo T8s+ 98s
CO	10,000	41% 22+ Ax K2s+ K9o+ Q2s+ Q9o+ J5s+ J9o+ T6s+ T9o+ 96s+ 86s+ 76s 65s
BU	10,000	52.6% 22+ Ax K2s+ K5o+ Q2s+ Q8o+ J2s+ J8o+ T4s+ T8o+ 95s+ 98o 85s+ 87o 75s+ 64s+ 53s+
SB	9,500	82.8% 22+ Qx+ J2s+ J4o+ T2s+ T4o+ 92s+ 95o+ 82s+ 85o+ 72s+ 74o+ 62s+ 64o+ 52s+ 54o 42s+ 32s

Similar to the previous comparison, the frequencies go up slightly but some hands have dropped out our shoving range. Small pairs have decreased in value again, and 22+ drops out of the UTG shoving range. The weaker suited connectors have also gone. We need JTs UTG in a satellite compared to 98s in a non ICM scenario. In middle position the rag Aces and weak broadway hands become less profitable, you need A7o in MP2 in a non ICM spot compared to A8o in a satellite. In late position we can shove even wider than the standard ICM situation. We can shove 52.6% of our hands on the Button and 82.8% of our hands from the Small Blind.

Not too different yet, but let's wind the example forward. Now let us compare the standard ICM final table ranges and a nine person satellite final table where six seats (instead of four) are on offer. Now more people are walking away with a prize than are not.

10 big blind Shoving Ranges (Normal Final Table ICM)		
Shoving ranges by position		
UTG	10,000	18.9% 33+ A2s+ ATo+ A5o K9s+ QTs+ QJo JTs
UTG+1	10,000	17.5% 44+ A2s+ ATo+ A5o K9s+ KJo+ QTs+ QJo JTs
MP1	10,000	22.2% 22+ A2s+ A9o+ A5o K5s+ KTo+ Q9s+ QJo J9s+ T9s
MP2	10,000	24.1% 22+ A2s+ A9o+ A5o K4s+ KTo+ Q9s+ QTo+ J9s+ T9s
MP3	10,000	29.8% 22+ A2s+ A7o+ A5o-A3o K3s+ KTo+ Q8s+ QTo+ J8s+ JTo T8s+ 98s
CO	10,000	39.1% 22+ Ax K2s+ K9o+ Q4s+ Q9o+ J7s+ J9o+ T7s+ T9o 97s+ 86s+ 76s 65s
BU	10,000	51.3% 22+ Ax K2s+ K6o+ Q2s+ Q8o+ J2s+ J8o+ T5s+ T8o+ 95s+ 98o 85s+ 87o 75s+ 64s+ 53s+
SB	9,500	78.9% 22+ Kx+ Q2s+ Q3o+ J2s+ J4o+ T2s+ T6o+ 92s+ 95o+ 82s+ 85o+ 72s+ 75o+ 62s+ 64o+ 52s+ 54o 42s+ 32s
10 big blind Shoving Ranges (Satellite Six Seats ICM)		
Shoving ranges by position		
UTG	10,000	61.5% 22+ Qx+ J2s+ J7o+ J5o T6s+ T9o 95s+ 85s+ 74s+ 63s+ 65o 52s+ 42s+
UTG+1	10,000	59.2% 22+ Qx+ J2s+ J8o+ T6s+ T9o 95s+ 85s+ 74s+ 63s+ 65o 52s+ 42s+
MP1	10,000	63.8% 22+ Jx+ T6s+ T9o 95s+ 85s+ 74s+ 63s+ 52s+ 43s
MP2	10,000	78.6% 22+ Jx+ T2s+ T4o+ 92s+ 97o+ 83s+ 86o+ 73s+ 76o 62s+ 65o 52s+ 54o 42s+ 32s
MP3	10,000	96.4% 22+ 9x+ 82s+ 84o+ 72s+ 73o+ 62s+ 63o+ 5x-3x
CO	10,000	100% Any Two
BU	10,000	100% Any Two
SB	9,500	100% Any Two

You can now start to see the ranges diverge massively from what we are used to. You can actually shove 61.5% of hands profitably from under the gun, which is a staggering change from the 18.9% in a normal final table. You can shove 42s profitably under the gun. By the time we get to the Cut-Off which can literally shove any two cards. When the bubble is this close you can start shoving really wide. The reason for this is that in a satellite, where playing for the win is pointless, you should be getting called far less often.

Now if we wind this forward again to the actual bubble, nine players

remaining, eight seats on offer, everyone has 10 big blinds:

10 big blind Shoving Ranges (Normal Final Table ICM)		
Shoving ranges by position		
UTG	10,000	18.9% 33+ A2s+ ATo+ A5o K9s+ QTs+ QJo JTs
UTG+1	10,000	17.5% 44+ A2s+ ATo+ A5o K9s+ KJo+ QTs+ QJo JTs
MP1	10,000	22.2% 22+ A2s+ A9o+ A5o K5s+ KTo+ Q9s+ QJo J9s+ T9s
MP2	10,000	24.1% 22+ A2s+ A9o+ A5o K4s+ KTo+ Q9s+ QTo+ J9s+ T9s
MP3	10,000	29.8% 22+ A2s+ A7o+ A5o-A3o K3s+ KTo+ Q8s+ QTo+ J8s+ JTo T8s+ 98s
CO	10,000	39.1% 22+ Ax K2s+ K9o+ Q4s+ Q9o+ J7s+ J9o+ T7s+ T9o 97s+ 86s+ 76s 65s
BU	10,000	51.3% 22+ Ax K2s+ K6o+ Q2s+ Q8o+ J2s+ J8o+ T5s+ T8o+ 95s+ 98o 85s+ 87o 75s+ 64s+ 53s+
SB	9,500	78.9% 22+ Kx+ Q2s+ Q3o+ J2s+ J4o+ T2s+ T6o+ 92s+ 95o+ 82s+ 85o+ 72s+ 75o+ 62s+ 64o+ 52s+ 54o 42s+ 32s
10 big blind Shoving Ranges (Satellite Eight Seats ICM)		
Shoving ranges by position		
UTG	10,000	100% Any Two
UTG+1	10,000	100% Any Two
MP1	10,000	100% Any Two
MP2	10,000	100% Any Two
MP3	10,000	100% Any Two
CO	10,000	100% Any Two
BU	10,000	100% Any Two
SB	9,500	100% Any Two

In a GTO perfect world you could shove any two from any seat because you are never getting called. With nine players and eight seats, everyone has roughly an 89% chance of winning a seat. If somebody shoves, you need to have a better than 89% chance of winning the hand to justify the call, which means even if you have Aces it's a fold, because Aces won't beat a random hand 89% of the time (Aces wins just over 85% of the time). Even if our opponent exposes their hand and has 32o, we still have to fold Aces, as 32o wins almost 13% of the time.

However, now would be a good time to remind you that all of this depends on everyone at your table knowing they should not be calling wide and what it means to be playing in a satellite. Later in this chapter we will

look at how these ranges changes dramatically depending on whether you have tight or loose players at your table. Don't take this as a license to shove any two all the time in a satellite, this is simply giving you a baseline strategy to diverge from once you understand the format and your specific opponents better.

Five Big Blind Shove Ranges

We've used ten big blind stacks as a jumping off point because that is a well known benchmark for when shove/fold poker strategy applies and also because it is the most common stack size you'll have near the bubble based on what the average stacks tend to be at that stage. Now let's look at how those ranges diverge when the stack sizes are different. First let's look at an example where everyone has five big blinds (not as uncommon as you might expect in satellites, especially hyper turbo structures).

To start with let us look at what the ChipEV ranges are at a nine handed table, everyone has five big blinds, with ICM not being a factor. Let's first of all compare it to the ChipEV ranges for ten big blinds:

10 big blind Shoving Ranges (No ICM)		
Shoving ranges by position		
UTG	10,000	17.8% 22+ A4s+ ATo+ K9s+ KJo+ Q9s+ J9s+ T8s+ 98s
UTG+1	10,000	17.6% 33+ A3s+ ATo+ K9s+ KJo+ Q9s+ J9s+ T9s 98s
MP1	10,000	20.4% 22+ A2s+ A9o+ K9s+ KJo+ Q9s+ QJo J9s+ T8s+ 98s
MP2	10,000	24.5% 22+ A2s+ A7o+ A5o K9s+ KTo+ Q9s+ QJo J8s+ T8s+ 98s 87s
MP3	10,000	30% 22+ A2s+ A3o+ K6s+ KTo+ Q9s+ QTo+ J8s+ JTo T8s+ JTo T8s+ 98s 87s
CO	10,000	34.3% 22+ Ax K4s+ K9o+ Q8s+ QTo+ J8s+ JTo T7s+ 97s+ 86s+ 76s 65s
BU	10,000	43.7% 22+ Ax K2s+ K5o+ Q5s+ Q9o+ J7s+ J9o T6s+ T9o 96s+ 86s+ 75s+ 65s 54s
SB	9,500	68.6% 22+ Qx+ J2s+ J5o+ T2s+ T7o+ 95s+ 97o+ 84s+ 86o+ 74s+ 76o 63s+ 53s+ 43s
5 big blind Shoving Ranges (No ICM)		
Shoving ranges by position		
UTG	5,000	24.1% 22+ A2s+ A7o+ K5s+ KTo+ Q9s+ QJo J9s+ T8s+ 98s
UTG+1	5,000	28.4% 22+ A2s+ A5o+ K5s+ KTo+ Q8s+ QTo+ J9s+ JTo T8s+ 98s 87s
MP1	5,000	31.8% 22+ A2s+ A3o+ K4s+ K9o+ Q8s+ QTo+ J8s+ JTo T8s+ 98s 87s
MP2	5,000	34.8% 22+ Ax K3s+ K9o+ Q6s+ Q9o+ J8s+ JTo T8s+ 97s+ 87s
MP3	5,000	40% 22+ Ax K2s+ K7o+ Q5s+ Q9o+ J7s+ J9o+ T7s+ T9o 97s+ 87s 76s
CO	5,000	45.1% 22+ Ax K2s+ K5o+ Q3s+ Q8o+ J6s+ J8o+ T6s+ T9o 97s+ 86s+ 76
BU	5,000	54.4% 22+ Kx+ Q2s+ Q5o+ J4s+ J7o+ T6s+ T8o+ 96s+ 98o 86s+ 76s
SB	4,500	83.3% 22+ Tx+ 92s+ 94o+ 82s+ 85o+ 73s+ 75o+ 63s+ 65o 53s+ 43s

Quite simply the ranges go up from every position. UTG shoves 24.1% of their range compared to 17.8% with ten big blinds, all the way to the Small Blind shoving 83.3% of their range compared to 68.6%. This shouldn't come as a big surprise, as a general principle with only five blinds your ranges should go up because there is much more cost in posting your blinds. You will blind out much sooner if you don't force the action. However, this isn't the actual reason why we can shove a wider range: it's simply a risk to reward calculation. In this case we are risking less (five big blinds rather than

10) to win the same reward if it gets through (blinds and antes) so there's a much better risk to reward ratio.

This might seem like nitpicking but it's important to understand this concept to avoid getting sucked into making unprofitable shoves. Players who think they should be shoving wider because "I'll blind out if I don't make a move" can find themselves shoving far too wide. A common misconception is that it's better to shove before we get too short leads to players making premature unprofitable shoves for fear of getting shorter. It's actually an advantage to let yourself get shorter in the sense that the shorter you are the more hands you can shove profitably. This is why so called "short stacking" (buying in short stacked to a cash game) is so advantageous that it is not only frowned upon in most games, it is frequently prohibited. Understanding that the reason we shove wider when shorter is not to avoid blinding out but simply because the risk to reward is better not only stops us from shoving too wide, but also from making panicky premature shoves because "I couldn't let myself get any shorter".

Now let's look at how those ranges change when we are in a satellite with nine players and six seats to be won:

5 big blind Shoving Ranges (No ICM)		
Shoving ranges by position		
UTG	5,000	24.1% 22+ A2s+ A7o+ K5s+ KTo+ Q9s+ QJo J9s+ T8s+ 98s
UTG+1	5,000	28.4% 22+ A2s+ A5o+ K5s+ KTo+ Q8s+ QTo+ J9s+ JTo T8s+ 98s 87s
MP1	5,000	31.8% 22+ A2s+ A3o+ K4s+ K9o+ Q8s+ QTo+ J8s+ JTo T8s+ 98s 87s
MP2	5,000	34.8% 22+ Ax K3s+ K9o+ Q6s+ Q9o+ J8s+ JTo T8s+ 97s+ 87s
MP3	5,000	40% 22+ Ax K2s+ K7o+ Q5s+ Q9o+ J7s+ J9o+ T7s+ T9o 97s+ 87s 76s
CO	5,000	45.1% 22+ Ax K2s+ K5o+ Q3s+ Q8o+ J6s+ J8o+ T6s+ T9o 97s+ 86s+ 76s
BU	5,000	54.4% 22+ Kx+ Q2s+ Q5o+ J4s+ J7o+ T6s+ T8o+ 96s+ 98o 86s+ 76s
SB	4,500	83.3% 22+ Tx+ 92s+ 94o+ 82s+ 85o+ 73s+ 75o+ 63s+ 65o 53s+ 43s
5 big blind Shoving Ranges (Satellite Six Seats ICM)		
Shoving ranges by position		
UTG	5,000	69.8% 22+ Jx+ T2s+ T8o+ 95s+ 97o+ 84s+ 87o+ 74s+ 76o+ 63s+ 52s+ 43s
UTG+1	5,000	74.2% 22+ Jx+ T2s+ T6o+ 93s+ 97o+ 84s+ 87o 73s+ 76o 63s+ 65o 52s+ 42s+
MP1	5,000	85.8% 22+ Tx+ 92s+ 96o+ 82s+ 85o+ 72s+ 75o+ 62s+ 64o+ 52s+ 53o+ 42s+ 32s
MP2	5,000	92.3% 22+ 9x+ 82s+ 84o+ 72s+ 74o+ 62s+ 63o+ 52s+ 42s+ 43o 32s
MP3	5,000	100% Any Two
CO	5,000	100% Any Two
BU	5,000	100% Any Two
SB	4,500	100% Any Two

The adjustment should be obvious right away, and that is when everyone has five big blinds it is virtually always profitable to shove any two cards regardless of your seating position. The only surprise this time around is that UTG in all the other range simulations usually advocates a wider range than UTG+1 for future game simulation reasons (because they are paying the big blind next). However, when the stacks are so shallow, this is not the case with your very worst hands in a satellite because you are so much more likely to be called, and UTG+1 can shove 74.2% of hands compared to 69.8% of hands of the UTG player.

An easy takeaway here is that being the first to get all your money in the pot when you still have fold equity is better than waiting to find a hand to call a shove with when you have a five big blind stack. Conversely, when you drop even shorter to the point you have little or no fold equity the strategy changes again. With three big blinds or less, the big blind will be getting over 2 to 1 to call us with any two cards, so we are better off waiting for a hand that is at least above average when we are always getting called. When we have one big blind or less we actually prefer calling it off when someone ahead of us has raised or, better yet, shoved. In this case, we steal fold equity from the shover as players behind are more likely to fold now. If we shove one big blind and the small blind completes and the big blind checks, we are getting roughly 3 to 1 on our money against two hands, assuming there are antes. This is a good spot, but not as good as calling it off when someone else shoves causing everyone else to fold. In this case we are getting 3.5 to 1 on our money against only one hand.

20 Big Blind Shove Ranges

In contrast, what about when everyone has a healthy stack of 20 big blinds, especially given we have already argued that it is better to shove your entire range than to make min raise and have to fold? Let's start with 20 big blind ChipEV ranges compared to the 10 big blind ChipEV ranges:

10 big blind Shoving Ranges (No ICM)		
Shoving ranges by position		
UTG	10,000	17.8% 22+ A4s+ ATo+ K9s+ KJo+ Q9s+ J9s+ T8s+ 98s
UTG+1	10,000	17.6% 33+ A3s+ ATo+ K9s+ KJo+ Q9s+ J9s+ T9s 98s
MP1	10,000	20.4% 22+ A2s+ A9o+ K9s+ KJo+ Q9s+ QJo J9s+ T8s+ 98s
MP2	10,000	24.5% 22+ A2s+ A7o+ A5o K9s+ KTo+ Q9s+ QJo J8s+ T8s+ 98s 87s
MP3	10,000	30% 22+ A2s+ A3o+ K6s+ KTo+ Q9s+ QTo+ J8s+ JTo T8s+ JTo T8s+ 98s 87s
CO	10,000	34.3% 22+ Ax K4s+ K9o+ Q8s+ QTo+ J8s+ JTo T7s+ 97s+ 86s+ 76s 65s
BU	10,000	43.7% 22+ Ax K2s+ K5o+ Q5s+ Q9o+ J7s+ J9o T6s+ T9o 96s+ 86s+ 75s+ 65s 54s
SB	9,500	68.6% 22+ Qx+ J2s+ J5o+ T2s+ T7o+ 95s+ 97o+ 84s+ 86o+ 74s+ 76o 63s+ 53s+ 43s
20 big blind Shoving Ranges (No ICM)		
Shoving ranges by position		
UTG	20,000	8.9% 99+ 66 ATs+ A5s-A3s AQ+ KTs+ QTs+
UTG+1	20,000	9.9% 88+ 66-55 A9s+ A5s-A4s AQo+ KTs+ QTs-JTs
MP1	20,000	12.2% 55+ AQs+ A5s AJo+ K9s+ KQo QTs-JTs
MP2	20,000	14.6% 44+ A8s+ A5s AJo+ K9s+ KJo+ Q9s+ J9s+ T9s
MP3	20,000	18.6% 33+ A3s+ ATo+ K9s+ KJo+ Q9s+ QJo J9s+T9s 98s
CO	20,000	24.4% 22+ A2s+ A8o+ K7s+ KJo+ Q8s+ QJo J8s+ JTo T8s+ 98s 87s
BU	20,000	33.6% 22+ Ax K5s+ KTo+ Q8s+ QTo+ J8s+ JTo T7s+ T9o 97s+ 86s+ 76s 65s
SB	19,500	55.7% 22+ Kx+ Q2s+ Q8o+ J4s+ J8o+ T5s+ T8o+ 95s+ 98o 85s+ 87o 74s+ 76o 64s+ 53s+

It is almost the same divergence as the five big blind strategy, but in the opposite direction. At every seat at the table our range is reduced between 25-50% compared to the same position at a 10 big blind table. Again, the reason for this is probably intuitive, while you will get more folds with a 20 big blind shove, the times you are called you are almost certainly up against a very strong hand, so you need a strong hand yourself to see a showdown with. Also the risk to reward ratio is worse: you're risking more (20 big blinds) for the same reward (blinds and antes) when your shove gets through.

Now let's look at a nine player, six seats, satellite ICM spot, and compare

it to the same satellite ICM spot with ten big blinds:

10 big blind Shoving Ranges (Satellite Six Seats ICM)		
Shoving ranges by position		
UTG	10,000	61.5% 22+ Qx+ J2s+ J7o+ J5o T6s+ T9o 95s+ 85s+ 74s+ 63s+ 65o 52s+ 42s+
UTG+1	10,000	59.2% 22+ Qx+ J2s+ J8o+ T6s+ T9o 95s+ 85s+ 74s+ 63s+ 65o 52s+ 42s+
MP1	10,000	63.8% 22+ Jx+ T6s+ T9o 95s+ 85s+ 74s+ 63s+ 52s+ 43s+
MP2	10,000	76.6% 22+ Jx+ T2s+ T4o+ 92s+ 97o+ 83s+ 86o+ 73s+ 76o 62s+ 65o 52s+ 54o 42s+ 32s
MP3	10,000	96.4% 22+ 9x+ 82s+ 84o+ 72s+ 73o+ 62s+ 63o+ 5x-3x
CO	10,000	100% Any Two
BU	10,000	100% Any Two
SB	9,500	100% Any Two

20 big blind Shoving Ranges (Satellite Six Seats ICM)		
Shoving ranges by position		
UTG	20,000	29.5% 44+ Ax K2s+ K3o+ 76s 65s
UTG+1	20,000	40.4% QQ+ 99-55 Kx+ Q2s+ J9s+ T7s+ 96s+ 85s+ 74s+ 63s+ 53s+ 43s
MP1	20,000	41.8% QQ+ 77-55 Kx+ Q2s+ Q8o+ Q6o JTs T8s+ 97s+ 86s+ 75s+ 64s+ 53s+ 43s
MP2	20,000	54.6% 33+ Qx+ J4s+ T7s+ 96s+ 85s+ 74s+ 76o 63s+ 65o 52s+ 43s
MP3	20,000	66.4% 22+ Jx+ T6s+ 95s+ 84s+ 74s+ 76o 63s+ 65o 52s+ 54o 42s+ 32s
CO	20,000	86% 22+ Tx+ 92s+ 96o+ 82s+ 86o+ 72s+ 75o+ 62s+ 64o+ 52s+ 53o+ 42s+ 43o 32s
BU	20,000	100% Any Two
SB	19,500	100% Any Two

It's considerably tighter as expected, perhaps most interesting of all in this case is that the later you are in position, the closer your ranges are to the 10 big blind ranges. The button can shove any two in both 10 and 20 big blind spots, for example. MP2 goes down from 78.6% in the 10 big blind example to 54.6% in the 20 big blind example. Once you get to UTG it more than halves, going from 61.5% to 29.5%. The broad takeaway here is that with less players to act behind you, your shove has way more chance of getting through, but at a full table the downside of shoving 20 big blinds and being called is severe.

A reminder, once again, that all these examples so far are assuming everyone is playing GTO poker and knows they should not be calling. In this example, to call the UTG shove, everyone else at the table needs KK+ and only the Big Blind can call with AKs.

Shoving Range		
UTG	**20,000**	**29.5% 44+ Ax K2s+ K3o+ 76s 65s**
Calling Range		
UTG+1	20,000	0.8% KK+
MP1	20,000	0.8% KK+
MP2	20,000	0.8% KK+
MP3	20,000	0.8% KK+
CO	20,000	0.8% KK+
BU	20,000	0.8% KK+
SB	19,500	0.8% KK+
BB	19,000	1.4% KK+ AKs

Next we will look at how to adjust these baseline ranges when we know our opponents are playing imperfectly

Adjusting to Imperfection

The examples and ranges so far have all assumed your opponents are playing a Game Theory Optimal (GTO) strategy. We have assumed that they are playing perfectly when in reality most players rarely do. This next section is all about adjusting to imperfection in the player population and it is very important. We will probably never get to a situation where most of the tournament field is playing close to a GTO strategy. So as interesting and useful as the baseline theory is, it is more important to be able to adjust this strategy to players who are not playing GTO.

The general population in tournaments have gone from making one type of mistake to another. A few years ago in satellites the players shoved a little too wide in general. The general advice given by professionals was if you had less than 10 big blinds and it was folded around you, don't look at your cards and just shove. The default strategy also involved calling too tight, which was a far bigger mistake than shoving too wide (if the population was calling too tight it made it OK to shove wider).

When apps like SnapShove came out and the general population seemed to be calling too wide. At the time of writing, SnapShove is a non-ICM app so when you see a player using it in a live tournament, especially in a

satellite, often they will be calling too wide.

Either way you will have players who are either too tight (nits) or too loose (maniacs) and we need to be able to adjust to them.

Adjusting to a Nit

As a coach, one of the most frequent things I hear players say is "He is a nit so I can shove any two cards". Is this actually true? Let's look at a typical example.

Nine players are left, with six seats to be won. Five players have stacks around the 20-30 big blind mark, four stacks have around 10-20 big blinds.

We are in the Small Blind with 10 big blinds, the Big Blind we have identified as very tight with 30 big blinds.

What is our shoving range?

GTO Shoving Range		
SB	9,500	**81.1% 22+ Qx+ J2s+ J4o+ T2s+ T5o+ 92s+ 95o+ 82s+ 85o+ 72s+ 75o+ 62s+ 64o+ 52s+ 54o+ 42s+ 32s**
GTO Calling Range		
BB	29,000	26.4% 44+ A2s+ A4o+ K6s+ K9o+ Q9s+ QTo+ JTs
Adjusted Shoving Range		
SB	9,500	**100% Any Two**
Nit Calling Range (15%)		
BB	29,000	15% 66+ A5s+ A8o+ KTs+ KJo+
Adjusted Shoving Range		
SB	9,500	**100% Any Two**
Nit Calling Range (20%)		
BB	29,000	20% 55+ A3s+ A7o+ K8s+ KTo+ QTs+ QJo
Adjusted Shoving Range		
SB	9,500	**93.7% 22+ 8x+ 72s+ 73o+ 62s+ 64o+ 52s+ 53o+ 42s+**
Nit Calling Range (25%)		
BB	29,000	25% 55+ A2s+ A5o+ K7s+ K9o+ Q9s+ QTo+ JTs

In a GTO situation our range would be 81% of hands and the Big Blind's calling range should be almost 27% of hands. However, if our read is that this player is a nit and would only call 15% of their hands. In that scenario their range would be 66+, A5s+, A8o+, KTs, KJo+.

In that situation our adjusted shoving range goes up to 100%. We can profitably shove any two cards against this really tight player.

If the player was a little looser and likely would call with 20% of their range, that would be 55+, A3s+, A7o+, K8s+, KTo, QTs+, QJo. Once again, our adjusted shoving range remains at any two cards, we can profitably shove 100% of our range against what would probably be deemed a tight range in a satellite, not just a regular MTT.

It's only when the Big Blind calls with 25% of their range that we make an adjustment. 25% of hands would be 55+, A2s+, A5o+, K7s+, K9o+, Q9s+, QTo+, JTs. Now the correct shoving range would be 93.7% of our hands

according to HoldemResources Calculator. Which is basically just dropping hands like 32o, 32s, 72o etc.

Adjusting to Nits

We have picked out when there is a very tight player in the Big Blind and the strategy adjustment probably comes as no surprise to you, no doubt you have adopted this strategy before many times without having to look at hand charts. What about the situation when there are several players behind you, all of them very tight? Each individual player is likely to fold but there are a lot more of them, so there is more chance of one of them waking up with something.

Let's look at the same example as before:

Nine players are left, with six seats to be won. Five players have stacks around the 20-30 big blind mark and four stacks have around 10-20 big blinds.

This time we are in Middle Position (MP2) with 10 big blinds. We believe all the players left to act are playing too tight, so what is our shoving range?

GTO Shoving Range		
MP2	**10,000**	**25.7% 22+ A2s+ A8o+ A5o-A4o K5s+ KTo+ Q9s+ QTo+ J9s+ T9s+**
Calling Range		
MP3	20,000	4.3% TT+ AQs+ AKo
CO	30,000	4.7% TT+ AQ
BU	10,000	5.2% 99+ AQ
SB	9,500	6.6% 88+ ATs+ AQo+
BB	19,000	8.4% 66+ ATs+ AJo+

Everyone should be calling us between with 4.3% and 6.6% of hands, with the Big Blind expected to call wider at 8.4% because they get to close the action and already have chips invested, giving them a better price to call. However, we think they all are calling half as frequently as they actually should be calling.

Adjusted Shoving Range		
MP2	10,000	100% Any Two
Nits Calling Range		
MP3	20,000	2% QQ+ AKs
CO	30,000	2% QQ+ AKs
BU	10,000	2.6% QQ+ AK
SB	9,500	3.3% JJ+ AK
BB	19,000	4.2% TT+ AQs+ AK

When you feed in those figures to an ICM calculator and half the amount of hands we expect everybody to call with, that makes shoving any two cards profitable. We can shove 100% of our hands against five players if our read is correct that they are all are playing very tight.

This is a very important takeaway for satellite grinders. When players are calling too tight our shoving ranges expand dramatically. In this example it has jumped from 25% to 100%. Maybe a more important takeaway than that is when you are considering a shove late on in a satellite the tendencies of the players behind are more important than the hand itself. If the players left to act are playing too tight, then your hand doesn't really matter that much.

Adjusting to Nits (Under the Gun)

Same example as before, nine players are left, six seats to be won, five players have stacks around the 20-30 big blind mark, four stacks have around 10-20 big blinds.

This time we are under the gun with 10 big blinds and once again we believe everybody at the table is playing too tight. What is our shoving range? Can we profitably get a lot of shoves through?

GTO Shoving Range		
UTG	**10,000**	**16.3% 55+ A2s+ ATo+ A5o KTs+ KJo+ QTs+**
Calling Range		
UTG+1	20,000	3% JJ+ AK
MP1	30,000	3% JJ+ AK
MP2	10,000	3% JJ+ AK
MP3	20,000	3% JJ+ AK
CO	30,000	3% JJ+ AK
BU	10,000	3.8% JJ+ AK AQs+
SB	9,500	4.7% TT+ AQ+
BB	19,000	5.4% 99+ AQo+ AJs+
Adjusted Shoving Range		
UTG	**10,000**	**100% Any Two**
Nits Calling Range		
UTG+1	20,000	1.5% KK+ AKs
MP1	30,000	1.5% KK+ AKs
MP2	10,000	1.5% KK+ AKs
MP3	20,000	1.5% KK+ AKs
CO	30,000	1.5% KK+ AKs
BU	10,000	1.7% QQ+ AKs
SB	9,500	2.6% QQ+ AK
BB	19,000	2.9% QQ+ AK AQs+

Once again, if we assume everybody at the table is calling half as many hands as they normally would, it is still correct to shove any two cards, even from under the gun. There is another reason why our range can widen a little under the gun and that is because we are going to be forced to post our big blind the next hand, and with only 10 big blinds we don't want to be forced to fold to a shove next hand and be down to nine big blinds. However, that doesn't change this being a profitable shove of 100% of our range in this scenario and once again it cements the fact that player tendencies are way more important than our hand in a satellite.

Shoving Any Two - A Warning

Before you go nuts and shove every hand late on in a satellite, there are

two important caveats to remember.

If you get your assumptions wrong and the calling ranges are wider than you think, shoving any two cards can not only be unprofitable, but very unprofitable. If a player at the table calls closer to how they actually should, or more than they should, that will make shoving any two a mistake.

Even if they are playing too tight, they will adjust if you shove every single hand. They will realise what you are doing. It is true that there are players who will literally fold every hand on the bubble of a satellite because they think that is 'correct' but most players, especially the regulars, will take a stand and in some cases you will see pure 'spite calls'. This is also worth considering in metagame terms if you encounter the same regulars in super satellites on the site you play poker, the good players will have made a note on you that you shove wide in satellites.

So while it might be theoretically correct to shove any two every hand, you need to be more selective in a satellite. Remember that all you need to do towards the end in a satellite is to maintain your stack, not to increase it. Do that until the bubble bursts and you win, and to do that all you need is one uncalled shove per orbit. Pick the spots that make the most sense, one or two times an orbit, enough to maintain the stack that you need. Pick out the tightest Blinds to go after rather than every single player, and leave the players you are not sure about alone. If you are the shortest stack in the tournament (or outside of the seat winning positions), however, then ramp up the aggression until you are not the shortest stack, because there is nothing worse in a super satellite than withering away and becoming so short that everybody is going to call you without fear. More people will bubble a satellite by getting blinded out than by being called with a bad shove; it is much better to go out swinging in that situation.

Adjusting to a Maniac

Now we have dealt with tight players let's look at the other end of imperfection, which is when players call too wide. This is perhaps a more important adjustment in my opinion because since apps like SnapShove and calling range charts (that don't factor in ICM) started to become popular, I've

noticed if anything players call too wide on the bubble. There are other reasons why players call too wide, most notably that people just make spite calls a lot of the time. If you are the Small Blind and you have annoyed the Big Blind who has a lot of chips, they might call you much wider and you need to adjust for that.

Once again, let's look at the same example we have been using, nine players are left, six seats to be won, five players have stacks around the 20-30 Big Blind mark, four stacks have around 10-20 Big Blinds.

We are the Small Blind with 10 big blinds, but this time the Big Blind is a maniac with 30 big blinds who we think is going to call blind with 100% of their range.

What is our shoving range when we think we are always getting called?

If this were a situation where both of us were playing optimally, we should be shoving 81% of our range when we factor in ICM and they should be calling with 26% of their range. However, we think we are getting called too wide.

GTO Shoving Range		
SB	9,500	30.3% 22+ Ax K5s+ K8o+ Q9s+ QTo+ JTs
GTO Calling Range		
BB	29,000	26.4% 44+ A2s+ A4o+ K6s+ K9o+ Q9s+ QTo+ JTs
Adjusted Shoving Range		
SB	9,500	30.3% 22+ Ax K5s+ K8o+ Q9s+ QTo+ JTs
Maniac Calling Range (40%)		
BB	29,000	40% 22+ Ax K2s+ K3o+ Q5s+ Q9o+ J8s+ JTo T9s
Adjusted Shoving Range		
SB	9,500	17.6% 33+ A2s+ A7o+ KTs+ KQo
Maniac Calling Range (70%)		
BB	29,000	70% 22+ Jx+ T2s+ T5o+ 95s+ 96o+ 85s+ 87o 75s+
Adjusted Shoving Range		
SB	9,500	12.5% 44+ A7s+ A9o+ KJs+
Maniac Calling Range (100%)		
BB	29,000	100% Any Two

So if GTO is calling 26% of the time and this player is only calling a bit wider at 40%, that drops our shoving range massively from 81% to 30% of hands. This is a really important adjustment to understand. When you are in a situation where the player calling slightly increases their calling range it significantly decreases our shoving range. We now basically need a pair or a high card in this situation for it to be a good shove.

If the Big Blind calls 70% of the time, now our shoving range goes all the way down to under 18%. If we think the player is really calling blind with 100% of their cards that goes all the way down to 12.5%. That really just takes us down to solid pairs and big Aces.

Adjusting to Maniacs

Once again, nine players are left, six seats to be won, five players have stacks around the 20-30 Big Blind mark, four stacks have around 10-20 big blinds.

We are in MP2 with 10 big blinds, we believe the Button and the Big

Blind are calling too wide and they easily have us covered.

What is our shoving range when we have to get it through two maniacs?

In a normal GTO situation the SnapShove and ICM ranges are similar, so we should be shoving just under 26% of our range, though the ranges themselves vary a bit. However, we think both Button and Big Blind are calling twice as much as they should. As you can see above the Button should be calling 5.2% of the time but we think they are closer to 10.4%, the Big Blind should be calling 8.4% but we think it's closer to 16.8%. How does this impact our shoving range which otherwise would be 25.7%?

GTO Shoving Range		
MP2	**10,000**	**25.7% 22+ A2s+ A8o+ A5o-A4o K5s+ KTo+ Q9s+ QTo+ J9s+ T9s+**
Calling Range		
MP3	20,000	4.3% TT+ AQs+ AKo
CO	30,000	4.7% TT+ AQ+
BU	10,000	5.2% 99+ AQ+
SB	9,500	6.6% 88+ ATs+ AQo+
BB	19,000	8.4% 66+ ATs+ AJo+
Adjusted Shoving Range		
MP2	**10,000**	**11.5% 66+ A7s+ A5s A9o+ KJs+**
Adjusted Calling Range when Button & BB call too much		
MP3	20,000	4.3% TT+ AQs+ AKo
CO	30,000	4.7% TT+ AQ+
BU	10,000	5.2% 99+ AQ+
SB	9,500	6.6% 88+ ATs+ AQo+
BB	19,000	8.4% 66+ ATs+ AJo+

Our adjusted range goes from 25.7% to 11.5%, so in other words it more than halves. The suited connectors disappear entirely as profitable shoves and we need strong pairs, Aces and Broadway hands to continue.

Adjusting to Maniacs - Under the Gun

Same example as before, nine players are left, six seats to be won, five players have stacks around the 20-30 big blind mark, four stacks have around 10-20 big blinds.

This time we are under the gun with 10 big blinds and we think everybody at the table is playing correctly, except once again the Button and Big Blind who have us covered and are playing too loose. Note we didn't say *everyone* was a maniac, this next example is to highlight the adjustment we make at a looser than average scenario when we also have to deal with a full table.

What is our shoving range?

Our range goes down to 16.3% in a normal GTO situation, but we believe the Button who should be calling 3.8% is actually calling 7.6% and the Big Blind who should be calling 5.4% is actually calling 10.8%.

GTO Shoving Range		
UTG	**10,000**	**16.3% 55+ A2s+ ATo+ A5o KTs+ KJo+ QTs+**
Calling Range		
UTG+1	20,000	3% JJ+ AK
MP1	30,000	3% JJ+ AK
MP2	10,000	3% JJ+ AK
MP3	20,000	3% JJ+ AK
CO	30,000	3% JJ+ AK
BU	10,000	3.8% JJ+ AK AQs+
SB	9,500	4.7% TT+ AQ+
BB	19,000	5.4% 99+ AQo+ AJs+
Adjusted Shoving Range		
UTG	**10,000**	**9.6% 88+ A8s+ A5s ATo+ KQs**
Adjusted Calling Range when Button & BB call too much		
UTG+1	20,000	3% JJ+ AK
MP1	30,000	3% JJ+ AK
MP2	10,000	3% JJ+ AK
MP3	20,000	3% JJ+ AK
CO	30,000	3% JJ+ AK
BU	10,000	5.2% 99+ AQ+
SB	9,500	4.7% TT+ AQ+
BB	19,000	8.4% 66+ ATs+ AJo+

If you look at the Big Blind or Button in a vacuum here it doesn't seem particularly important, because the Big Blind is still folding 89.2% of their hands and the Button is still folding 92.4% of their hands (and our shoving range has only dropped around 2% compared to the previous example). But the takeaway here is that our overall shoving range still drops considerably. So the mere presence of *any* player who calls to wide when a lot of players are left to act behind our shove should result in us tightening our range.

Adjusting to a Mix of Nits and Maniacs

In the real world it is more likely we are going to have a mix of nits, maniacs and players playing 'correctly'. The question is which player type is more important to adjust to - the ones who call too wide or the ones who call

to tight?

So let's use the same example as before, nine players are left, six seats to be won, five players have stacks around the 20-30 big blind mark, four stacks have around 10-20 Big Blinds.

This time we are under the gun with 10 big blinds, the Button and Big Blind call too wide, everybody else is a nit. Nits call half as much as they should, the maniacs call twice as often as they should. What is our shoving range?

GTO Shoving Range		
UTG	**10,000**	**16.3% 55+ A2s+ ATo+ A5o KTs+ KJo+ QTs+**
Calling Range		
UTG+1	20,000	3% JJ+ AK
MP1	30,000	3% JJ+ AK
MP2	10,000	3% JJ+ AK
MP3	20,000	3% JJ+ AK
CO	30,000	3% JJ+ AK
BU	10,000	3.8% JJ+ AK AQs+
SB	9,500	4.7% TT+ AQ+
BB	19,000	5.4% 99+ AQo+ AJs+
Adjusted Shoving Range		
UTG	**10,000**	**23.7% 66+ A2s+ A3o+ K6s+ KTo+ Q9s+ JTs**
Adjusted Calling Range with mix of Nits and Maniacs		
UTG+1	20,000	1.5% KK+ AKs
MP1	30,000	1.5% KK+ AKs
MP2	10,000	1.5% KK+ AKs
MP3	20,000	1.5% KK+ AKs
CO	30,000	1.5% KK+ AKs
BU	10,000	7.6% 77+ ATs+ AJo+
SB	9,500	2.6% QQ+ AK
BB	19,000	10.8% 44+ A8s+ ATo+ KQs

In this case we can actually shove a bit wider, with the top 23.7% of our range. If this were a table of nits it would be any two cards. 100% of our range is a shove in that situation, but at a table of maniacs it would be just 9.6% of our range. If everyone was playing GTO it would be 16.8% of our hands. So in this instance we can actually shove wider than GTO, because the presence of six nits more than balances out the two maniacs at the table.

Adjusting to Imperfection - A Summary

The first big takeaway is that our ranges widen against nits, in fact most of the time any two cards are good for a shove in 10 big blind situations.

Against maniacs our standard shoving range tightens, we can only usually

shove the top half of hands in our range, the real value hands we usually don't mind getting called.

It's a bigger mistake not to widen our range against nits than not to tighten against maniacs. We have already seen that in the right situation every hand is profitable (even 32o is healthily profitable).

Finally, the effect of one maniac is greater than one nit, so a table with one nit and one maniac should see you tighten up rather than shover wider. You can't put an exact ratio on it but from experience we would say one maniac is equal to approximately two nits, so in the above example of six nits and two maniacs we are ok to shove wider because it more than evens out.

Adjusting to a Mix of Stack Sizes

Ultimately your reads on whether a player is a nit or a maniac will trump any other read, but in the absence of any reads, your approach for whom to shove into based on their stack size should follow the same path whether it is against a nit or a maniac. That is, without any other reads, treat shoving into a small stack (whom you cover) the same as shoving into a nit, and shoving into a big stack (whom covers you comfortably) like you're shoving into a maniac.

The reason for this probably makes sense to you intuitively, the small stack or the nit do not represent much threat and will tend to err on the side of caution when it comes to calling for their tournament life, whereas the big stack or the maniac represents potential ruin to your chances. If you shove into a nit you can be confident they will fold most of their range and if you shove into a small stack you know that you will at least survive if called. If you shove into a maniac there is a good chance they will call and put you in a needless flip and if you are shoving into a big stack they can easily rationalise calling you because they will survive any encounter. As the bubble gets nearer, the big stack has more reason to call you if they are looking to end the tournament sooner and not waste any extra time stalling to the money.

Your approach at a table with a mix of big and small stacks (which it inevitably will be, especially in mega satellites) should mirror a table with a mix of nits and maniacs. As a rule of thumb you need two small stacks

behind you for every one big stack, again because the presence of the player who could end your tournament trumps everything else. There are times when shoving into a big stack is actually preferable when you yourself have a micro stack, which we will cover in the Mega Satellite chapter.

Let's take an example where there is a mix of small, medium and large stacks. In this example there are nine players and six seats to be won:

Shoving ranges by position		
UTG	10,000	17.1% 66+ A2s+ ATo+ A5o-A4o K9s+ KJo+ QTs+
UTG+1	20,000	43.1% 22+ Ax K2s+ K9s+ K7o Q2s+ Q9o+ J4s+ J9o+ T6s+ T9s 96s+ 85s+ 75s+ 64s+ 54s
MP1	20,000	46% 22+ Ax K2s+ K4o+ Q3s+ Q8o+ J5s+ J9o+ T6s+ T9o 96s+ 86s+ 75s+ 54s
MP2	20,000	55% 22+ Kx+ Q2s+ Q8o+ J2s+ J8o+ T4s+ T8o+ 96s+ 98o 85s+ 87o 74s+ 64s+ 43s+
MP3	10,000	39.5% 22+ Ax K2s+ K9o+ Q2s+ Q9o+ J7s+ J9o+ T7s+ T9o 97s+ 87s+ 76s 65s
CO	5,000	38.5% 22+ Ax K2s+ K8o+ Q6s+ J7s+ JTo T7s+ T9o 97s+ 86s+ 76s
BU	10,000	65.9% 22+ Kx+ Q2s+ Q4o+ J2s+ J7o+ T2s+ T7o+ 92s+ 97o+ 84s+ 86o+ 74s+ 76o 63s+ 53s+ 43s
SB	19,500	100% Any Two
BB	29,000	No shoving range

The noticeable thing here is that the ranges do not follow the same pattern of simply being tight early and wide late. It really does depend on whom the player is shoving into. UTG, for example, has ten big blinds and is shoving very tight with 17.1% of their range (compared to 65.1% in the equal stacks example), because there are seven players at the table who can end their tournament right there and then. UTG+1 however diverges massively and can shove 43.1% of their range, because they have 20 big blinds and only four other players are a threat to them.

GTO Shoving Range		
UTG	**10,000**	**17.1% 66+ A2s+ ATo+ A5o-A4o K9s+ KJo+ QTs+**
GTO Calling Range		
UTG+1	20,000	1.8% QQ+ AKs
MP1	20,000	2.3% QQ+ AK
MP2	20,000	3% JJ+ AK
MP3	10,000	3% JJ+ AK
CO	5,000	7.5% 77+ ATs+ AJo+
BU	10,000	3% JJ+ AK
SB	19,500	3.3% JJ+ AQs+ AKo
BB	29,000	4.7% TT+ AQ+

The GTO calling ranges are still tight, even for the bigger stacks. To call UTG who is shoving with 17.1% of their range, the Big Blind who has everyone covered still can only call with TT+ and AQ+. The same is true for everyone else at the table with the exception of the Cut-Off who only has five big blinds. They can call with 77+, ATs+ and AJo+. The reason for this is that with five big blinds at a table where everyone else has at least ten, you have to accept that you will be the next player out unless you take a stand, so while everybody else should be avoiding flips at all costs, it is a much better risk to reward option than blinding away.

Let's take these same stacks to a nine players, eight seats bubble scenario:

Shoving ranges by position		
UTG	10,000	35.5% TT+ 88-66 Kx+ Q8s+ JTs T9s 98s 86s+ 75s+ 65s 54s
UTG+1	20,000	100% Any Two
MP1	20,000	100% Any Two
MP2	20,000	100% Any Two
MP3	10,000	100% Any Two
CO	5,000	36.2% Ax K3s+ K9o+ Q6s+ QTo+ J7s+ JTo T7s+ T9o 97s+ 87s+ 76s
BU	10,000	100% Any Two
SB	19,500	100% Any Two
BB	29,000	No shoving range

Now UTG with 10 big blinds can only shove 35.5% of their range and the cut off with five big blinds can only shove 36.2%, but everyone else at the table, including two other players with 10 big blinds, can shove any two. Why is this? Well, we are on the bubble and those are the two most vulnerable players. The Cut-Off because they most likely will get called by the Big Blind in order to end the tournament, and UTG is susceptible too because they have to get through seven players who can bubble them.

UTG	10,000	Folded
GTO Shoving Range		
UTG+1	**20,000**	**100% Any Two**
GTO Calling Range		
MP1	20,000	0% No Hands Can Call
MP2	20,000	0% No Hands Can Call
MP3	10,000	0% No Hands Can Call
CO	5,000	2.7% 99+
BU	10,000	0% No Hands Can Call
SB	19,500	0% No Hands Can Call
BB	29,000	0% No Hands Can Call

The rest of the table can shove any two because, in a GTO world, they are never getting called. Above is an example of what the GTO calling ranges would be if UTG+1 (with 20 big blinds) shoved. As you can see, this is a spot where there is literally no hand anybody with 10 big blinds or better can call with, not even Aces, because not all of them can bust UTG+1 and for the ones who can it is still unprofitable when all the prizes are of equal value and they currently have a seat locked up. Once again, only the Cut-Off with five big blinds can call because they have to figure they will bust next if they don't get moving, but even their range has tightened up, even 88 or AKs is a fold for them. Most players know that the short stack has to call wider in this spot but they over adjust and go out calling with a hand like KQ, when in reality they need at least a strong pocket pair.

We don't expect you to be able to memorise any of these ranges and to get the best out of this book you will use it as a foundation to study specific hands you played. The big immediate lessons from this chapter should be how your standard ranges diverge depending on a number of factors. Whether it's a big stack, a small stack, a nit, a maniac or a GTO Wizard acting ahead of you, these should all influence how you adjust your standard shove ranges.

Key Takeaways

- Your opponents' calling tendencies are much more important

than your hand
- The later you are in position, the wider you can shove
- At a table full of nits, shoving any two cards with 10 big blinds is usually profitable
- The presence of a maniac or a massive chip leader at the table should see you dramatically reduce your shoving range
- One maniac at the table needs two nits to negate their impact
- One big stack at the table needs two small stacks to negate its impact

Chapter 6. Endgame – reshoves

Reshoving (or restealing, or 3-bet jamming) is when we raise all-in over the opening bet of our opponent. It is an important part of your arsenal as a satellite grinder as, once again, fold equity is the most important type of equity in these games. Reshoving allows us to take down bigger preflop pots uncontested.

If we shove more often than we open raise in satellites because we want to avoid bet/calling and bet/folding, does that mean we should be reshoving more over opens when we have a hand rather than flat calling them? It is true that the hands our opponents bet/call with are going to narrow significantly in a satellite and that reshoving is profitable for that reason. However, that does not mean we should reshove light as a bluff. When your opponent is bet/folding often it is a positive ChipEV move to reshove light, but from an ICM perspective the consequences when it goes wrong are much more severe.

In satellites our reshoving range should still be strong hands that have good equity when they are called.

Small and medium pairs do very poorly as reshoving hands because they are never in good shape when called, and will get called more often than hands with blockers. When you are near the stone bubble big pairs (QQ+) and suited/big Aces are much more effective. Even though a hand like A5 suited gets crushed by AK and medium pairs, what it does have going for it is card removal. It is a 'blocker' hand where we reduce the possible number of hands that could call us by virtue of the fact that we hold one of the cards in that range. In a regular MTT we don't mind getting our shove called with JJ because most of the time we double up and create a big stack to march towards the big money final table. In a satellite, where 8th might be as good as 1st, getting called when we hold JJ leads to disaster often enough that we actually prefer reshoving with A5 suited because we get called less often.

If we shove over an open raise with JJ on the bubble of a satellite, the typical hands that call us will be something like six combinations of QQ, six

combinations of KK, six combinations of AA and 16 combinations of AK. That is 34 combinations of cards. In the same spot if we shove with A5 suited we get called by six combinations of QQ, six combinations of KK, three combinations of AA and 12 combinations of AK. That is 27 combinations rather than 34, because the Ace in our hand reduces the overall number of combinations. A shove with A5 suited should get called 20% less often than JJ on a satellite bubble.

   To highlight this, let's compare a 20 big blind reshoving range where ICM is not a factor to a final table with four satellite seats on offer:

Early Position Reshoving Ranges (No ICM)		
Opening Range		
UTG	20,000	19.2% 66+ A5+ KQs KTs KTo+ QTo+
Reshoving Range		
UTG+1	20,000	7.8% 88+ 55 ATs+ AQo+ KTs+ QJs
MP1	20,000	7.8% 88+ 55 ATs+ AQo+ KTs+ QJs
MP2	20,000	8.6% 88+ 55 ATs+ AQo+ KTs+ QTs+ JTs
MP3	20,000	9.2% 55+ ATs+ AQo+ KTs+ QTs+ JTs
CO	20,000	9.1% 66+ ATs+ AJo+ KTs+ QJs
BU	20,000	10.2% 55+ ATs+ AJo+ KTs+ QTs+ JTs
SB	19,500	13.4% 22+ A9s+ AJo+ K9s+ KQo QTs+ JTs T9s
BB	19,000	14.9% 22+ A8s+ ATo+ KTs+ KQo QTs+ JTs T9s
Early Position Reshoving Ranges (Satellite with Four Seats)		
Opening Range		
UTG	20,000	12.5% JJ+ ATs+ A5s A4o+ KQs KJo+
Reshoving Range		
UTG+1	20,000	6.1% QQ+ ATs+ A8s-A2s AKo KQs
MP1	20,000	6.0% QQ+ AQs+ ATs A8s-A7s A5s-A2s AKo KQs
MP2	20,000	6.7% QQ+ AQs+ A8s-A7s A5s-A2s AKo KQs
MP3	20,000	7.1% JJ+ AJs+ A7s A5s-A2s AKo KTs+ KQo
CO	20,000	7.9% JJ+ AJs+ A5s-A2s AQo+ KTs+ KQo
BU	20,000	8.5% JJ+ AJs A5s-A2s AQo+ K9s+ KQo QJs
SB	19,500	10% JJ+ AJs+ A5s-A3s AQo+ K9s+ K7s-K6s KQo QJs
BB	19,000	15.5% 22+ ATs+ A8s-A7s A5s-A2s AQo+ K3s+ KJo+ QJs

It is interesting to note that with the exception of Blind/Button positions the equities for making and calling reshoves do not really change. It is still QQ+ and big Aces for the most part. This is because of the all or nothing nature of satellites and how calling or getting called is so important to avoid wherever possible. It loosens up a little when you get to late position because the opening ranges get wider, but the principle remains the same.

Shoving over Limps

You will encounter limps in the late stages of a satellite. It is rare, but happens often enough so that you at least need to have a default game plan

against limpers. In a later chapter we will look at when limping makes sense in a mega satellite as a way to dispatch a micro stack on the bubble without risking your tournament life and encouraging other players to flick in a chip behind you to do the same. Until then, let's look at a late stage in a satellite where someone limps when everyone has playable stacks.

We have looked at the merits of limping in satellites in depth using tools like HoldemResources Calculator. Those of you who are familiar with the software might be surprised to hear that limps summon up some of the most complex ICM scenarios we've ever seen. We could literally write a 1,000 page book exploring different satellite spots where limpers are involved and we still would not cover everything. Practically speaking, however, a default strategy for limpers is going to work often enough that you should not worry about the few times it doesn't. If you are an avid user of poker software then it certainly is the sort of thing you might want to play around with just to see how deep the rabbit hole goes, but it is not the best use of your time otherwise as there are more important things to learn as a satellite grinder.

As a general rule of thumb, with no reads on the person limping you can approach a limp the same way you would a minraise and shove over it with a similar range of hands. So shove strong hands that you hope to take the pot down with there and then, but which perform well when called. Now and then limps are used to trap, but more often than not limps are an attempt to play a pot with the least investment possible. You can expect to see small pairs, suited connectors and broadway hands which the player did not have the discipline to fold. If you have a specific read that your opponent is limping to induce a shove because they have Aces or Kings (an alarm bell should ring if they have been shoving 100% of their range prior to this), it should go without saying that your reshoving range should be Aces only.

Let's look at a theoretical stone bubble situation where nine players remain, eight players win seats, and everyone has 20 big blinds except for the Button who has 12 big blinds. We have picked this example to give an idea of baseline ranges, but also to show how a smaller stack should adjust to a limp. When we give the Cut Off a limping range of 22-55, 67s-QJs, KJs, KK and AA (which might be a typical weak players limping range of hands they want to see a flop with as well as two trapping hands), this is what an ICM

calculator advises the players left to act should do:

Cut Off Limps (Nine Players Satellite with Eight Seats)		
Limping Range		
CO	**20,000**	**6% KK+ 55-22 KJs QTs+ J9s+ T8s+ 97s-87s 76s**
Reshoving Range		
BU	12,000	19.2% AA Ax K4s KJo+
SB	19,500	100% Any Two
BB	19,000	100% Any Two

The first thing to note in this scenario is that when the Button folds, the Small Blind should shove 100% of their hands against this perceived range and the same goes when it is folded to the Big Blind. This is because the ICM pressure on the Cut Off is immense, as they are on the stone bubble and there is a shorter stack at the table. The Small Blind can comfortably shove 100% of their hands because the Big Blind should fold 100% of their hands because of that same ICM pressure.

The Button, however, has to tighten up. If it was folded to them they could shove almost 70% of their hands profitably, but because they are short stacked the limper can call without fear of bubbling and the Blinds, if they do call, will do so with a stronger range than if they were just facing an open shove. This all combines to significantly narrow the Button's range.

We could go on with further examples but it just gets way more complex for what is essentially a rare situation in satellites. You don't have to take our word for it, you can experiment with this yourself in an ICM calculator, but there are more important things you should probably be working on first.

Assuming your opponent is limping a wide range most of the time you can adopt a similar approach to normal shoves and reshoves. If you think the limper understands the ICM pressure on them then you can shove wider when you cover them. If you think they will call wide you should significantly tighten your range. If you are quite short yourself you should also tighten your range because the chances of getting called are much greater.

We wouldn't advise anyone to limp with any of their range late because fold equity is king in satellites. The only players who could realistically limp

in satellites profitably are the highly experienced GTO experts playing against other GTO experts, as they will already be familiar with the surprising complexity of these spots. For everyone else, take a headache out of the game and instead get the maximum out of fold equity.

Key Takeaways

- Your reshoving range should be tight because the consequences of being called are severe
- Assuming our opponents will fold more often in satellites, suited Ax hands perform better as reshoving hands than medium to big pairs, because they reduce the combination of potential hands that could call us
- Small pairs do very poorly as reshoving hands because they are rarely in good shape when called and they don't block the hands that call reshoves, so they get called more often
- If an opponent is limping a wide range, adopt a similar reshoving strategy against limps as you do open raises

Chapter 7. Mega satellites

So far the hand examples we have given have been final table scenarios where a handful of players win a seat. However, the majority of online satellites and many live satellites will award 10 or more seats meaning that everyone on your table could win and the dynamic changes significantly. From an ICM perspective the hand examples you have seen are still valid to give you a baseline idea of what your ranges should be. In a mega satellite it's the relative proportions that matter. Four seats, nine players remaining is approximately the same as 40 seats, 90 players remaining in terms of how it should affect your ranges.

With that being said, the more seats there are to be won in a mega satellite, the more insane the bubble becomes. When there are nine seats and ten people left and everyone has the same stack, that means everyone has a 90% chance of winning a seat, so you need to be a 90% favourite to call an all-in. When there are 99 seats and 100 players left, if everyone had the same stack you would need to be a 99% favourite, which is impossible preflop (the nearest is KK against K2o which is a 96% favourite, but you would never know you were in that situation).

The biggest difference between four seats and 40 seats is that you are going to get a greater spread of stack sizes across the tables. If you start with 20 players and get down to three with two seats, the short stack typically might have four starting stacks, the next player might have seven starting stacks and the leader might have nine starting stacks. In mega satellite you might have some people with less than a starting stack and somebody with 20 starting stacks. The important point here is that it is possible to get a seat in a mega satellite with a much smaller stack size than in a satellite with two or three seats. This means we can tighten up a lot earlier. When you are the shortest stack at a final table, you are the person who is most likely to get called when you shove. When you are the shortest stack on your table with 40 seats to play for, there are going to be short stacks on other tables who are also at risk. There is a high likelihood that they will panic and make a move prematurely. The biggest adjustment you should make as the shortest stack on the bubble of a mega satellite is to be prepared to literally stall and wait

until you are blinded out in some cases. That's sometimes your best shot as a micro stack. There could be somebody on the other table with eight big blinds who thinks they need to shove, not realising there is a player on another table with two big blinds.

Before the bubble we have already suggested that you slow down when you reach 70% of the average bubble stack size in a final table satellite. In a mega satellite you have an even lower target stack threshold, maybe closer to 50% or even 40% depending on how many seats are on offer. The spread of stacks will be such that if you have blinded down to 30% of the target stack on the bubble you won't even be in the bottom five players. As you get more experience you'll get a feel for what the stack needed for a specific tournament is, but as a rule start to slow down when you get to 50% of the target stack. The percentage of the target stack estimations here are a rough guideline based on personal experience, when the structures are slow and/or the players are tough, you will need a higher target.

Scanning the Lobby

Beyond the counterintuitive strategic adjustments you make in super satellites, maybe the biggest misconception about them is that they are boring because you are folding a lot at the end. This is just a sign of somebody who is playing them wrong. Super satellites are incredibly exciting near the bubble because you have to pay so much attention to what is happening both on your table and also the action on the other tables. When you are 56/59 and there are 50 seats, that is a tremendously exciting situation. You have to look at all the people ahead of you and behind you, the blind levels, the clock etc. There is nothing more devastating than going out on a satellite bubble and there is nothing more exhilarating than squeaking into the seats when you are super short.

In a mega satellite it is far more important to realise what your relative position is in the field than to focus on getting to the target stack size. That is especially true online where everyone has access to real time lobby information telling them their position and how many players are left till the money. You are also able to view the action on the other tables. There is a simple metric we can use here. If you are inside the bubble by more positions

than there are people outside the bubble, you should stall and fold all your hands. If there are 100 seats and you are 80th of 120, that means there are 40 players shorter than you and 20 people outside the top 100. That means you can blind out and there are at least 20 people who have to make a move before you do. In that spot you should be pretty much locked up. If you are 110th in that same spot you can't lock up, you have to make a move at some point. Once you are inside the money seats and have the buffer of more people being outside the money seats as you are in them, your focus should just be survival and not taking any risks at all. That's very easy to assess online, but not so much live.

This came into sharp focus the first time I played a WSOP Main Event satellite where there were about 1,080 runners and 54 packages. I was really short stacked the entire time, I was 750/800, 200/250, 149/150 all the way down to the bubble. I was hanging on grimly for dear life then with 60 people left I got lucky, I shoved with AK, got called by AK and four flushed the guy. That left me pretty comfortable despite only having about 25% of the target stack. As we got near the bubble most players were stalling (as they should be) and it became a matter of who hit the blinds first. We were on the exact bubble and there was a guy who had an ante left on another table, so hopefully he would be all-in next hand and it would be over. On my table the chip leader (1/55) was raising every hand for fun, so he opens and the player who was 3/55 defends his big blind, the flop comes K-5-3 and 3/55 shoves and gets snapped by the 1/55 leader. 3/55 had KK so he had top set, 1/55 had AA and caught runner runner to make a wheel. When I told that hand to different players everyone thought 3/55 was unlucky or that it was a cooler (meaning neither player had done anything wrong), but I was saying he should have folded preflop. There was no way he should have even been involved in that hand and the guy on the other table with half an ante gets a $14,000 WSOP package. I also saw people with 12 big blinds who were perfectly safe shoving the Button with JT suited because that's what you do in a regular MTT. That was a real eye opener for me for how bad people would play in super satellites. They were not paying attention to events beyond their table.

Don't be too black & white with your relative position at the table, however, as there will be times when you are relatively safe but your position

looks precarious in the lobby because you have just posted your big blind. It may show you as being outside the bubble, but only because there are stacks yet to post their big blind whom you will leapfrog the second that they do. This will also lull decent satellite regulars into a false sense of security if they see they are inside the bubble but neglect to notice they are posting their big blind soon. This is especially true in Six Max satellites, where you will post the big blind more frequently.

Don't become obsessive with the lobby and looking at every single table if it is a mega satellite with 40+ players on the bubble. That would be a massive drain on your attention, especially if you are playing other tournaments online at the same time. Instead, most poker lobbies will show you the full spread of player stacks from top to bottom. Find the bottom two or three stacks when you are on or near the bubble and monitor them instead. Don't worry about the players who currently have a seat locked up, focus on the players who have to make a move if they are going to outlast you.

Calculating COC in Mega Satellites

There are times when you need a more robust calculation than looking at how many positions you are inside or outside the bubble. In particular when you are in a satellite with a lot of good players, it's quite a deep structured satellite or the stacks are really close. This also happens sometimes when there is an unusual dynamic, like when at every other table everyone is stalling but at your table nobody is meaning you are being forced to play more hands than the stacks near to yours. I have had students who have felt they were being colluded against because they were one of 10 on a nine seat bubble only to blind out and bubble. The reality is that some satellite bubbles can go on forever when everyone is evenly matched. So while tracking how many positions you are inside the bubble is very reliable, there are some satellite bubbles that don't seem as 'safe' to just blind out.

To begin with just use the heuristic I suggested of locking up when there are more players outside the bubble than number of positions you are inside the bubble by. However, as you get more experienced you will start to recognise when the flow of the tournament is different to that.

In these cases I have another 'Gorilla Maths' methods for calculating

your approximate COC in mega satellites.

The first is to look at the lobby and take the player who is currently the exact bubble. So if it's 14 players left, 10 get a seat, look at whoever is 10th place. Assume that player is 50/50 to bubble, then compare your stack to theirs and work out how likely you are to bubble based on that. So if the bubble player has 100,000 chips and you have 200,000 chips, you are half as likely to bubble as them, so your chance of bubble is 25% (so your chance of cashing is 75%). Likewise is you have 50,000 chips then your chance of bubbling is twice as much as theirs, so it is 75%, therefore your chance of cashing is 25%. Just like in our early examples in the End Game chapters, the equity you need to call a shove is your COC from this calculation. So if you have 200,000 chips, the bubble has 100,000 chips, then your COC is 75% and you therefore need 75% equity to call a shove.

Assuming a tight player shoves into you with the top 20% of hands, then a quick play around with an equity calculator will tell you that AK is only 62% equity against that range and TT is right on the line at 75%. So practically speaking no unpaired hands and JJ or better.

Likewise if the bubble has 100,000 and you have 120,000, if the bubble player is 50/50 to cash then you are 20% more likely to survive than them, making your COC 60%. In this instance against that same tight range AK becomes a call, just.

This is a much simpler calculation than the standard COC calculation because you don't have to factor in all the other chip stacks around you, which would be near impossible in the moment anyway. You only need to look at your stack relative to the player who is a flip to survive.

Nine times out of ten when you have 200,000 chips to the current bubble's 100,000 chips, you will also be several positions ahead of them so the other simpler heuristic of locking up when you are well inside the bubble will achieve the same result. But on unusual bubbles where despite what your relative position says you do not feel safe, this is a useful backup calculation. Don't even bother memorising this way of doing a COC calculation until you start to regularly play enough tough satellites where you notice the dynamic is different to the standard satellites.

The above method is very approximate. A more precise method you can use near the bubble is decide how many seats are close to locked up, and then divide the remaining seats up according to stack size. For example, let's say there are 12 players left in a satellite with 10 seats and the first eight players are pretty much locked up. 9th has 200k, 10th has 160k, 11th has 100k and 12th ha 80k. We can now treat this as a four player satellite with two seats. Assuming the chances of 9th not getting a seat are 1x, 10th is then is 1.25x, 11th is 2x and 12th is 2.5x . There are two seats (200% expressed as a percentage) meaning two players will not get a seat so:

$$1x + 1.25x + 2x + 2.5x = 6.75x = 200 \text{ so } X = 200/6.75 = 29.6\%$$

Subtracting the chance of each player bubbling to get their COC gives us a COC of 70.4% for 9th place, 63% for 10th, 40.8% for 11th, and 26% for 12th. It is worth noting that even this method of calculating COC is very approximate. If we plug the above stack sizes into an ICM calculator, we will find the actual COC's are 67.5%, 59%, 40.4% and 33.1%. As we have seen before, this gorilla maths method tends to overestimate the COC of the bigger stacks and underestimate those of smaller stacks, but it's better to take an educated guess than no guess at all.

Stalling

Stalling is a strategy people employ in tournaments to avoid playing hands, you'll have seen it happen in regular tournaments when there is a big pay jump and it is even more useful in satellites. At the end of a satellite our ranges are often so tight that we cannot play many hands profitably. So the less hands we are dealt, the less blinds and antes we have to pay, and the less chance we have of being all in, so stalling makes sense. More experienced savvy players will stall a lot in a satellite. I once heard in a live satellite William Kassouf played seven hands when the other tables played four orbits, which was a massive advantage to everyone at his table, even though they were complaining about it at the time.

This is before play goes hand-for-hand, where there is generally no benefit to stalling, with one big exception. Let's say it is the bubble and you have 1.5 big blinds on the Button, so you will be forced all in the next time you are the Big Blind, but it is a way off. Over on the other table somebody is

in mid position with 2.5 big blinds, so at the moment they will survive paying the blinds. If you stall on your table and assuming the operator doesn't stop the clock (which they usually don't) you can force the blinds to increase before it gets to that player in mid position. A lot of the time the player will be very aware of this and it will force them to push all-in sooner.

I start to stall any time I find myself in a situation where I have to fold most of my hands. When I recognise I cannot play many hands profitably therefore I want to play less hands in general. Typically it is stack size related, when you have 20 big blinds or less, or basically when you have a seat locked up and getting involved in hands would be a mistake.

Your position on the table towards the end of the bubble is huge. You are probably better off being 100th of 105 with 100 seats as the Button, than you are being 95th but having to post the big blind next. This is why stalling is so important, once you are the Button at the final stages of a bubble you should stall as much as possible, assuming you have a stack that will survive an orbit of antes. This is because there is the longest time possible before you post the blinds again.

With that in mind, there are times when it is also correct to speed up and fold your hands right away, in the hope others at your table do too. This is when you are about to post your big or small blind when the blinds themselves are set to go up. Speeding up gives you a chance to post the cheaper blinds, before stalling again. Bubbles can go on longer than expected, shorties can double up, every chip you can preserve can be really useful. I often will snap fold three or four places before my next blind to avoid it going up when I am the Big Blind. This also helps to slightly reduce the image that you are stalling at the table, which some people, particularly live players, don't like.

If you are forced to push all in on the bubble but also want to stall because there are other players who will be punished by blind increases if you get the shove through, don't go all-in for your entire stack. If you have a 100,000 stack online, bet 99,999, which for all intents and purposes is the same as going all-in, but it means that if somebody wants to call you they are forced to reraise or they miss what you have done and call, meaning you go to a flop. It makes no difference to the ultimate outcome of the hand but what

it does is gives you a second chance to stall when the action comes back around to you, before you put your last chip in the middle. A word of warning, don't do this on a dodgy internet connection, and remember what you are doing. Back when I started doing this online, the first other player I saw doing the same was Chris Moorman. Chris tells a story about doing this once, then getting engrossed in a hand on another table, glancing back only when the beeps alerted him to a decision needed on the flop. Facing a bet and noting that he had whiffed the flop, Chris thoughtlessly clicked the fold button before remembering to his horror he'd left only one chip (0.1% of an ante) behind.

There is a question about whether stalling in satellites is an ethical move. It is, after all, not playing the game how it would otherwise be played if it were a normal tournament, but nor is folding Aces as you sometimes have to do in satellites. Everybody else in the field will be doing it, even some of the recreational players who haven't studied satellite strategy understand exactly what is happening and adjust accordingly. The cat is out of the bag when it comes to stalling. Any satellite you play 70-90% of the field will be doing it to you and that isn't going to change without major intervention from the poker room or tournament director. It has become de facto standard strategy and you are burning money if you don't do it in certain spots.

Micro Stack Strategy
We have already covered calls and shoves with a micro stack, which we categorise as having around five big blinds or less, but there are are some specific considerations in mega satellites that are very important. Some people will play a four big blinds stack the same way they would play a 10 big blind stack, which is a massive mistake in general but in satellites in particular. In mega satellites the spread of stacks are much wider and you have a lot of people who are comfortable nursing a seven big blind stack, which would almost never happen in a regular MTT. In the next chapter we will also be discussing why registering late for satellites is always profitable, even if you start the tournament very short stacked, so if you plan to follow that advice you need to have a solid understanding of micro stack play. Micro stack play is crucial for the spots where you are outside the bubble and you are looking to make a move to avoid blinding out before everyone else.

When you have a micro stack the range of hands you can profitably get your money in with widens considerably. From a pure ChipEV perspective most semi decent hands are worth pushing or calling with, but as we know in satellites we still want to avoid racing. You can still be tactical about when you shove and call, even with a five big blind stack.

Against other micro stacks you still have a smidgen of fold equity, but in general we can assume we have no fold equity most of the time. We can, however, steal fold equity from other players to at least ensure we only find ourselves heads-up against one player. The more players who call you, the worse it is in a satellite, because the extra chips gained from quadrupling up are rarely worth the increased risk of busting. For this reason, if we assuming we are getting called anyway, it is better to shove when the table chipleader is Big Blind. Firstly, they are the most likely to call you wide which is good for you equity wise. Secondly, and more importantly, tighter players yet to act behind who would otherwise call your shove may choose to fold, because they are worried that the chip leader could wake up with a hand and shove over them, putting them at risk. If you shove four big blinds and the Small Blind looks down at A8o and they see the big stack is behind them with 60 big blinds, they won't want to get involved. So you are stealing fold equity from the big stack, using the threat of elimination they present to the rest of the table to get your shove heads-up.

Another way to steal fold equity is when you are going to shove, bet an amount that is basically 99% of your stack, but not all of it. We have already suggested this to help you stall but it's a useful standard line when you are short stacked. If you have 35,000 chips and the Big Blind is 10,000, bet 30,000, leaving 5,000 behind. You didn't have fold equity anyway, nor will you fold to a reraise, so leaving that 5,000 behind doesn't make a difference to you. But to everybody else at the table it means they are unable to gang up on you comfortably by all calling your shove and checking it down. If somebody wants to put you all-in, they now have to raise to at least 60,000. Or if everybody calls you, they at least have to bet 10,000 on the flop. Either way this is not an ideal situation for the rest of your table, it forces them to put more money in the middle to get you out than if you had shoved, and many will not want to risk that much more because getting to showdown could put them at the risk. This also gives you a chance to stall as you either

get a second decision by calling the reraise or more decisions after the flop, even though it is abundantly clear what you are going to do in the hand.

Doing this in live tournaments means the dealer doesn't have to announce 'All-In'. It doesn't work very often but it does enough to justify doing it as a standard line. Online some players will see that they still have the option to reraise and might not notice you have so little left behind.

There is also a preferred situation for calling an all-in with a micro stack. If a big stack has been abusing the bubble and shoving half their hands, you are better off waiting for a spot where they have shoved ahead of you and you have a hand that does well against the top 50% of hands to call with. You are coasting along with them because everyone is going get out of their way. In general with a micro stack it's better to call a big stack shove with weak hand than to call a five big blind bet with a slightly stronger hand, because you run the risk in the second situation of getting another player to call to try and bust you.

Limping to Bust a Micro Stack

When a micro stack shoves for less than 2-3 big blinds they will usually get called by most players at the table. Or if the micro stack is the Big Blind and they are down to less than two big blinds, you will often see players limping in the pot, then all checking the hand down to eliminate them. This is implicit collusion and it's definitely the correct strategy. Do not let the name worry you, it is not unethical. The more people in the pot against the micro stack the better. If you have a remotely decent hand, or you're very comfortable in stack terms, this should be your strategy on the stone bubble.

Where it gets a bit murky is where you are at the table and you have a micro stack too. Losing two big blinds is a disaster if the short stack survives. It becomes a question of how likely are you to bust, and how does you becoming the short stack affect your equity? In these cases it is worth running a quick hypothetical COC calculation based on the formula earlier in this chapter if it's a mega satellite or the one from the end game chapter if it's a single table. What is your COC now compared to what it would be like if the short stack won? Because if six people call the short stack, and the shorty survives, they will no longer be a short stack, but you probably will be.

Let's say for argument's sake that there are 11 players left with 10 seats and you are 10th with six big blinds and shorty is 11th with two big blinds. You are roughly 75/25 for a seat at the start of the hand. Now shorty shoves, you are the Button and you are confident that if you call, so will Small and Big Blind (who are comfortable) and check it down. If shorty wins they now have eight big blinds and you have four. Now shorty is 67/33 to cash and you become only 33% likely to cash (because you are twice as likely to bust as they are).

If you fold and shorty gets called by the Blinds and wins, they have six big blinds as do you, meaning you are both 50/50 to win a seat thereafter. If you call and shorty quadruples up, you're 17% worse off than if you fold and they triple up.

A key decision in these cases, however, is whether you think any money will go in the middle after the flop in this hand, either because there is an inexperienced player who doesn't understand satellite strategy or a huge stack abusing the bubble out of spite. If you have developed a read on the table that this is likely, just get out of the way, otherwise it's worth calling with the intention of checking it down.

However, and this is a great general mantra for satellites, if you are unsure then just fold. It's usually a much smaller mistake to make a bad fold than a bad call, whether that's against a shove or a limp.

Key Takeaways

- The more seats to be won, the stronger your hand has to be to risk elimination on the stone bubble
- The stacks are much more widely spread out in a mega satellite so you usually can make the money with a much smaller stack
- If you are inside the bubble by more places than there are players outside the bubble, you can usually lock up and coast to a seat
- When the stacks are much closer, estimate how much more likely you are to cash than the player in the bubble position, assuming they are 50/50 to bust, to estimate the equity you need to

call a shove
- Your relative position is much more important than how close you are to the average target stack
- Stall whenever it is in your interest not to play many hands
- When you have a micro stack it's better to tangle with the biggest stack at the table, whether you are shoving or calling, because the chances of you being up against just one player are much greater.
- When you no longer have fold equity, leave a tiny amount of chips behind instead of shoving, it forces the other players to commit more money to bust you, which will get a few of them to fold when they would have called.
- It's almost always correct to call to eliminate a micro stack on the stone bubble, as long as you don't become the micro stack yourself if you lose

Chapter 8. Early game

The end game is the most important stage of the super satellite, which would lead most people to assume that the early stages and middle are the least important. This is certainly true in the sense that you can only lose a super satellite in the early blind levels, but how you approach the beginning levels of a super satellite really sets the tone for how to approach them in general. While mistakes made on the bubble have the most profound effect on your bottom line in a super satellite, those leaks are usually quite easy to fix. But a lot of players (including good regulars) have bigger relative leaks in their early and middle game strategy.

The late game really starts when a third of the field are going to get seats, and ICM is a bigger factor. Middle game starts when a fifth of the field are going to get seats. Everything before that is early game. Early is when everyone has roughly the same stack and everyone is super deep. Middle game is when stacks get shallower and there is also a large divergence of stacks where some people are short and some people are chipped up. The late stage is typically when there is very little postflop action and it feels materially very different.

Your default strategy in the opening stages of a super satellites should be to play tight and reduce your variance. There are five major reasons why we do this.

First of all the early stages of a satellite are low blind and usually have no antes, so the blinds are not worth stealing yet.

The second reason is what I call the 'Opposites Game' which is simply that you should play the opposite style to everyone at your table, so if they play tight you should play loose, and vice versa, to exploit those tendencies. In a super satellite the default style still tends to be pretty loose, because the player population is still quite weak and as previously mentioned even the good MTT regulars have not tightened up. Recreational players have not come to fold and tend to come into a satellite assuming they have to build a stack quickly (before tightening up). So you can make more money playing

tight and getting paid off with stronger ranges.

The third reason is that it is useful to build a tight image for later when you want to take down pots uncontested. In a regular MTT it might be better to build a loose image for later, so your big hands get paid off, but in a super satellite we want to avoid getting called at all costs. This is more important in a live satellite, because first impressions last. If you sit there and fold for the first hour and then start opening up your range, people will not automatically think you are changing gears, they will still have you labelled as tight. It's really important to have an image where you can steal later on in satellites because as we have seen in the end game chapter, fold equity is so important on the bubble. This is still important in an online MTT where you can't expect everybody to be paying attention to how many hands you played, but their tracking software's HUD may have.

The fourth reason is that if you are playing several online MTTs it makes it much easier to handle all of them if you narrow your range. Playing 25% of hands on 12 tables is way tougher than playing 5% of your hands on 12 tables. The less hands you play on each table the more tables you can play. Later on in the satellite when you are perhaps opening more depending on the situation you would have to assume you have bust out of a few of those tournaments and have more time to devote to each table.

The final reason is that in the early stages of a satellite, unless you are playing against regulars you know, you will not have any real reads or HUD stats. You won't know how they play and you don't want to be involved in a tough hand where you have a marginal decision.

In the early stages you should be observing how your opponents play before you get in any big pots against them. Take notes if it is online, take mental notes if it is live. In a live satellite you should in particular listen to table talk because this is a gold mine of information. I really cannot emphasise this enough, even if you are being observant on the action, most of the hands do not go to showdown. People are simply not able to hide their satellite acumen when they are chatting at the table. This is true of recreational players in particular, we have all been at tables where a recreational player comments on every hand that goes to show down. They'll say things like "he should have check raised the turn" or "she should have

folded that preflop". They are basically revealing their entire playbook, both on the hands they play and the hands everybody else plays. You will increase exponentially the information you have on the weaker players by listening in, and those players are the ones you can exploit the most.

When observing the table and the table chat, an important exercise to do is to make estimations on everybody's understanding of satellite strategy and ICM. Make player notes and be prepared to update those notes when new information comes to light. As you have seen in the previous chapter, it is very important to be able to estimate what our calling and shoving ranges should be and that is often entirely dependent on whether the villain understands ICM in satellites. It is very useful online when a player joins your table whom you have previously noted that they 'understand satellite ICM' or indeed that they 'called a 15 big blind shove on the bubble with KQ when they had a seat locked up'.

Not only will this approach be the best use of your time in the early stages, from a mental game perspective it will probably occupy your mind well enough so that you do not get bored and start opening hands you shouldn't be playing in a tournament where there are no extra prizes for finishing with the most chips. It is also useful to remember that most of your opponents, even the good players, will not be doing this exercise of gathering information, so it is an area where you can create and edge where others can't.

Variance - The Silent Killer

As we briefly covered in the 30 minute primer, the strategy in satellites should be to play tight and lower variance. The reason that we want to reduce variance is because, for example, in a super satellite with 12 seats you are basically trying to come 12th. In a normal tournament you are trying to come 1st, then 2nd, then 3rd, and so on. In a super satellite you want to finish in whatever position the first seat pays out at. So you are therefore incentivised to lower your variance as much as possible because there is no reason to take a high variance line in order to get a big stack.

The bigger your stack size the more this is true, because you have everything to lose and little to gain. The bigger your current chance of

cashing is, the more you should be reducing your variance. Pocket Eights would be a disastrous hand to stack off with against a shove when you have a stack that could fold its way to a seat, but if you are really short and in danger of blinding away before the bubble then it's often a good hand to get your money in with.

Now we will look at two important calculations you can make in real time at the tables that will help you understand what stage you personally are in in the super satellite, which will help you understand whether you should be reducing your variance and playing very tight, or taking more risks to try and get back in the game.

Average Cash Stack (ACS)

ACS, also known as 'target stack', is the average size of a stack that survives a satellite when the bubble bursts. This is essentially your target at the start of the super satellite, you are trying to get to this stack size. At the very beginning of the satellite you should be aware of what the ACS is for the tournament and you should be monitoring all the time where you are in relation to it. When you get to this stack, you should be able to maintain a seat until you get to the bubble.

Generally speaking when you get to 70% of the ACS you will be relatively safe, so when you get there it is time to drastically lower your variance and pick your spots carefully to avoid going under it. In practice 70% of ACS will get you over the line in a satellite because a couple of players will have a huge stack and many more will be desperately nursing their small stacks hoping somebody on another table does not realise how short they are.

ACS is usually easy to calculate because the number of seats tends to be a clear percentage of the number of entrants. If 20% of the field wins a seat then the ACS will be five times the starting stack, if 10% of the field bags a ticket then it will be ten times the starting stack, and so on. Essentially multiply the number of entries that make up one seat by your starting stack and that is your ACS.

- *If one in ten players wins a seat and the starting stack is 10,000, then your ACS is 100,000*
- *If one in twenty players wins a seat and the starting stack is 2,000, then your ACS is 40,000*
- *If one in three players wins a seat and the starting stack is 1,500, then your ACS is 4,500*

It's important to note at this stage that your ACS will be the same regardless of the number of entrants, assuming the tournament meets any guarantee it has. So in the first example above, whether the tournament gets 20 players or 2,000, your ACS is still 100,000.

This does change if you are in a super satellite with a big guarantee that might not get there. Once again, this is one of the reasons why super satellites are a great game to grind, because they often have overlays. In this instance the best advice is to start by assuming the ACS if the guarantee were met, but re-evaluate after late registration has finished. After which, look at the number of chips in play and divide them by the number of seats on offer and you have your new, lower, better value, ACS. So in the first example above, if 10 seats were guaranteed but only 50 people entered, the new ACS would be 50,000 (not 100,000) because:

- *50 players x 10,000 starting stacks/10 seats = 50,000 average cash stack*

Calculate your ACS at the start of the tournament and play the tight end of your normal game until you get to around 70% of ACS. In the first example above, that would be around 70,000 chips (or 35,000 in the overlay situation). Once you reach this stack, lower your variance and switch to preservation mode.

Chance of Cashing (COC)

We've already encountered this in the End Game chapter but that calculation was in the specific context of ICM and bubble decisions. We also need a COC calculation to use throughout the tournament from start to finish to determine how likely you are to win a seat relative to the rest of the field.

The COC calculation is different in the early to mid stages of a tournament. This calculation is fluid depending on how many players are left in the tournament so, again, it is something you should be monitoring throughout the tournament. This is a useful calculation to help you reduce variance because the higher your COC is, the less risks you should take, even if you are nowhere near the ACS yet.

Early on in the tournament you need a rough calculation to work out your COC, which is:

Stack size/ACS (Capped at 1)

So if your stack size is 50,000 and the ACS (target stack) is 100,000 then you are currently about 50% to win a seat. If your stack size is 2,000 and the ACS is 100,000 then you are only 2% to win a seat. If your stack size is 100,000 and the ACS is 100,000 then you are roughly 100% likely to win a seat. However, if your stack size is 140,000 and the ACS is 100,000 then you are still only roughly 100% to win the seat because this rough calculation is capped at 1, you cannot be more than 100% likely to win a seat.

So let's use an example to see why these are useful calculations while playing. The starting stacks are 10,000, 10% of the field get a seat and we have 80,000.

The ACS is 100,000 (10,000 starting stack x 10 players per seat)
Our COC is 0.8 (80,000 stack/100,000 ACS)

If we find ourselves in a coinflip for 50,000 chips. Half the time we lose and drop to 30,000 or a COC of 0.3 (or 30%). Half the time we win and move up to 130,000 but our COC would only increase to 1 because as mentioned, COC is capped at 1 (or 100%).

So while this is a 1/1 flip in chip terms, the true odds are actually 2/5. So rather than needing 50% equity to call, we actually need 72% equity for this to be a profitable call. This should reinforce why it is so important to avoid flips and calling all-ins in general when our COC is already high. Any time that your COC is above 0.5 (or 50%) you are risking more than you stand to gain in a satellite.

Lowering Variance

In a normal MTT with 1,000 runners you are heavily incentivised to finish 1st, then 2nd, and so on. If you play a satellite with 1,000 runners and the first 100 people are going to live and the other 900 people are going to be killed, I can guarantee you it would not play like a normal MTT in the early stages. That would really focus the mind on the fact you need to come 100th. The practical, strategic change that materialises is a low variance style and not taking slim edges for lots of chips.

We have already discussed at length low variance play at the end of a satellite, but how do we lower it in the early and middle stages when the options are more numerous than shove, call and fold?

The first way is to open tighter. Quite simply the less hands you play, the less chance you have of busting. Drop all the weaker hands from your opening range and simply don't play hands that can get you into trouble. Throw those rag Aces and KT offsuit in the Hijack away, for example.

If we are opening tighter, we should call way way tighter. When you open you can always make everybody fold, but when you call that is not true. You will at least see a flop when you call and generally the maxim of 'you need a better hand to call than to raise' works double in satellites. Given you are calling less you should also be defending your Big Blind a lot less too, even with speculative hands like small pairs and suited connectors. Speculative hands usually miss, meaning that you bleed chips chasing draws, bluffing or getting involved in flips to realise equity. It's much better just to avoid those situations. There has been a correct trend recently in tournaments to defend the Big Blind more in regular tournaments but it is still a mistake in satellites.

Avoid bluffing in general too. When you are chasing a draw you know roughly what your odds are to hit that draw, but when you bluff you never really know if that bluff is profitable or not. Let's say you bluff for half the pot, so you need the bluff to work 1/3 of the time to be profitable. If the player folds you might think it's a good bluff, but you may have just found the 20% of times they do fold. If the player calls you may think it was a mistake, but you may have just ran into one of the rare times that they call. With a bluff you can never be sure, because you don't really know what is in

another player's head. Bluffing adds an extra layer of variance.

We should be more inclined to take a low variance line like flatting instead of 3-betting, because even if we have an equity edge vs their 'get it in' range, it's probably not that big. If we think a guy only gets it in with TT+ and AQ, it's still not a brilliant situation for us to get it in with Queens. We are 55% against that range, so still lose almost half the time, which is not worth it in super satellites.

There are a lot of spots where you look at them in a solver, the EV of checking or betting would be the same. Often when you drill down what you'll find if you have a decision to c-bet, if you bet on the flop the solver will also fire a lot of turns and a lot of rivers. So it's committing a lot of chips to a thin EV spot. But when you check in the same spot on the flop, the solver tends to check down on later streets. In a normal MTT you can advocate for the merits of both, but in a satellite the low variance line is better. The EV roughly the same but it also requires us to put a lot less chips in to realise that EV. We will take a closer look at what solvers tell us about post flop play late on in satellites in the next chapter.

A general principle of lowering variance is to put less chips in the pot. However, this does not mean you should always play like a nit, in fact if you do too much then you'll you become easily exploitable. There are so many spots that are insanely profitable, even when it's a satellite, such as completing the small blind when several players have limped and you have a speculative hand, or calling a min raise in the Big Blind that has had several callers.

Generally speaking, we want to avoid speculative hands when the stacks start to become shallower. It's easy to play a small pair or suited connector with 100 big blinds but when you get down to 40 big blinds or less, the chips you bleed chasing draws are too valuable to waste. However, in situations where you do get to the flop with a big combo draw you are better off playing those spots aggressively. Fold equity trumps all other equity in satellites if you can get the chips in first.

In the same way that A5 suited is often a better shove in the late stages than JJ, in the middle stages A5 suited is a better hand to open with than 88.

If you are in a situation where people are not defending as much and they are 3-betting when they do have a hand, you are better off with the A5s because it blocks a lot of hands that would 3-bet you (in either case, you can't call a 3-bet). In a normal MTT there are a lot of spots where you would raise/call 88 but in a satellite the 3-betting ranges have changed so much, they are more high card heavy and hardly any small pairs you would dominate.

This is the opposite of standard MTT strategy where small pairs hold their equity against wide shoving ranges. However, it's important to note in spots where you have a big chip leader shoving and reshoving any two for fun, hands like 88 and 99 hold their equity much better than AK, where you are wouldn't be happy to find yourself up against a random hand like 85o.

Early ICM

A common mistake good players make in satellites is not realising how early ICM becomes a factor. The general consensus seems to be that ICM only really becomes a factor on or near the bubble, and everything up until that point should be played like a regular tournament (or even worse, like a ChipEV cash game). You will see players take massive risks early because they intuitively know that there is a target stack to get to around the bubble and they need to take risks to get there, before they can lock up. You see this a lot in Double or Nothing SNGs, where a lot of players have the mentality that they need to win a flip and then all they have to do is fold to the money. This is a very flawed logic which will cost you a lot of money in satellites

The eye opener for me was Collin Moshman's seminal book 'Sit 'N' Go Strategy'. In the preface to that he gave the example of a nine man SNG, which were the most popular back then, where the top three get paid 50/30/20. Moshman showed that because of ICM, if two guys get it in during the first with hand Ace King against Pocket Deuces, while one player will double their chip count they will not double their equity. If it is a $50 SNG the winner's EV rises to $91.25 and the loser obviously goes down to zero. So the other $8.85 disappears to the other seven players at the table. In a nine man SNG there is no difference between ninth and eighth, so you could say the first pay jump is zero. So two guys getting it in early, if it was a coinflip, are costing each other almost 20% of a buy-in. Those are the concepts people

just don't get, they focus on the bubble exclusively, they don't realise how early ICM comes into play. In this example you need way more than 50% equity, so even getting QQ in against AK would be a mistake (if you knew you were against that hand).

Start of a Nine Man SNG			
Payout	Prize	Stack	Equity
1st	$225	10,000	$50
2nd	$135	10,000	$50
3rd	$90	10,000	$50
4th		10,000	$50
5th		10,000	$50
6th		10,000	$50
7th		10,000	$50
8th		10,000	$50
9th		10,000	$50

After Two Players Get It All-in Hand #1			
Payout	*Prize*	*Stack*	*Equity*
1st	$225	20,000	$91.25
2nd	$135	10,000	$51.25
3rd	$90	10,000	$51.25
4th		10,000	$51.25
5th		10,000	$51.25
6th		10,000	$51.25
7th		10,000	$51.25
8th		10,000	$51.25
9th		0	0

If you do the same thing in a satellite, that equity impact is more extreme. Let's say again it is a nine person satellite with a $50 buy-in and there are three seats to be won. As you can see, the player who doubles up gets even less equity:

After Two Players Get It All-in Hand #1 (Satellite with Three Seats)			
Payout	*Prize*	*Stack*	*Equity*
1st	$150	20,000	$87.50
2nd	$150	10,000	$51.79
3rd	$150	10,000	$51.79
4th		10,000	$51.79
5th		10,000	$51.79
6th		10,000	$51.79
7th		10,000	$51.79
8th		10,000	$51.79
9th		0	0

Then just hypothetically let's say it is super flat, with five seats being won out of nine:

After Two Players Get It All-in Hand #1 (Satellite with Five Seats)			
Payout	*Prize*	*Stack*	*Equity*
1st	$90	20,000	$75
2nd	$90	10,000	$53.57
3rd	$90	10,000	$53.57
4th	$90	10,000	$53.57
5th	$90	10,000	$53.57
6th		10,000	$53.57
7th		10,000	$53.57
8th		10,000	$53.57
9th		0	0

The flatter the payouts and the more prizes to be won relative to the field, the more damaging it is to get your money in the middle of the table without strong equity. This should already make sense but a lot of people come into satellites with a skewed logic of "I need to double up first, then I can play really tight".

While we are touching on older poker wisdom, another useful concept to be aware of is 'Bubble Factor' which was introduced by Lee Nelson, Tyson Streib and Steven Heston in their book Kill Everyone. This concept was developed to understand how big a factor ICM was early in regular tournaments. Bubble Factor is a multiplier for the equity you need to make a correct call in a tournament. So for example, early on you may get 50/50 ChipEV odds to call but the correct odds needed to call would be 60%, so the Bubble Factor would be 1.5, meaning you'd need to be a 4/6 favourite.

At the start of a tournament where you are nowhere near the prizes it might be 1.01, at the end of a tournament will be 1.0, because it's heads-up and thus a pure ChipEV matchup. However, between those positions it fluctuates massively. The more people bust the bigger it is, and it peaks at the money bubble, it's usually about 2.0 or 3.0, before dropping down again. It then rises for the next big cash bubble like the final table, and then declines as players bust on the final table to 1.0 heads-up. Bubble Factor also changes depending on your stack and your opponent's stack. A small stack vs a small stack has a lower Bubble Factor than a short stack has against a big stack, which confirms what we discussed in the end game chapter about short stacks calling wide vs other short stacks on the bubble.

We can't really explore Bubble Factor much further because not only is it beyond the remit of this book and it would do a disservice to Kill Everyone, which is certainly worth checking out. The authors also used a literal supercomputer to develop it.

The point is that you still need to think you are a massive favourite to justify getting it all in when you have a deep stack, whether it is early, middle or late in a satellite. There are so many potential scenarios you can find yourself in at every stage of a satellite that are unconventional. If you are interested, software like HoldemResources Calculator and PioSOLVER are very useful for you to analyse these scenarios yourself if you want to become an advanced satellite player. However, you can short circuit a lot of these tricky scenarios by simply taking the lower variance option when you have a close decision. If you are unsure whether to complete or fold, fold. If you are unsure whether to bet or check, check. If you are unsure whether to 3-bet or flat, flat. You can always mix your game up and take the more aggressive line against the regulars you see all the time.

Late Registering

One of the biggest decisions you will have when it comes to the early and middle stages of a satellite is when to register. As we have already explored, the early stage is the time to establish a tight image and profile your opponents, and that is certainly what you should be doing as you learn how to play satellites. However, as you get more advanced, there is a lot more merit to registering late.

Even though you will play against the worst players at the start of a satellite, the benefit of registering later is you get an instant ICM edge, especially in rebuy formats where there is an add-on. Satellites are not about getting the most chips, they are about getting to the bubble and surviving. The later you register the nearer you get to the bubble without risking your tournament life. For example, if a satellite has 100 runners, 10 seats and everyone starts with 1,000 chips, you might be able to late register when just 30 players remain. If you started at the beginning you would have a 1-in-10 shot at winning a seat, when you late register you don't have a 1-in-3 shot because you will be coming in with a shorter than average stack and not

much room to pick profitable spots to get your money in, but you will have a better than 1-in-10 shot.

Let's use an extreme ICM example to illustrate this. Let's take an unlikely scenario where there are 89 players and nine seats in a $100 tournament, and magically we can late register right on the bubble. Our starting stack is 1,000 but everyone else has exactly 9,900.

Late Registering on the Bubble (Satellite with Nine Seats)			
Payout	**Prize**	**Stack**	**Equity**
1st	$1,000	98,890	$972.98
2nd	$1,000	98,890	$972.98
3rd	$1,000	98,890	$972.98
4th	$1,000	98,890	$972.98
5th	$1,000	98,890	$972.98
6th	$1,000	98,890	$972.98
7th	$1,000	98,890	$972.98
8th	$1,000	98,890	$972.98
9th	$1,000	98,880	$972.98
10th		10,000	$243.15

Our ICM in this spot, even though we are a massive underdog from a chip perspective, is $243. We have instantly made $143 in equity by buying on the bubble.

That is with all the stacks being equal, let's do the same thing but with a mix of stack sizes:

Late Registering on the Bubble (Satellite with Nine Seats)			
Payout	*Prize*	*Stack*	*Equity*
1st	$1,000	170,000	$997.18
2nd	$1,000	150,000	$995.65
3rd	$1,000	140,000	$994.54
4th	$1,000	120,000	$991.14
5th	$1,000	90,000	$980.07
6th	$1,000	80,000	$973.11
7th	$1,000	50,000	$924.36
8th	$1,000	50,000	$924.36
9th	$1,000	40,000	$885.81
10th		10,000	$333.79

In this case we have $333.79 in equity, so we have made $233.79 for buying in late. Obviously this is a near impossible situation as no operator allows registration this late, so let's do an example that is more realistic. This time, it's a $100 satellite with 50 players, five seats to be won and we buy-in in with nine players remaining, our opponents all have equal stacks.

Late Registering near the Bubble (Satellite with Five Seats)			
Payout	*Prize*	*Stack*	*Equity*
1st	$1,000	54,480	$541.76
2nd	$1,000	54,440	$541.49
3rd	$1,000	54,440	$541.49
4th	$1,000	54,440	$541.49
5th	$1,000	54,440	$541.49
6th		54,440	$541.49
7th		54,440	$541.49
8th		54,440	$541.49
9th		54,440	$541.49
10th		10,000	$126.31

This time we have equity of $126.31, so we have made a ¼ of a buy-in. Now the same example but with mixed stack sizes:

Late Registering near the Bubble (Satellite with Five Seats)			
Payout	*Prize*	*Stack*	*Equity*
1st	$1,000	94,440	$777.17
2nd	$1,000	84,440	$740.34
3rd	$1,000	74,440	$696.21
4th	$1,000	64,440	$643.27
5th	$1,000	54,480	$580.06
6th		44,440	$504.10
7th		34,440	$414.99
8th		24,440	$311.81
9th		14,440	$194.37
10th		10,000	$137.68

Again, we have made $37 in equity in this example.

The better you get at satellites, usually the better off you will be registering late, even if you have a massive deep stack skill edge against the weak players at the start. Two exceptions here would be live events, where you can amass more reads on your table and build a more reliable image, and 'bucket list' event satellites like the WSOP where the players are so bad you can't pass up the chance to play against them. There is also a very rare exception, usually in smaller online feeder satellites, where the number of players at the start of the satellite is less than or close to the number of guaranteed seats. This is an overlay and it is worth registering early and playing fast, in the hope that you can all get to the money before somebody else registers.

Otherwise, not only does registering late give you an instant ICM boost it will also put you right into the end game and micro stack strategy portions of the game where a solid satellite regular has an edge.

Key Takeaways

- ICM matters much earlier than most people think, you are burning money if you take flips and call all-ins needlessly
- When your COC is more than 50% you risk more than you stand to gain taking a coinflip

- If a decision is close, pick the lower variance option
- Early registering is best when the fields are incredibly soft or you are going to use the time to develop reads on your opponents
- Late registering is higher variance but gives you an instant ICM boost

Chapter 9. Post flop

We began the deep dive into satellite strategy with an end game section that consisted entirely of shoves, folds and calls, with no advice on how to play post flop. This was because practically speaking you are rarely going to experience standard postflop situations when you are near the bubble. The stack sizes in general will be shallow anyway with a lot of micro stacks hanging on for dear life. Most players will be open shoving their hands anyway and if you min-raise opening hands you will probably get shoved over if you get any action at all.

Now that we have looked at a lot of the theory we wanted to touch on this again very briefly to explain to the curious among you why practically speaking it's better not to get involved in post flop pots in the late stages of a super satellite. This is not going to go into the same depth as the other sections, mostly because my advice remains the same, you should avoid playing post flop late in satellites unless you have a particular read on your table that would make playing post flop profitable. If you want to learn more then by all means study this in PioSOLVER (a very fast GTO solver that has revolutionised high stakes poker) as we have, but your time would be better spent working on other aspects of satellite strategy.

I had a Eureka moment once in an EPT Main Event where I defended wide in the Big Blind against a preflop open (as I usually should) and flopped top pair. I called a continuation bet (again, as I usually should) and then on the turn my opponent put me all-in very close to the money, forcing me to fold. This was the ideal spot to defend in the Big Blind yet here I was having to fold. I realised that if I can't even get my money in the middle of the table in this dream spot when there is such huge ICM pressure on me, why defend in the first place?

This Eureka moment was a realisation of the concept of 'Range Advantage' and how it adjusts when ICM is a factor. Range Advantage is understanding not the strength of your specific hand, but how your entire range of hands plays in that situation. In the long term, especially against good players, playing your range instead of your hand is harder for your

opponents to exploit. A simple example might be raising under the gun with AK, getting called by the Big Blind, the flop comes Qh2s2c. You have missed the flop completely but a typical under the gun raiser would still bet that flop because they have lots of hands that like that flop - TT/JJ/QQ/KK/AA/AQ are all hands that would probably continue bet on that flop for value, the Big Blind knows that, so it's profitable to still bet. It's hard for the Big Blind's defending range to have many hands on that board, as few 2s call, the bigger pocket pairs would have reraised and we make them having AQ or KQ less likely because we have an Ace and a King ourselves. Likewise if the flop came 6h7h8s then we don't have the same Range Advantage, as an under the gun raiser rarely has hands like 45, 9T, small heart draws or smaller pairs, but the Big Blind does, so this may be a flop to avoid betting because the Big Blind will call or raise it a lot.

In satellites (as well as some of the bigger regular bubbles in normal MTTs) the ICM pressure will often flip how you are supposed to play with or without Range Advantage. Just as the initial ICM calculations we did in the first chapters of this book are based on everyone understanding Game Theory Optimal satellite play (and then we adjusted for imperfection) so too does this discussion of Range Advantage. If your opponent does not understand range in general, this advice is moot and you should just play to exploit them however you feel necessary based on your reads. For those who do understand it, we have done extensive research in PioSOLVER to identify the optimal way to play post flop with or without Range Advantage near the money in satellites.

The big adjustment will always be based on whether you are covered by your opponent or whether you cover them, because as you'll understand at this stage the ICM pressure is enormous on you when your opponent covers you.

When you hit a dry board as the preflop raiser (let's use that Q-2-2 example from before) and your opponent checks, you should normally bet that flop 100% of the time. You have the Range Advantage here, your opponent should know that, and you can usually take the pot down uncontested a lot, making this immediately profitable.

However, when you are covered and it is near the bubble, PioSOLVER

calculates that in most cases you should bet 0% of the time, even with your really strong hands. So even when you have Aces or better on this flop, it's a check back. Why?

The reason is that as somebody who *could* be eliminated in this hand and because of the all or nothing nature of satellite bubbles, you can't even get your chips in the middle with near nut hands. Those equities you need when you do your preflop COC calculations remain the equities you need post flop too. If you needed 75% equity to get the money in preflop then you need it on the flop, and against a strong range top pair might not have 75% equity on a flop like this. You wouldn't call off with that equity if it was against a preflop shove so near to the money in a satellite, so you can't do it now.

If you only bet your near nut hands that can stand the ICM pressure, your opponent will know (if you play against them often enough) that every time you check, they can set you all-in (and they can get out of your way cheaply when you bet) on a later street. So the only GTO line you can usually take when you have Range Advantage and you are covered is to check all your hands and call with the strong ones when your opponent bets.

Now look at the exact same example but from the other player's perspective. We cover our opponent who has Range Advantage, but we have the ability to bust them, whereas they cannot bust us. Now PioSOLVER will tell you to make a donk bet (a lead bet into the preflop raiser) 60% of the time, when in non-ICM spots that number would be 0%. In spots where the preflop raiser does not have Range Advantage, Pio will say donk bet 100% of the time.

The final big adjustment a deep dive into post flop near bubble satellite strategy reveals is that the bet sizings go way down. You actually see this a lot in Super High Roller tournaments near the bubble as the players in those games have a solid understanding of GTO and ICM. You will see them make 15% of pot bets when they cover their opponent on the flop. Although in non-ICM situations such a small bet could be justifiably called by almost any hand, near a bubble their opponent still has to fold a lot, making the small bet super profitable. On the bubble, especially a satellite bubble, if your opponent makes a 15% bet you have to fold all the hands that cannot stand any further heat. You can't call with your bottom pair, medium pair, high card and in

some cases top pair type hands because you are going to have to fold to further bets on the turn and river. You can only call with the nutted part of your range, which you would have called a half or two thirds size bet with anyway. So a small bet by the covering player achieves the same result while risking much less.

Quite simply the upside of doubling up as the covered player is nothing compared to the downside of bubbling. ICM will always trump Range Advantage when you are near or on the bubble of a satellite. When you are covered near the bubble of a satellite, any post flop line you take has to be very passive, even with your monsters. Knowing that it begs the question, why bother taking post flop lines at all? It is much more practical, effective and easier mentally to shove or fold your entire range. You put the maximum pressure on your opponents and you avoid so many headaches about how to proceed when you flop something strong, but not unbeatable.

All of this is assuming your opponents have an understanding on how to play in satellites and ICM. If you have solid reads on your opponents to the effect of they will fold to min raises a lot, or fold to flop continuation bets a lot, or never 3-bet without Aces, then you can adjust accordingly. In my early career as a satellite grinder I effectively just min raised every hand when it was folded around to me and that worked in those games. The more your opponents understand about ICM and especially GTO, the more effective it will be to play shove or fold on the bubble.

Key takeaways:

- When you are covered near the bubble you will be forced to take a lot of passive lines post flop
- When you cover your opponent you should be able to take down a lot of pots post flop with a small bet
- It is much more practical and effective to avoid playing post flop completely near the bubble, unless you have a solid read on your opponent that makes it worthwhile

Chapter 10. other satellite considerations

Live Satellite Considerations

All the advice so far has covered both online and live poker in equal measure, but it is fair to assume that the majority of times you will use the advice will be in online satellites, because they are far more ubiquitous than live satellites. You can almost always find generous live super satellites guaranteeing multiple seats to a Main Event the night before it starts, as well as on each Day 1 for the following Day 1, and in some cases there are turbo structure satellites taking place early the same day as the Main Event itself.

These are great events to play if you have already qualified online for the Main Event or were planning on buying in directly anyway, because you can essentially play for the value of the seat and they usually cost less than the traditional side events at the same festival. This is where you will find all the local regulars of the main casino in town trying to get into the Main Event on the cheap. You can safely assume that the general player population in this event will have a poorer understanding of ICM than in an online satellite, but be prepared to change your assumption because the event will also attract plenty of travelling players who have come for the Main Event and have nothing better to do.

Even more so than online, the main adjustment you make should be to spend a lot of time observing the players at your table and gathering information to work out how well they understand ICM and basic satellite strategy. In online poker you might be playing multiple tables and the players have chat turned off. Even when they don't it is disabled during all-ins. But live it's very different. The players in a live satellite will be giving away plenty of reliable indicators of their competence in these games. Listen to their bad beat stories and maybe even ask them questions about satellites to get an idea what they are like. If you are playing a tight aggressive strategy you should have plenty of time between hands to listen in.

This advice goes double when you get close to the bubble and everybody is talking about how close they are to locking up a seat. Look out for players

who are observing how many players are left, or pointing out that somebody on the next table is all-in or very short, or players pointing out they just folded Jacks or suggesting a 'saver' deal where everyone gets a slightly smaller monetary amount to ensure another player cashes. These are all signs that they have a reasonable understanding of ICM and if you do need to find a spot to push your chips in the middle, doing it when it's their Big Blind would be a good option. Likewise, listen up in the rare instances when you can pay attention to the action and chatter on a nearby table, as the players there will also be giving away hints at whether somebody is likely to bust quite soon.

One final word of caution would be that live satellite bubbles often last a long time and require more patience than online satellites, because the action is much slower than online and you do not have the distraction of other tournaments you are playing. They are quite fun, however, and there is often a nice sense of camaraderie when you all lock up a seat, which carries over to the Main Event if you end up sharing a table with the some of the same players again.

What Makes a Good Package?

If you are playing a satellite to a live event you will largely know already what you are looking for. It might be a 'bucket list' event like the WSOP Main Event, you may have identified a potentially soft tournament with a big buy-in or perhaps you just want to visit the country the event is in.

If you don't have any of those criteria in mind, then at least aim for nice venues at good times of the year, so you get a great experience and holiday even if you bust on Day 1. There is little worse than busting early and being stuck somewhere you would normally never want to go (top tip, don't play satellites to events in Rozvadov). Right now the smaller poker operators like MPN and Unibet are going to stunning locations like Copenhagen and Bucharest, which is a lot better than being stuck in a Travelodge in Nottingham eating crappy food to save on expenses. Make sure that the package has enough money for hotel, flight and expenses. If the operator only provides your hotel and flights, it is worth doing some homework on holiday comparison sites to see if they are overestimating the value of their travel

expenses. This is sadly where some operators are seizing an opportunity to make a small profit, by overestimating the costs of hotel and travel in a town you would never normally pay premium rates for.

One final thing to be aware of is that a lot of operators now offer 'seat only' satellites. They realised they could get three or four more players per event if they instead just offered seats and expected the players to pay for their own travel costs. This is only worth it for you if you are quite local and can save on expenses, or you were planning on playing the event anyway.

Playing Satellites Purely for the T$

The best advice I have ever received as a poker player was to play in satellites and that is in large part because I was able to play the satellites and then take the money instead of the seat. In some cases I was able to directly unregister after winning and take the cash. In the case of live poker satellites I would win my first one, after which every package I won was credited to me as cash instead. Likewise when I was at a live tournament I was already scheduled to play (in many cases after winning a satellite online) I would play in the live satellite before the event and take the seat as cash if I won.

This was a particularly viable option back when I started grinding satellites now and it still is to some extent, but not as much and it is always subject to change. The poker room or live operator is always looking at their ecosystem and making adjustments accordingly. If you are looking at making satellites your regular grinding game then you need to be aware of what your chosen poker room's current policy is with regards to satellite winners and multiple satellite winners, and be prepared to adjust accordingly.

The first thing to look out for is which satellites are 'must play' satellites. These are events where you are automatically entered to the target event and cannot unregister. Obviously these tournaments are not the sort of event you should be grinding if you have no intention of playing the target event. Most of the time these are satellites for live events that force you to play the target event, because often a live event is a massive overhead for an online poker operator. Operators rarely, if ever, make a direct profit from satellites and usually have them as a marketing loss leader, and as a result they want to ensure satellite grinders do not unregister at the last minute leaving them

paying a hefty overlay. 'Must play' satellites tend to be much better value in and of themselves. Not only do they usually feature a generous guarantee, they also tend to have fewer solid regulars in them, precisely because those regs usually want to take the money instead, so the field is usually comprised of enthusiastic amateur players wanting to win a ticket to a 'major'.

Once you have identified which satellites are 'must play', the next thing to do is find out what the operator's policy is on repeat winners. Until recently the answer to this question was universally that somebody who wins a second 'must play' satellite simply would be credited the cash value of the second package, however we bring this up because that has changed at the time of writing, and the biggest online poker operator, PokerStars, have made it impossible for people who have won a live package to register for second satellite for it, because they believe this will get more recreational players in their events and less satellite regulars hogging the seats. Every other operator at the time of writing still credits you the cash value. Assuming that is the case where you are playing, this still makes grinding 'must play' satellites an enticing option for a satellite grinder, as long as you also would like to have a punt and play in the destination event itself. Once you have locked up the first seat then these live satellites will probably be the softest way you can play for cash at the higher online buy-in levels and there is often an overlay on the guarantees.

Some operators allow you to unregister from the target event and take Tournament Dollars (T$) instead. T$ are essentially just regular cash but you cannot withdraw them, they must be used to play in another tournament on the site. The operator does this to ensure that your money remains in their ecosystem longer. You can usually unregister from a target event and take T$ when you win a satellite to an online event. From the operator's point of view they don't care if you use your newly won $200 in T$ for the Sunday Major the satellite was for, or for four $50 MTTs instead. Once you staked your T$ in another tournament any money you win is actual cash which can be withdrawn as you please.

If you like the site and plan on grinding a lot there anyway, T$ is as good as regular money and completely worth winning instead of regular money. Some operators also allow you to exchange T$ with another player for

regular cash. For example you may sell T$100 for $98 to your friend. Likewise there are some online poker operators who will not give you cash for a live poker seat won but will allow you to transfer the package to somebody else. For the most part the operator will have an in-house transfer system which should protect you. If it doesn't only exchange T$ or packages with a player you trust.

One final note on T$ satellites, specifically for online tournaments. If you are playing them exclusively for the purpose of taking the T$ afterwards make sure the satellite will finish a long time before the destination event starts. Most online operators host their biggest super satellites at a time where they will end after the target event has started and as such will automatically late register you for the target event (these are often called 'last chance' satellites). You will be forced to play if you win your seat. These are usually the best value of all the satellites for that event because they will guarantee the most seats, all the good regulars will have already started playing the target event and the field will be full of plucky amateurs wanting a final shot at a bigger game - but that is all moot if you have no intention of playing the target tournament itself.

Another variant of T$ are token satellites. These days most poker operators have streamlined their tournament buy-in levels, for example they may have $1.10, $2.20, $5.50, $11, $22, $55, $109, $215 and $530 as their standard entry fees, which covers a wide range of games and player types. As such rather than hosting specific satellites to 'must play' events they instead host robust satellites where you win a 'token' to the next level. A $22 buy-in satellite might win you a $109 token which you can use in a $109 satellite to win a $530 token, or a regular $109 MTT, or a $109 live poker satellite to a 'must play' event or even just a $109 SNG. This is a hybrid of the T$ system and the 'must play' system. It forces you to play in an event of the level you have won a ticket for but it gives you a much greater degree of flexibility about where you 'take a shot' at a bigger game. This is obviously not a viable system for the satellite grinder who purely wants to take the cash every time but perfectly fine if you are looking to take shots at bigger games with your satellite wins. Be warned, some operators have expiration dates on the tokens you win because they want them to be reintroduced to their ecosystem and do not want grinders to hoard them. It's not uncommon for tokens to have less

than a week before they expire after being won.

There is a broader question about which system is best in general for a poker room's ecosystem? Would that be satellites where you can unregister and take the cash, satellites where you win a flexible token to a larger event or 'must play' satellites? For somebody like myself, the T$ satellites are best but I am not playing the satellite for the intended purpose. Clearly the 'must play' satellites where you cannot win multiple tickets are the healthiest for a poker ecosystem because they ensure everybody goes to the target event and the satellite is not full of tough regulars, so recreational players have a chance.

The fact that operators constantly have to adapt to stop regulars exploiting their system does not mean satellite grinders harm the ecosystem of a poker room, far from it. Satellite regulars provide liquidity for the satellites and ensure they run in the first place. PokerStars changed this too late when they realised their satellites to live events were becoming reg-fests. The problem was they pulled the plaster off too fast by making them 'must play' overnight and a lot of the satellites just didn't run. You can run a satellite that needs 20 runners to start and you would get 25 the first night and two people would win a package but couldn't play the next night, then the next night 23 would start and two would win a package, then eventually the satellite doesn't run and you only qualify six people for the event. If you let regs play and you ensure that satellite runs every night, you make more in rake and qualify more even if they take a disproportionate number of seats. Let's say 10 regs of a field of 25 take one seat a night, that means they are still at least qualifying one rec a night. PokerStars took a 'big picture' stance too soon and it hurt their liquidity.

This reminds me of how I paid my way through college by organising social events like discos and concerts. We figured out that we could sell a lot of tickets early at a discount. We would sell £10 tickets a week in advance for £8. Then one day we asked why we were doing this when we could sell them all at the full price, so we tried it with a concert where instead we attempted to sell everything on the night. Almost nobody showed up, it was a disaster. What we realised was that it was vital to have a few hundred people telling people they were going to this event a few weeks before, at a discounted

ticket price. It's the same in live poker events. If two people qualify for the Irish Open in a small town like Sligo, those two people are walking around the town getting other people excited about the event. That's why the Irish Open flopped in 2015, the organisers didn't run live satellites because they were expensive because they missed guarantees, but it's actually vital to have those early bums on seats so that other people follow on.

No matter what format of poker you play, it always helps to have an understanding of the liquidity issues of that format, if for no other reason than you do not want the rug pulled from under your feet one day. You don't want your bread and butter format removed, leaving you to learn a new format from scratch out of necessity. This is perhaps more important in a format like satellites than most other formats. Although super satellites are not going anywhere and likely will continue to prove popular for serious and recreational players alike, remember that they are designed to create liquidity for a larger event. When they do not do that, operators will change the way they offer them. If you are not also looking regularly at what the satellite offerings are at every room available to you, you are burning money. Game selection is particularly important in super satellites. There is no need to be loyal to one room, especially because the formats you like will get taken away if its hurting the ecosystem. This is not something to get angry about as a player, a satellite grinder more than most must recognise that they are gaming a system when they make money from these tournaments without playing the target events.

Bankroll Management

How you approach bankroll management in super satellites is entirely dependant on whether you are a professional or recreational player.

The whole point of a satellite is they allow you to play in a bigger tournament for the fraction of the price. Chris Moneymaker won an $86 satellite into the WSOP Main Event which he parlayed into over $2 million, the World Championship and global fame. Since then a slew of budding poker players have entered satellites trying to emulate him and this is what separates poker from other major competition - on their day amateurs can take a seat in the biggest games, and win.

However, most professional players do not understand bankroll management when they approach satellites. If they stuck too hard and fast to bankroll management rules, nobody would play satellites, because winning a satellite forces you to play in an event you are not bankrolled for. Take the WSOP Main Event, it's not conservative to say you need 200 buy-ins for a tournament bankroll and maybe for the Main Event it's 1,000 buy-ins. That's at least $2 million and I guarantee you most of the players in the Main Event do not have a $2 million bankroll. So it is a form of shot taking. The whole idea of bankroll is if you lose it, you lose your ability to keep playing. There is a common fallacy in poker that if you win a Main Event seat worth $10,000 for $500, you are only effectively playing a $500 tournament because that is all you originally risked. The fact that the $10,000 tournament you are in is the result of a satellite doesn't change anything, that's still $10,000 of your net worth.

Another variant of this is professional poker players saying "if you win a satellite, you don't have to sell action" (selling shares in your tournament to reduce variance). This is also a fallacy. If you are a professional poker player who wins a satellite, you should be doing as much as possible to spread your risk. This means selling action to other players and/or swapping action with other players in the tournament. Not only does this reduce your risk it also makes satellites a profitable option in and of themselves when you otherwise could not simply not play the target event and take the cash instead. If you win a $10,000 Main Event seat for $500 then collect $4,000 of investment from backers, you have essentially guaranteed $3,500 of profit from your $500 satellite skills and you have a shot at a much bigger prize in the Main Event.

My good friend Jack Sinclair made the $10,000 World Series of Poker Main Event final table in 2017. Everyone had locked up $1 million for the guaranteed 9th place and he decided to sell a big chunk of himself based on his remaining equity in the tournament. A lot of amateurs and professionals alike would scoff at that, pointing out that he was freerolling at the finale with seven figures already locked up. Jack, however, had a very professional mindset and decided that rather than freerolling in a big event, he was now playing a *different* tournament that was outside his bankroll, just as you do following a satellite win (and conceptually he is probably right, the final table

of the Main Event really does look and feel like a completely different tournament to the one everyone entered at the start). It really isn't freerolling, that was genuine equity he had there and he was right to take it as seriously as he would his net worth. He came 8th, which was the position he arrived at the final table in, but went home with more than the advertised payout because he was canny with how he managed his equity.

If you are not selling action then at least understand that you are taking a shot outside of your bankroll. If you make $100,000 in a year and take one shot at a $10,000 event each year which you won in a satellite, there is no risk of ruin because you only take that shot once. If you are regularly winning seats outside of your bankroll then that starts to become a huge percentage of your net worth on the line if you are not selling action. At the very least, create a budget separate to your regular bankroll just for satellites, so if the worst happens you still have a regular bankroll.

The best reason to play satellites is if that they are profitable. Some satellites are just too good to pass up: for example if they are one off mega satellites for events like the WSOP or WCOOP Main Event where a lot of amateurs will be playing, or if there is a likely overlay. Another way I see this fallacy pop up is people asking me "How much would you spend on satellites?" for an event. That question doesn't compute for me, it's just a type of tournament with a prize, I would happily do 40 buy-ins if I thought it was profitable, if I run terribly and spend more on the satellites than the target event buy-in, so be it.

Recreational players should never worry about a bankroll. They have a budget, not a bankroll. They are not relying on a bankroll to pay the bills and they won't lose their livelihood if they lose a certain amount of money. Recreational players should have the complete opposite perspective to a professional when it comes to bankroll management. For them it's almost as much about the experience as it is taking a shot at a big prize pool. Once they are happy to commit a certain amount of money towards winning a seat they should then feel free to play for 100% of themselves without selling any action if they win one. It's stupid for a pro who has spent $500 satelliting into a $10,000 tournament to think they are playing a $500 tournament, but for a recreational player that's exactly what they should be doing, because it's

$500 out of a budget, not a bankroll. If you are a serious, but recreational, player who wants to get better at satellites for the experience of playing in a bigger event, set yourself a budget based on how much you are prepared to lose without it hurting, then play for 100% of yourself. Unless, that is, you are wanting to build a bankroll as a satellite grinder.

If you are fortunate enough to be playing satellites where you can unregister from the destination event and take money or T$ instead then this is a different animal entirely. Here you can observe standard bankroll management rules, tailored towards the satellites. Satellites in general are much lower variance than MTTs so the standard 100-200 buy-ins rule for MTTs can be greatly reduced. There isn't a standard all-encompassing rule here because it greatly depends on the number of players needed to make up one seat. There are plenty of satellites where one-in-five get a seat and the bankroll rules for them should be a lot looser than satellites where one-in-ten get a seat. Generally, if you are playing a variety of satellites with different payout structures, 45-50 buy-ins seems a sensible baseline bankroll. My biggest ever satellite downswing was 30 buy-ins.

Useful HUD Stats

For those of you who use PokerTracker or Hold'em Manager there are a number of Heads-Up Display (HUD) stats that are particularly useful for super satellites. As a general rule your own reads should overrule your HUD stats and your HUD should not be an excuse to disregard taking notes your opponents. Because in general you play less hands and the hands take longer because of stalling, you have more time to spend developing reads on the other players, so don't waste it. Obviously when you are mass multi tabling it is a trade off you are probably going to have to make.

If you do not use a HUD playing tournaments, skip ahead to the next chapter. You won't understand the following terminology anyway.

First of all, your HUD is a good early way to profile whether a player is an amateur or a regular. The easiest way to spot this is if the difference between their VPIP and PFR is wide. A player who is 23/21 might be quite loose and a player who is 12/10 might be quite tight, but they are still clearly regulars because when they choose to play a hand, they are raising with it.

However, if a player is 23/8 or 12/4, either way that is the sign of a fishy player who doesn't understand the value of aggression. This is particularly important in a satellite because the good regulars know that fold equity trumps all other forms of equity. If somebody is limping, especially at the end stages, they clearly are not educated in satellite strategy.

A less obvious indicator of how good a player is the number of hands you have in your database on them. If you have 20 hands on one player and 1,000 on another, the player with 20 hands is more likely to be a recreational player and the player with 1,000 more likely to be a regular. Satellites tend to attract weekend warriors taking a punt, therefore you won't have a massive sample of hands on them. This is not an infallible metric. You get tough regulars playing new accounts and you get whales who play every night, but as a generalisation it works.

When a player has unbalanced stats, that will manifest over a smaller sampler anyway. If a player opens 10 hands in a row you can easily conclude they are loose, if they fold 10 hands in a row you can at least assume they are not a maniac. The further a player diverges from the average, the smaller sample you need to start drawing conclusions.

Once you have identified players as weak, the question is what kind of weak are they? Are they overly aggressive, are they loose passive, or do they fold too easily on the flop? You need a firm idea of how to exploit them. Will they be making folding mistakes or calling mistakes? Profile the players before you get into pots with them so you can develop a plan based on where they are unbalanced. Here are a few key stats that should inform your gameplan. They are all for the early/deep stages of a satellite where multi street stats play a role, in the late stages where the majority of the decisions will be shoves or calling shoves, it mostly just comes down to what you think their shoving and calling ranges are.

Fold to 3-bet after raising: If this is high (65%+) you can take the more aggressive option with your hands and 3-bet more. If it is low you still can potentially 3-bet a lot more if they have post flop stats that are unbalanced. If they fold a lot to a C-bet, or don't check raise much, or fold a lot on the turn, for example.

4-bet: If they 4-bet a lot, flat your strong hands more to avoid flip type situations. Especially so if their post flop stats are exploitable.

C-bet: A percentage around 60% is tough to exploit because it is balanced, there will be a healthy mix of bluffs and value bets. On the other hand, 100% is easy to exploit. A lot of players do this because an old poker book told them too and they don't know what to do on turn (if their turn bet percentage drops to say 30%, you know they are only continuing with their made hands, which makes floating the flop to bet the turn when checked profitable).

3-bet: This determines how wide we open. When all the players yet to act behind you have a low 3-bet percentage we can comfortably open a much wider range. The best outcome is we take the blinds, the second best outcome is somebody calls (especially the blinds because their range is wider) and we can potentially take down a bigger pot on another street, the only really bad outcome is we get 3-bet and have to fold. The only exception is when a player has a high 3-bet % but also has a very high fold to 4-bet %, then we can potentially open wide with the intention of 4-betting.

Before you get too married to this advice and your HUD stats in general, please note that the above examples are really for early in the satellite and when we have a reliable sample. Don't go looking to 4-bet wide as often as possible because you are just going to get in a lot of high variance situations. At best use your HUD to identify small exploits you can make, like taking down blinds uncontested, not for triple barrel bluffs or spots where you get all-in before the flop with the bottom of your range.

Chapter 11. Unusual satellite formats

We have given you the foundational strategy to beat super satellites, which are by far the most common variety of satellite you will find both live and online. There are, however, a wide range of different satellite formats available in the pokersphere, for most of which the same strategy applies, bar a few adjustments you need to be aware of. Here we are going to highlight the most common variants and the tweaks you should make to your game.

Winner Takes All satellites

Prior to the poker boom these were perhaps the most common form of satellite and they are still common both live and online. Quite simply these are tournaments to win a ticket to a bigger event, but there is only one seat on offer, rather than multiple prizes of equal value. These can be comparatively low stakes Multi Table Tournaments or quite often they are Single Table Tournaments with one winner at the end of them. The latter are often are found in Las Vegas during the World Series of Poker.

You may recall at the start of this book that we highlighted these as something we would not be covering in this book and by now you will understand why. Everything you have learned about End Game and ICM is completely irrelevant in Winner Takes All (WTA) satellites because the goal in them is to accumulate all the chips, not survive until a certain number of opponents have been eliminated. In fact ChipEV is even more important in WTA satellites than it is in regular multi table tournaments because there are no pay jumps either. Just as loose calls are the hallmark of a weak super satellite player, nitty folds are often the sign of a poor WTA Satellite regular. In this respect the best strategy advice you can follow is closer to cash game strategy than anything else.

With only one prize on offer, the variance in these events is also going to be incredibly high, especially compared to super satellites. So another adjustment you will have to make will be regarding your bankroll management considerations. Don't assume that because you are bankrolled to play $22 super satellites that you can automatically jump into $22 WTA satellites, because the frequency of winning will drop so considerably you

will be at much greater risk of ruin.

As you can tell, WTA satellite strategy is beyond the scope of this book and we are highlighting it here just so you are aware enough of the differences so that you are able to throw out the rulebook when you do play them.

Rebuy/Re-Entry Satellites

Within reason, the play in a re-entry satellites will be exactly the same as in a regular freezeout satellite. Players who are in for one bullet treat their game like it is a freezeout anyway and for the most part so do the players prepared to buy-in again. You won't see many recreational players re-enter a satellite, because with every extra bullet you march closer to it having been more prudent to buy into the destination event directly anyway, which should not matter, but it does to some players. Ironically the one category of player who may re-enter more than usual is the seasoned satellite regular who just plays for the cash value of the package. This is because for that player, he or she treats it like a regular SNG type of game they grind anyway, so it makes no difference whether they re-enter this one or wait for the next one to start. With that observation out of the way, for the most part you can treat re-entry satellites exactly like freezeout satellites.

Rebuy satellites, especially low stakes ones, do come with a warning, and that is that they tend to be significantly looser at the start. The largely tight play you might expect from the regulars may turn upside down on its head in these events, but the adjustments really should be the same as if you just happen to be at a loose table where people are not playing perfectly. This is another reason why it is prudent both to play tight at the start of a satellite and, while you are doing that, start getting reads on your opponents to determine how well they understand ICM and basic satellite strategy.

For the sake of clarity a re-entry tournament tends to be one where you can buy back in when you are eliminated but you will be placed at a new table. There also tends to be a limit of one or two re-entries maximum. A rebuy tournament is one where if you do buy back in you are at the same table and you also often have the option of buying in twice at once for double the starting stack. This can be an important distinction. There is a tactic pro

players sometimes use in rebuys which is to splash around and play much looser than normal, in the hopes of encouraging other weaker players at the table to do likewise. The idea is that this increases the pro's edge (they are more likely to play the looser game better than the enthusiastic amateur) and makes it more likely they will build a stack, which they will then also play better than amateurs. Also, even if it goes pear-shaped and the pro ends up having to rebuy a few times, all is not lost, because they will find themselves at a table where a lot of weaker players are chipped up and primed to spew after they rebought. This is sometimes referred to half-jokingly among pros as "buying chips for the table". However, while these tactics may be advisable or at least defensible in a normal rebuy tournament given the top heavy nature of the payout structure, we do not recommend them in a satellite due to the flat payout structure meaning our payout is capped. The only reason we bring this ill-advised strategy up here is so you will know not to employ it if someone recommends it as "good strategy in a rebuy".

Variable Rebuy Satellites

One increasingly popular satellite format both live and online are rebuy formats where you can rebuy/add-on either for a different buy-in amount than the initial entry fee, or you get different chip amounts for adding on.

Very popular at the moment are 'Centroll' satellites. These are events that cost a small amount to buy in to but subsequent rebuys cost more. They also include add-ons at the end of the rebuy period which gives you an amount of chips that is significantly higher than a starting stack.

For example, at the time of writing partypoker host a lot of Centroll satellites that are $0.50 to enter and you get 2,000 chips. If you bust out you can re-enter for $2 for another 2,000 chips. At the end of the re-entry period you can add-on 10,000 chips for another $2. Those 10,000 chips tend to be significantly higher than the average stack at the time and often would take most players way above the chip leader if he or she did not also add-on. So even if you have played really well and chipped up, you would be at a massive disadvantage if you did not add-on. So often despite the initial buy-in being $0.50, most regulars will end up spending $2.50 or $4.50.

It might seem the best way to play these is to just buy the initial 'cheap'

chips and treat it like a freezeout trying to spin that up to a seat, but some basic math proves otherwise. If we buy 2,000 chips for $0.50, we have paid $0.25 for every 1,000 chips. A player who takes the initial 2,000 chips for $0.50 but adds on another 10,000 for another $2 has bought 12,000 chips for $2.50, making the average cost of 1,000 chips just under $0.21. Conversely, the player who buys the initial 2,000 chips for $0.50 but has to re-enter paying $2 for 2,000 chips before adding on another 10,000 for another $2 has bought 14,000 chips for $4.50, making the average cost of 1,000 chips just over $0.32. This only gets worse with each additional rebuy, so the optimal strategy is pretty clearcut: take the initial chips and try to get to the add-on, and then take the add-on. Under no circumstances should you re-enter: just accept that you busted this centroll and wait for the next one.

Centrolls may sound like a scam of sorts, designed to trick you into rebuying for more than the initial buy-in, but that is only when you do not understand the format and how to approach it. It is a 'foot in the door' technique by the poker operator to get players involved in the game and make them want to re-enter for a bigger amount when they bust. The appeal of Centroll satellites is that they attract weaker players who would not otherwise have bought in for $2.50 or $4.50 but were happy to have a punt at $0.50. So this means that the field is even softer than the standard satellite. Your profitability in these is further boosted by understanding the optimal buy-in strategy. Any time another player makes a mistake in this area, your bottom line benefits. Imagine there was a tournament where it was possible for you to buy your chips at a cheaper rate than other players. Sounds great, right? Well, that's exactly what this format is, it's just in disguise.

'Splash' satellites are essentially the same as Centroll tournaments but the initial entry and re-entry amount are the same, rather than having that 'foot-in-the-door' cheaper initial buy-in. Furthermore, the add-on at the end of the rebuy period also will give you more chips than the initial buy-in, often considerably more. PokerStars currently have Splash satellites for the Sunday Million that cost $2 for every buy-in/rebuy and you get 3,000 chips, but the $2 add-on at the end of the rebuy period gets you 30,000 chips. This changes optimal buy-in strategy considerably. Now you simply have to keep rebuying no matter what until the add-on. The ideal is still one buy-in, one add-on (33,000 chips for $4, or just over $0.12 per 1,000 chips). If you have to do

two buy-ins and one add-on, that's 36,000 for $6 (almost $0.17 per 1,000 chips). The cost per 1,000 chips continues to increase with every additional rebuy, which illustrates that optimal strategy is to gamble as little as possible before the add-on simply focusing on getting to the add-on as cheaply as possible. But the buy-in will never be as costly as if you drop out before the add-on, where the cost irrespective of the number of rebuys is almost $0.67 per 1,000 chips.

Even if you were to purchase ninety nine rebuys and an add-on, that would be 327,000 chips for $200, just over $0.61 per 1,000 chips, which is still cheaper than dropping out. This is something almost nobody understood in the early days of these satellites (when they were called 3x's). The question I was asked the most often about them was "How many rebuys would you do before you drop out?" and my answer of "I never drop out. In fact, dropping out is the single biggest mistake you can make" was so surprising to most people that they simply didn't believe me. I get all misty-eyed and nostalgic when I think of those days when typically 100 people would enter an EPT satellite, 90 of whom would drop out before the add-on having done an average of four buy-ins each, leaving the other ten survivors to carve up 470 buy-ins in equity (averaging over at 47 each), having done on average 11 of those buy-ins each themselves.

Another less common mistake you'll see in these is players who are taking a punt at the initial buy-in will not bother to add-on for the additional, larger, top-up. If they survive that far they will generally have spun up a lot more than the 3,000 starting stack, and that plus the turbo gambley nature of these distracts them from the rather glaring error they make declining to buy ten starting stacks for the price of one at add-on. This also means that at the end of the rebuy period those that do will have much greater odds of cashing and the players who do not will be struggling to survive much sooner.

The adjustments to make in variable rebuy satellites are first and foremost bankroll adjustments. Don't look at the initial buy-in as the absolute buy-in, look at a maximum cost of rebuying and adding on and treat the tournament like that is what you will be spending. I would often play $10 Splash satellites for EPT seats where on average you have to buy-in for $105. If you treat those formats like a $10 MTT you are going to get frustrated every time

you bust a stack, yet that is what most casual and serious players do. If you say to a recreational player you can buy-in for $10, you get 5,000 chips and the prize is $10,000, they will take the small amount of chips and not add-on. But if you went to the same player and said it was $105 to enter with a 55,000 starting stack but if you pay half the price we'll give you 5,000 chips, they would never take that. When it's framed as an add-on it's an obvious cognitive blindspot.

It's worth repeating that by far the biggest mistake you can make in variable rebuy satellites is dropping out before the add-on period. Often the field is already close to the money by the add-on period and when you factor a lot of players don't even add-on, you can easily get to an enviable position near the payouts without much effort. For this reason, late regging just before the add-on period is insanely profitable.

You should also be fluid with your COC/ACS calculations because they cannot be determined by the starting stacks, especially when an add-on can give it such a dramatic increase. If you calculate your COC/ACS based on the smaller starting stacks then after the add-on period you could be putting the brakes on too soon. It is much better to calculate your COC/ACS based on an assumption that everyone adds on, then you can always be pleasantly surprised when you get way above the average when some players choose not to.

Phase Satellites

One of the newer and increasingly more popular satellites are 'Phase' satellites or 'Day 1' satellites. This is where for a lower buy-in and smaller starting stack you can begin building a stack for a larger event. For example, at Dusk Till Dawn in Nottingham they frequently have events where the official Main Event is something like £5,000 with a 100,000 starting stack, but you can play an event prior to that for £500 with a 10,000 starting stack and, if you survive the day, you take whatever stack you accumulated to the official Main Event. This means that you can potentially start the official tournament with less than the official starting stack, or indeed way more. These early Phase events can often take place away from the main festival. To use the Dusk Till Dawn example again, their Day 1s have taken place

online and live in different card rooms before.

The interesting thing about these events is that they seem like a hybrid of a satellite and a regular multi table tournament, but when you boil them down they are just a regular multi table tournament. Strategically they should be treated like a regular MTT because in both the Phase Day and the official tournament the aim of the game is to build the biggest stack possible to give you a shot at the final table. So making a tight fold at the end of the Phase Day will technically get you to the official event, but you have passed up a shot at building a big stack. Therefore, the 'correct' strategy should always be one that gives you a better chance at winning the entire tournament, even if that means risking elimination before the official event begins.

However, there are still some important satellite considerations. First and foremost, if you are a recreational player and have built a respectable stack near the end of the Phase and it is your dream to play in the official event, perhaps a cost benefit analysis would correctly lead you to make tight folds near the end of the day. The dream of satellites is that they get you to play in these major events for a fraction of the cost and if the sheer fact of being there is more important than anything else, perhaps you can slow down near the end of the day.

The second consideration is that while it is technically correct to continue trying to build your stack right up until the end of the day, not everyone at your table will realise this. There will be a pseudo bubble taking place in the final few levels of the Phase that can be exploited (this also happens towards the end of the day in regular live multi table tournaments where recreationals in particular can get emotionally invested in making the next day and going to bed with the nice feeling that they are still alive in the tournament, causing them to play tighter than is optimal). So an adjustment that can be made here is being more aggressive, especially against the players with a respectable stack for the official Main Event. While this is a relatively new poker format this is not a new phenomenon. The World Series of Poker Main Event, for example, often sees the field tighten up at the end of the Day 1 flights because it is a badge of honour for many to making it to Day 2, even though that does not guarantee any money. These are essentially pseudo bubbles, or emotional bubbles.

Conversely, some players will play the latter stages more aggressively than normal because they don't want the hassle of coming back to a short stack. This can either be for emotional reasons, or sound financial ones if there's a time and monetary cost to playing the next day. For example, if you live in London and you find yourself very short at the end of an online Phase 1 to a live event in Rozvadov, it will be monetarily correct to take minus ChipEv spots since busting before the end will save the cost and effort of travelling.

You'll see more Day 2 'no shows' in these tournaments than in any other format, as players who get through the Phase 1 with a short stack decide it's not worth their while to actually travel for the event, or worse, they may have entered the online phase without realising it involved travel.

So the correct strategy in Phase tournaments is to treat them like regular MTTs, but be aware that towards the end of them many of the players will be treating them like a super satellite, so you can adjust accordingly by identifying the players wanting only to survive and exploiting them, while other players will be gambling it up not wanting to come back short. A big part of your edge in these events is working out which players at your table are tightening up, and which ones are gambling it up. Pay close attention to the table talk for clues: this is not a time to be playing on your phone or listening to music!

Freeroll Satellites

There are times when an online poker room offers tickets to a larger event as part of a freeroll promotion, usually for depositing or achieving a loyalty points target. This is not to be confused with a loyalty points satellite, which actually should be treated like a real money satellite, albeit probably looser.

Freeroll satellites are going to be considerably looser in the early stages than any other satellite you'll ever play because without any tangible money invested, few people in the field will really care. Likewise you will be stuck against a lot of dead stacks belonging to people who never bothered to show up or didn't realise they had been entered automatically. The general adjustment here if you are serious about winning a ticket is to play even tighter, assuming the table is playing wildly.

The other noticeable difference with freeroll satellites is that the prizes are static regardless of how many players enter. So for example, ten seats will be on offer regardless of whether ten, 1,000 or 10,000 players enter. This is important to factor in with your COC calculations and determining when the bubble is or the stack you need to attain before you can slow down. In this case it is probably better to wait until the late registration period is over, look at the number of chips in play then dividing them by the number of prizes. So if 1,000 people enter, start with 1,000 chips and 10 seats are on offer, that would be (1,000 x 1,000)/10 = 100,000. Likewise, if the same tournament attracts 10,000 players then it would be (10,000 x 1,000)/10 = 1,000,000 for your average stack at the bubble.

This is an important consideration because more people entering a super satellite usually does not dramatically change the average stack or time it takes to finish, but that is not the case when the prizes are static like in a freeroll.

Double or Nothing (DoN) SNGs

Strictly speaking these are not satellites but they play so similarly to them strategically they deserve a mention here. DoNs are Single Table Tournaments with six or ten players which will see half the field cash for double their buy-in (minus rake). The SNG ends when half the field is eliminated. They are similar to satellites precisely because you are competing for prizes of equal value, coming 1st is no different to coming 5th in a 10 person DoN, so the strategy is the same. The ICM considerations are exactly the same too and what you have learned in this book will prepare you well for them.

One notable difference is that you get to the end game scenario basically right away in these tournaments. There is no need to build a stack first because often the players who cash do so with close to what they started with and players who do double up early will then play much tighter. You can safely assume that a DoN will play very tight, apart from the occasional gambler who busts early, and that the regulars understand ICM. There have also been concerns that these games are some of the ones more susceptible to collusion, which is why some operators have removed them, so be aware of that.

If nothing else they do provide an extra avenue for your newly acquired ICM skills and a great way to practice a lot of what you have learned if no good satellites are running and/or you are short on time.

Chapter 12. Mental game

There is nothing more brutal in poker than a satellite bubble.

Over the years I have had to do a lot of mental health counselling with students who play a lot of satellites, because the all-or-nothing nature of them is hard to take from a mental game perspective. All tournament bubbles hurt, but the fact all the prizes are of equal value in satellites makes bubbling them so much more painful. Bubbling a regular tournament hurts too, but you were never playing for the mincash, so you can easily and correctly justify 'going out swinging' to yourself because in the long term the move that caused your elimination may also be the move that another time helps you win the whole tournament. Plus the mincash in a regular tournament is usually only around double your buy-in, whereas in a satellite it is often five, ten or twenty times your entry fee. So it is important to point out in these pages the mental game issues satellites expose, because you will encounter them. Whatever mental game issues you already have in tournaments will be amplified in satellites.

I don't want to go into a deep dive into how to resolve these mental game issues. For that I would point you to *The Mental Game of Poker* by Jared Tendler which I am a big fan of (but to point out an obvious bias where this is concerned, my co-author Barry is also the co-author of that book). I also often point my students to *Thinking Fast & Slow* by Daniel Kahneman which has a large section on cognitive biases that will impact your own mental game issues. However, it is useful right now to point out some of the mental game issues you will encounter in satellites, so you can pre-empt them, recognise them for what they are, seek help to resolve them and also so you know you are not alone as *most* poker players experience these problems in super satellites.

One final point before we get to the specific issues is that 90% of mental game problems like this can be overcome with experience. The more you understand satellite strategy, the easier it is to recognise when you got unlucky or when you made a mistake. Although he has a vested interested in fixing mental game issues, Jared Tendler also says this early in his book, that improving technical knowledge is usually the best way to prevent tilt. So

before you jump to the conclusion that you need a Shrink, spend some time reviewing your hands and maybe practicing all-or-nothing bubbles in Double or Nothing SNGs to solidify your strategy. Beyond that, these are the mental game issues you will encounter in satellites:

Bubble Disappointment

There is only one size of prize in satellites, you don't get more money for finishing with a big stack and therefore it's not worth taking crazy risks. From the start of the tournament you have had your eye on one prize, and one prize only. This makes the end of a satellite a very binary affair, you either won it or you didn't. Not only is it really disappointing to lose in a satellite, it is borderline humiliating when you are one of the last few players to exit without a prize. This goes double in a live satellite when everybody is hugging and high fiving each other as you make the loneliest walk ever out of the card room (there is actually often a great sense of camaraderie in live tournament bubbles, especially in live satellite bubbles, which are emotionally frustrating to not see out to a fulfilling conclusion).

Then you have the fact that satellite bubbles are often long and gruelling. If you have locked up a seat you might be left stalling and folding for several hours until the tournament is over. It can really feel like wasted time when you don't get over the line.

It's not just the lost prize and wasted time that hurts, it's the missed future opportunity. If you are playing a satellite for a major live event like the WSOP, you start to get excited about the event while you are nearing the money bubble of the satellite. My friend and *Chip Race Podcast* co-host David Lappin once foolishly started looking at flights to Punta Cana while he was still in a satellite which ended up really stressing him out when he took a bad beat and was left short stacked. The sense of disappointment can often go beyond the 24 hour period the satellite was played in, all the way to having to watch the live updates for the destination event at home weeks later, lamenting the fact you 'should have been there'.

We are lucky enough that Jared Tendler of the aforementioned *Mental Game of Poker* took some time out to address this particular issue for us:

"You are not going to be able to take away the pain of bubbling a satellite. It really is one of the more extreme situations poker will throw at

you. The best you can hope for is recovery. How can you recover faster from this setback than you would have otherwise? For every hour that this disappointment continues to sting you, you will be missing opportunities to improve as a player and it is more likely the 'emotional hangover' from bubbling will affect how you play in the future.

As Dara has suggested, the best way to overcome satellite bubble disappointment is to develop a better understanding of satellite strategy. That will take away any uncertainty about whether you made the right play when you were eliminated. What I would also suggest is that you write out what I call 'logic statements' and 'strategic reminders' based on the theory in this book. List out the lessons you have not quite internalised yet as well as the areas where you need to improve in satellites. For example, if you play too tight on the bubble, make a note of that, or if you induce too much when you should be open shoving more hands, write that down too. Think of it as a letter to your future self. It's there to remind yourself of the correct play under pressure. It won't take the pain away, but it will start you on the road to recovery sooner."

Fear

Once players have internalised how brutal satellite bubbles are, it creates a secondary problem that they play less than optimally a long way out from the bubble. This usually manifests in the form of folding too much. This is tricky strategically to balance, because most of the advice in satellites revolves around playing less hands, so it becomes easy to justify it to yourself to fold too much. It is true that taking the lower variance line is usually correct, but there are some spots that are too good to pass up and folding too much makes it more likely you blind out and bubble.

Often my students come to me with justifications as to why they folded too much, which I will ask them to back up. In spots where you normally would shove wide I advise them to tighten up if the players behind call too much. My students will therefore claim their opponents call too much, which I ask them to back up by showing me HUD stats or previous hands where that has been shown to be the case. I'd advise you do the same. After the satellite go back into your hand histories and HUD stats and challenge your own assumption that you made a correct fold. Unless it is a much deeper mental game issue, the best remedy will be to get back in the lab and study how you

should have played the hands.

Jared Tendler again:

To begin with, before you get to those big bubble decisions that can really paralyse you, it is likely that you make smaller, less consequential, risk averse decisions earlier on in the tournament. It could be as simple as folding a hand where you got really good odds to see a flop, or betting half pot for value when you should bet 2/3rds pot. It is much easier to spot and correct these smaller decisions where there is less risk than it is to force yourself to be brave in the all-or-nothing spots. By correcting the smaller decisions, you will train yourself better for the bigger ones.

Beyond that, when reviewing your play afterwards and during crucial bubble spots, you have to factor in the risk of not doing something. It may seem incredibly risky to shove into two stacks that cover you on the stone bubble, but the long term cost of inaction can sometimes be even greater, it's just not as painful in the moment. You are also costing yourself important experience which you need to become a better player.

Finally, and especially if the problem is just purely on the bubble itself and not the build up, ask yourself what you are really afraid of? It is always more than just the money itself, and as the bubble in satellites are so harsh often it can be things like not wanting to look stupid or embarrassing yourself. When you know what you fear besides just losing money, it makes it easier in the moment to give yourself a pep talk and push past it.

Boredom

We've already covered this in the Mega Satellites chapter but it is worth repeating. It is true that satellites, when played correctly, involve playing less hands and folding a lot. This leads some players to get bored and inevitably make a reckless play when they have a seat locked up just to entertain themselves as much as anything else.

If you are bored in a satellite, you are doing it wrong. There is so much to be paying attention to by looking at the lobby, who is inside and outside the bubble and profiling which players understand ICM and satellite strategy and which ones do not. If you are at the point where your seat is so locked up the game is really all over, either use the time to take notes on the regulars at the

table, or get out your smartphone and do something else, but don't take your boredom out on your stack.

Showing Off

Another variant of boredom is some players simply cannot help themselves playing for the win when they have a seat locked up. Some players - even good players - simply do not understand satellite strategy and that will hopefully be remedied by the advice in this book. For others it can be a sign of a mental game issue.

Some players simply like being a bully. My friend David Lappin enjoys nothing better than abusing his table on a satellite bubble. You will see players like this often who have a monster stack and could be helping eliminate the final players, but instead are punishing the other players who have a seat locked up. This is a surefire sign that the player cares more about how they are perceived (or how they perceive themselves) than being successful at poker. It may seem a small issue, especially if you have the seat locked up, but an ego is a harmful thing in poker and showing off in a satellite will only reinforce what could be a larger issueJared Tendler is back to address this issue:

"You may have the seat so locked up that you can make these dick moves with impunity and it doesn't really affect you. You may also not think this is a mental game issue at all, if you enjoy it so much. But even if it makes no difference from an EV standpoint, this is still potentially a sign of a mental game issue that needs acknowledging because it will have a damaging effect on other areas of your game.

This is what I refer to as Revenge Tilt, one of seven types of tilt. It is where you put more importance on 'owning' other players than on actually being a profitable player yourself. It is also rooted in a confidence issue. You may feel unbeatable when you are open shoving over players with air knowing they cannot call, but the fact that the impulse to do that is so strong highlights an overarching weakness in your confidence.

Or this could be a strategic issue where you do not believe the downside of this playing style until it is too late and you end up bubbling after a series of hands where another player with similar mental leaks foolishly takes a stand against you and gets the rub of the green.

Wherever the desire to show off comes from, know that it highlights a weakness in your confidence which you need to admit to and explore, otherwise when it does eventually cost you not only will you lose big but your confidence will swing in the other direction."

Unable to Handle a Short Stack

It's a lot of pressure to nurse a short stack which you strategically know should be enough to survive the bubble when the blinds are creeping up on you. In every satellite you will encounter players who cannot help themselves and make a move when they most likely would have won a seat with just a few blinds left. My friend Carlos Welch says his dream is always to make the money of a satellite with just an ante, which is a much better attitude than trying to finish with the biggest stack.

This is, of course, most of the time a strategic issue that will be resolved by reading this book and reviewing your satellite hands. However, some people are not able to tolerate the uncertainty and pressure of having a small but survivable stack on a satellite bubble. Some players would rather force an outcome, any outcome, than do what they know to be strategically correct. They would rather just end the satellite and have a story to tell their friends about how they went out swinging than do the dirty but businesslike work of closing out a satellite. You really need to check your pride at the door in a satellite. There is no glory in it but plenty of money to be won.

One more time, here is Jared Tendler:

"The problem here is not being able to tolerate the tension a satellite bubble presents. If you are not used to satellite bubbles, sitting on your hands when you are used to playing for the win feels wrong. You have been trained to make a move, and when the tension is too intense it feels like a relief to force a result, even if it's a bad result. It's only when you deeply understand satellite strategy like Dara does that you no longer feel the tension, so once again experience and study is the best solution.

If the tension is still becoming too much, ask yourself if you feel tense because you find it hard doing nothing or is it because you do not 100% believe the satellite strategy yet? Either way a good solution is to practice with smaller buy-in satellites to experience these long drawn out bubbles more often. Practicing with Double or Nothings is good from a pure ICM

perspective, but smaller stakes satellites are the better choice if it is the doing nothing aspect that is troubling you. This is because even though the buy-in is smaller, you are investing more time and the bubbles are longer, so you can get used to the teeth pulling tension of an all or nothing bubble."

Unable to Adjust to Regular Tournaments

We mentioned at the outset of this book that there is a perception that 'good satellite players are bad normal MTT regulars', which hopefully we have quashed by now. However, it is worth noting that if the only format you are playing regularly is satellites, then there is a chance that you will play too tight when you play in the target events. Everything will look like a fold, especially near the bubble, and you will play too tight to accumulate chips to make a final table run. Also look out for open shoving too much with 20+ big blind stacks, not defending enough and presuming people will fold as often than they do in satellites.

This is a leak of your study away from the tables more than anything, because if you are devoting an appropriate amount of time to study your play in regular MTT tournaments you should be able to adjust accordingly to other formats. So play more normal MTTs and devote more study time to them if this sounds like you. I'd also suggest you throw some PKO tournaments in there to really jolt yourself out of the satellite mindset, because often they are the complete opposite of satellite strategy, where you should be calling much wider, sometimes even wider than ChipEV.

Key takeaways:

- The best solution to preventing mental game problems in satellites is to improve your technical knowledge of them in your study away from the table
- Satellite bubbles are particularly painful. Get used to this fact, you are not alone
- A lot of mental game issues in satellites stem from a lack of patience when you have a seat almost locked up

Chapter 13. Common satellite spots

We hope by now that we have given you a GTO baseline strategy for satellites which you can adjust based on the players and situations you find yourself in. We also hope that you have the tools you need to review your play away from the table to really develop an understanding of the format. We would like to end now by sharing both some of the most common spots you will find yourself in as well as some of the more unusual situations that come up often enough you should be prepared for them. This is the sort of thing we hope you will skim over now, and revisit again as and when these spots come up.

Equities Against Standard Ranges

Throughout the book we have made an assumption that you have a basic understanding about ranges in poker and how much equity you need against those ranges. We have also assumed you have played around with apps like PokerStove as well as ICM calculators. If you haven't, please do, there are plenty of good free ones available. Having said that it is still useful to remind ourselves of the hands you need against certain shoving ranges.

Do not make the mistake of thinking just because a hand wins more often than it loses against a certain range that this means it is profitable to call in a satellite, far from it. The equity you need to call frequently will be much higher than in the equivalent ChipEV spot and is based on your chip stack, your opponent's chip stack and how close you are to the bubble. There are some situations in satellites where you need better than 90% equity to call profitably on the bubble (almost always when you have a seat currently locked up) meaning that even Aces are a fold preflop.

Against Any Two Cards

The first one is against any two cards. Some players shove every time it is folded to them right on cue, or their stack size or table position makes it highly likely they will. A player with eight big blinds is probably going to

shove most of their range from the Small Blind into the Big Blind if it is folded around to them, for example. Let's first look at pocket pairs:

22	50.33%
33	53.69%
44	57.02%
55	60.32%
66	63.28%
77	66.24%
88	69.14%
99	72.06%
TT	75.01%
JJ	77.47%
QQ	79.93%
KK	82.40%
AA	85.20%

As you can see deuces is barely a favourite against a random hand and beyond that the equity of each pocket pair increases about 3% thereafter. It is only when you get to around pocket eights that you start to become a strong favourite, but if you want equity where you win three quarters of the time you have to look to the broadway pocket pairs. Now let's look at some common unpaired hands you might consider calling with:

K2o	50.51%
9Ts	54.03%
A2o	54.93%
JTo	55.82%
A2s	57.38%
A6o	57.68%
A5o	57.70%
QJo	58.13%
A5s	59.92%
A9o	60.77%
KQo	61.94%
KJs	62.57%
ATo	62.72%
KQs	63.40%
AJo	63.56%
AJs	63.59%
AQo	64.43%
AKo	65.32%
AQs	66.21%
AKs	67.04%

As you can see we have not included every single possible holding. First of all it shouldn't take a book to let you know that calling with 7-2 isn't a good idea. Secondly it is much more useful to learn what the divergence is between two hands than trying to memorise all of them. And we'd also implore you to play around with an equity calculator to do your own research.

The first thing to point out is how much weaker unpaired hands are against random hands than some might expect. While it is common knowledge that AK is a coinflip against most pairs and dominates a lot of likely holdings, against any two cards pocket eights and above perform much

better than Big Slick.

Another common convention is that 'king high beats a random hand' which is true, but barely, and in satellites should not be part of your calling range. K2o is essentially a flip against a random range and calling with it guarantees you will bubble half the time.

Hole cards that work together perform better than those that don't, which should not be a huge surprise. 9Ts for example performs better than K2o because it has so many more ways to win. A5o performs better than A6o which seems counterintuitive but is because you have the ability to make a wheel straight of A-2-3-4-5, whereas the six just makes a poor pair. Likewise hands like KJs beats KQo and AQs beats AKo against a random range for the same reason.

Against a Playable Shoving Range

Now let's look at some hand matchups you are probably more familiar with. Let's assume our opponent is shoving the top end of their range, hands that have strong equity on their own or have the outs to suck out on us if called. We've defined that range as:

    22+
    Ax+
    JTs+
    QTo+
    KTo+
    K9s+

This is the top 27% of hands and either includes raw equity hands like Ax and pairs, or high cards that play well on their own but also can make straights and flushes. Again, it's very context dependent but these are the hands you'd expect players to be shoving from mid position onwards, if play is folded around to them.

22	44.59%
33	47.02%
44	49.41%
55	51.25%
66	53.72%
77	55.69%
88	57.79%
99	59.9%
TT	63.57%
JJ	66.97%
QQ	70.56%
KK	74.64%
AA	86.06%

Almost all the hands go down in value quite considerably with the exception of Aces that go up in value. Aces go up in value because they are up against a high percentage of hands they dominate like AK and AQ, meanwhile a lot of the small suited and/or connected hands that play well against Aces are removed. All the other pairs go down in value because this 27% range includes a lot of holdings with at least one overcard. As you can see you have to get to pocket fives before you are even a ChipEV favourite, meaning by extension that small pairs are horrible to call in ICM pressure spots:

K2o	32.98%
JTo	38.20%
A2o	40.06%
9Ts	40.68%
QJo	40.69%
A5o	42.82%
A6o	43.10%
A2s	43.30%
KQo	45.52%
A5s	45.87%
KJs	46.25%
KQs	48.25%
A9o	50.03%
ATo	54.69%
AJo	57.47%
AJs	59.55%
AQo	60.47%
AQs	62.36%
AKo	63.37%
AKs	65.06%

The same unpaired hands from the last example all without exception go way down in value, for the same reasons, you are now up against a lot of hands that dominate you. Being suited and/or connected still counts for something but raw equity is much more important, because a lot of the hands you are up against block your potential straights. Against a random hand KJs suited is 62.57% but goes down to 46.25% against this stronger range because we are up against hands like JJ, QQ, KK, AA, KQ, AQ and AK which not only dominate us, they also include the cards we need to improve our hand by making a pair or straight.

This is why it is important to play around and study how your hand plays

against a range of hands, rather than against a random single hand. It's an easy mistake to see you need 75% equity to justify calling a shove for your satellite life, looking down at Jacks and calling because Jacks is a 77.47% favourite against a random hand, but against a stronger range it is not even close to the right strength. And as you'll see, against a tight range you need a very narrow range to call.

Against a Tight Range

Let's look at how our different hands will play against what we would call 'Premium Hands'. The top 10% of hands you would expect to see an Under The Gun opener to be playing, a very tight player, or somebody 3-betting another player.

We define this as:
77+
A9s+
ATo
KQo
KQs

Honestly this might be too wide, a lot of players wouldn't include 77, 88, A9s or KQ in this range, but as a rough guideline of how much a very strong range impacts your own hand strength, let's take a look:

22	39.22%
33	39.81%
44	40.35%
55	40.82%
66	41.06%
77	42.27%
88	45.55%
99	48.81%
TT	53.60%
JJ	58.63%
QQ	65.10%
KK	72.13%
AA	85.22%

You'll notice how useless most of the pairs now become, even 99, which dominated against any two is now a ChipEV underdog before you even factor in ICM. Pocket jacks and even pocket queens do not look very enticing once you factor in ICM, it's only Kings and Aces that are dominating against that range in bubble spots.

K2o	28.09%
A6o	31.25%
A2o	31.54%
A5o	32.61%
JTo	32.65%
QJo	32.74%
A9o	33.16%
9Ts	35.16%
A2s	35.25%
KQo	36.21%
A5s	36.23%
KJs	36.51%
ATo	37.56%
KQs	39.55%
AJo	43.35%
AJs	46.27%
AQo	50.90%
AQs	53.29%
AKo	57.48%
AKs	59.45%

Finally, the unpaired hands are mostly garbage against a tight range, even AQo, which most people would probably assume is a strong hand, is actually a real trap hand. It barely wins a ChipEV coinflip and it is a terrible hand to go out of a tournament on the bubble with. Even AKs performs quite badly when you factor in ICM and against a tight player on most satellite bubbles is probably a fold.

With that out of the way, let's look at some common ICM spots you will face in satellites.

Comfortable but Covered - Calling

Playing the big stack is easy in satellites, as is playing as a short stack, although more nerve wracking. Perhaps one of the trickiest stacks to play is one where you easily cover the short stacks, but the big stack could call you all-in out of spite, and you are not safe enough to just blind away. A typical configuration might be:

Player 1: 40,000
Player 2: 10,000
Player 3: 10,000
You: 20,000

Three seats, blinds are 500/1,000

GTO Shoving Range		
CO	40,000	100% Any Two
GTO Calling Range		
BU	10,000	1.8% JJ+
SB	9,500	2.3% TT+
BB	19,000	0% No Hands Can Call

The GTO response to this situation is that the big stack should shove any two cards on your Big Blind, and in response you should fold 100% of your hands. This should make sense at this stage, you have everything to lose and nothing to gain by making that call, even if you are a monster favourite with Aces.

Let's take the same number of seats but add another player with a 10,000 stack before you:

Player 1: 40,000
Player 2: 10,000
Player 3: 10,000
Player 4: 10,000
You: 20,000

Three seats, blinds are 500/1,000

GTO Shoving Range		
MP3	**40,000**	**42.7% 22+ Ax K2s+ K3o+ Q2s+ QTo+ J4s+ JTo T7s+ 87s 76s 65s 54s**
GTO Calling Range		
CO	10,000	2.6% TT+ AKs
BU	10,000	3.5% TT+ AK
SB	9,500	3.8% TT+ AQs+ AKo
BB	19,000	0.5% AA

This time we are not on the bubble, but the only hand we can call profitably is Aces.

It goes on like that. You can keep adding more players and take it further away from the bubble, but the same outcome keeps coming up. When you have a big stack but the only other big stack shoves into you on or near the bubble of a satellite, almost everything and sometimes even Aces is a fold. Satellites are more game of chips than they are a game of cards.

Comfortable but Covered - Shoving

Let's look at the same spot but flip it and see how the presence of the monster stack behind our big stack, on an otherwise short stacked bubble, affects our shoving ranges.

So this time it's:

You: 20,000
Player 2: 10,000
Player 3: 10,000
Player 4: 40,000

Three seats, blinds are 500/1,000

GTO Shoving Range		
CO	**20,000**	**24.7% TT+ 66 Ax K2s+ K9o+**
GTO Calling Range		
BU	10,000	1.1% KK+ AKs
SB	9,500	1.9% KK+ AK
BB	39,000	1.5% KK+ AKs

Our GTO shoving ranges are actually quite wide, because we are expecting only to get called by very strong hands, even the big stack doesn't want to lose half their stack calling off their chips. It's interesting to note that 66 makes the cut but 77-99 do not, this is because 66 does not get blocked by the wheel straights and broadway straights the Ax hands can make. But what if our opponents are more inclined to spite call us with their premium hands such as AQo+ and TT+?

Adjusted Shoving Range		
CO	20,000	2.1% KK+ AK
Adjusted Calling Range with Spite Calling Big Stack		
BU	10,000	0.5% AA
SB	9,500	0.5% AA
BB	39,000	4.6% TT+ AQ+

In this situation, when we adjust our opponent's range, we now have to fold everything but the big Ace and King hands, even Queens are a fold here.

Whether it is shoving or calling, the more you expect a showdown to happen as a big stack against the only other big stack, the more inclined you should be to throw away just about everything.

You are Short, Everyone Else is Big - Calls

When you are the player who will blind out before everyone else you know you need to shift your strategy and get your money in the middle to try to double up, but the principle still applies that calling off your stack with a less than perfect hand is a terrible strategy in super satellites. So let's look at some inflection points with your stack when you are the player poised to bubble. If there is a loose cannon at your table, you can adjust accordingly, but this is assuming everyone at the table knows they can wait you out.

In this case there are three seats to be won with four players at the table. Everyone has 20 big blinds and we start with you having ten big blinds:

10 Big Blinds		
GTO Shoving Range		
CO	20,000	31.2% 22+ Ax K4s+ KTo+ Q8s+ QJo J9s+ JTo T8s+ 98s 76s 65s
GTO Calling Range		
BU	20,000	0.5% AA
SB	19,500	0.5% AA
BB	9,000	4.8% TT+ AQ+
9 Big Blinds		
GTO Shoving Range		
CO	20,000	18.5% 88+ 66 Ax KQs
GTO Calling Range		
BU	20,000	0.5% AA
SB	19,500	0.5% AA
BB	8,000	5% TT+ AJs+ AQo+
8 Big Blinds		
GTO Shoving Range		
CO	20,000	18.5% 88+ 66 Ax KQs
GTO Calling Range		
BU	20,000	0.5% AA
SB	19,500	0.5% AA
BB	7,000	5% TT+ AJs+ AQo+

To begin with, between 10-8 big blinds, your calling ranges are still within what we would call the tight zone. You still need a premium hand to call with, something that essentially could beat some of the tighter broadway hands. This is because in a satellite, with 10 big blinds, you still have plenty of wiggle room. You can wait for some good spots and survive a few orbits and still be relatively threatening when you shove.

7 Big Blinds		
GTO Shoving Range		
CO	**20,000**	**37.8% 22+ Ax K2s+ K9o+ Q5s+ Q9o+ J7s+ J9o+ T7s+ T9o 97s+ 87s**
GTO Calling Range		
BU	20,000	0% No Hands Can Call
SB	19,500	0% No Hands Can Call
BB	6,000	9.6% 77+ A9+
6 Big Blinds		
GTO Shoving Range		
CO	**20,000**	**37.3% 22+ Ax K4s+ K9o+ Q6s+ Q9o+ J7s+ J9o+ T7s+ T9o 97s+ 87s 76s**
GTO Calling Range		
BU	20,000	0% No Hands Can Call
SB	19,500	0% No Hands Can Call
BB	5,000	12.5% 55+ A7s+ A8o+ KJs+
5 Big Blinds		
GTO Shoving Range		
CO	**20,000**	**32.4% 22+ Ax K6s+ KTo+ Q8s+ QTo+ J8s+ JTo T7s+ T9o 97s+ 87s**
GTO Calling Range		
BU	20,000	0% No Hands Can Call
SB	19,500	0% No Hands Can Call
BB	4,000	15.7% 44+ A5s+ A7o+ KJs+ KQo
4 Big Blinds		
GTO Shoving Range		
CO	**20,000**	**29.4% 22+ Ax K9s+ KTo+ Q9s+ QTo+ J8s+ JTo T8s+ 98s**
GTO Calling Range		
BU	20,000	0% No Hands Can Call
SB	19,500	0% No Hands Can Call
BB	3,000	21.9% 22+ A2s+ A4o+ KTs+ KJo+ QTs+

Between 7-4 big blinds your range widens, you still need stronger than average hands, but it shifts towards what we would call the raw equity hands. Most pocket pairs, big Kings and most Aces. Curiously though you should still dump the smallest pairs right up until four big blinds, because they are at best a flip against random holdings and we still have enough equity in the tournament to not be able to justify flipping.

3 Big Blinds		
GTO Shoving Range		
CO	20,000	24.7% 33+ A2s+ A3o+ K9s+ KTo+ QTs+ QJo JTs
GTO Calling Range		
BU	20,000	0% No Hands Can Call
SB	19,500	0% No Hands Can Call
BB	4,000	35.4% 22+ Ax K5s+ K9o+ Q8s+ QTo+ J7s+ JTo T7s+ T9o 96s+ 86s+ 76s 65s
2 Big Blinds		
GTO Shoving Range		
CO	20,000	10.7% 66+ A8s+ ATo+ KTs+
GTO Calling Range		
BU	20,000	0% No Hands Can Call
SB	19,500	0% No Hands Can Call
BB	3,000	94.9% 22+ Jx+ T2s+ T3o+ 9x 82s+ 84o+ 72s+ 73o+ 62s+ 63o+ 5x-4x 32s

It's only once we get to the three big blind and below mark that we start to call with almost anything connected. It's only now, for example, that we call with Kx hands, which a lot of decent tournament grinders would previously have assumed would have been a profitable ChipEV call with a much deeper stack. It's only when we get to two bigs that we call with pretty much our entire range, by virtue of the fact that we are going to be forced all-in the next hand. Even with a measly three big blinds, we still fold a lot of our range when our opponents have more chips than us. Contrast this with the example we gave in the end game chapter when the short stack shoves into the short stack, and the caller should call really wide with ten big blinds. The difference in our new example is that when we call and win, the tournament continues, and the chips gained are less valuable than the equity lost when we lose.

This is just one standardised example of what we suspect will be a common scenario, as when you are playing for a seat into one of the bigger live events, there tends to be 2-3 packages on offer. As with all the examples we suggest you play around with these inflection points in an ICM calculator. The ranges and inflection points will differ slightly when it's five players four seats, or ten players nine seats, or if there are nits and/or maniacs at the

table, but will follow a similar arc.

You are Short, Everyone Else is Big - Shoves

Let's look at the same situation but when we are facing the decision whether to shove or not as a short stack. Again this is three seats, four players, everyone else has 20 big blinds and we start with 10 and then look at how our ranges change the lower we get.

		10 Big Blinds
		GTO Shoving Range
CO	**10,000**	**20% 33+ A2s+ ATo+ A5o-A4o K9s+ KTo+ QTs+ QJo JTs**
		GTO Calling Range
BU	20,000	3.2% TT+ AK
SB	19,500	4.7% TT+ AQ+
BB	19,000	5.4% 99+ AJs+ AQo+
		9 Big Blinds
		GTO Shoving Range
CO	**9,000**	**19.7% 33+ A2s+ ATo+ A5o K9s+ KTo+ Q9s+ QJo JTs**
		GTO Calling Range
BU	20,000	3.8% TT+ AQs+ AKo
SB	19,500	4.9% 99+ AQ+
BB	19,000	6.8% 88+ AJ+
		8 Big Blinds
		GTO Shoving Range
CO	**8,000**	**23.4% 22+ A2s+ A9o+ A5o K6s+ KTo+ Q9s+ QTo+ J9s+ T9s**
		GTO Calling Range
BU	20,000	4.7% TT+ AQ+
SB	19,500	6.5% 99+ AJ+
BB	19,000	9.2% 66+ AT+ KQs
		7 Big Blinds
		GTO Shoving Range
CO	**7,000**	**24.6% 22+ A2s+ A8o+ A5o K8s+ KTo+ Q9s+ QTo+ J9s JTo T9s**
		GTO Calling Range
BU	20,000	5.4% 99+ AJs+ AQo+
SB	19,500	8% 88+ AT+
BB	19,000	11.4% 55+ A8s+ A9o+ KJs+

Between 10-7 big blinds the ranges stay relatively the same, we shove almost all of our pairs, Aces and broadway type hands. Although we are well covered, our opponents still don't want to look us up and become the short stack themselves, and as such they can only call us with the top part of their range - the better pairs and the big Aces mostly. So our shoves should get through a lot of the time.

6 Big Blinds		
GTO Shoving Range		
CO	**6,000**	**29.3% 22+ A2s+ A3o+ K8s+ KTo+ Q8s+ QTo+ J8s+ JTo T8s+ 98s**
GTO Calling Range		
BU	20,000	7.1% 88+ ATs+ AJo+
SB	19,500	9.2% 66+ A9s+ ATo+
BB	19,000	17.9% 33+ A3s+ A7o+ KTs+ KJo+ QJs
5 Big Blinds		
GTO Shoving Range		
CO	**5,000**	**29.8% 22+ Ax K7s+ KTo+ Q9s+ QTo+ J9s+ JTo T8s+ 98s**
GTO Calling Range		
BU	20,000	8% 88+ AT+
SB	19,500	10.9% 55+ A8s+ A9o+
BB	19,000	24.8% 22+ A2s+ A3o+ K9s+ KTo+ QTs+ QJo JTs
4 Big Blinds		
GTO Shoving Range		
CO	**4,000**	**32.7% 22+ Ax K3s+ K9o+ Q8s+ QTo+ J8s+ JTo T8s+ 98s**
GTO Calling Range		
BU	20,000	8% 88+ AT+
SB	19,500	12.7% 55+ A7s+ A8o+ KJs+
BB	19,000	35.1% 22+ Ax K2s+ K8o+ Q7s+ QTo+ J8s+ JTo T8s+ 97s+ 87s 76s
3 Big Blinds		
GTO Shoving Range		
CO	**3,000**	**33.2% 33+ Ax K4s+ K7o+ Q8s+ QTo+ J9s+ JTo T9s**
GTO Calling Range		
BU	20,000	8% 88+ AT+
SB	19,500	11.7% 55+ A7s+ A9o+ KQs
BB	19,000	74.4% 22+ Kx+ Q2s+ Q4o+ J2s+ J7o+ T2s+ T6o+ 92s+ 96o+ 82s+ 85o+ 73s+ 75o+ 62s+ 64o+ 52s+ 54o 42s+ 32s

Between 6-3 big blinds our range widens to essentially most of our playable coordinated hands and king high. The Big Blind can now start calling us wider because they can no longer get too hurt calling and losing, but the other two players still have to keep their range quite tight because of the risk of running into the Big Blind with something.

2 Big Blinds		
GTO Shoving Range		
CO	**2,000**	**38.6% 33+ Ax K2s+ K6o+ Q5s+ Q8o+ J8s+ J9o+ T8s+**
GTO Calling Range		
BU	20,000	8% 88+ AT+
SB	19,500	14.5% 55+ A5s+ A8o+ KTs+ KQo
BB	19,000	100% Any Two
1 Big Blind		
GTO Shoving Range		
CO	**1,000**	**33.2% 33+ Ax K4s+ K7o+ Q8s+ QTo+ J9s+ JTo T9s**
GTO Calling Range		
BU	20,000	8% 88+ AT+
SB	19,500	11.7% 55+ A7s+ A9o+ KQs
BB	19,000	Automatic Call

When we are down to two big blinds our range widens a bit more, because it is last chance saloon, so we can throw in Qx hands. However, it's not any two cards, for the reason that the Big Blind has to call here with any two, so we still want a better than average hand. We will be committed on our big blind in the next hand anyway. When we are down to a single big blind our range actually tightens up, because we are essentially calling here and without a stronger than average hand, we may as well fold and wait to see what the deck when we are forced all-in brings us.

The big takeaway here is how little our range widens the shorter we get. We still need something reasonably strong even when we are super short and when our opponent can get hurt by losing an all-in pot against us, they too should keep their calling ranges tight. Once again, play around yourself with ICM calculators in these spots by adding more players, seats and adjusting the ranges for tight and loose opponents. At a table of nits you may find that you can get away with shoving 100% of your hands, but mainly look for the inflection points between 10 bigs and a micro stack.

A reminder - instead of shoving, bet an amount that is 99% of a shove leaving a few chips behind so that it forces your opponents to commit more money in the pot than your stack size, making it less likely a second player opponent gets involved.

Two People Already All-in on the Bubble, You Cover One of Them

By now if you are on the bubble and there is a shove and a call before you, which covers you, no doubt your instinct is to get out of the way, even if you have a big hand. Why put yourself at risk, when the tournament could be ending now anyway? However, when you are short, if the shorter player doubles up it puts you in a vulnerable position. There will be some times when you have a very small stack and look down at something like Aces and wonder whether you are still better off getting the money in, to protect you should the shorty double up (and, indeed, to do the dirty work of busting shorty yourself).

When you are thinking about your calling ranges in this spots, you need to have good reads on both the players who have acted ahead of you, because you want to make sure you are ahead of the range of at least one of them, ideally both of them, and also factor in how they fare against each other. If the chip leader has the best hand at showdown, it doesn't matter as long as you cover the other player, because you will finish ahead of them. If you have the best hand at showdown, you bust the shorter player and the tournament is over. If the shorter player has the best hand at showdown, you better beat the chip leader otherwise you have bubbled (even if you win this side pot you may be crippled). If you have the worst hand and the chip leader has the second worst hand, the tournament is over for you too.

Let's look at some ranges. With three seats up for grabs and four players left, the big stack is the button and gets called by the shorter player. Blinds are 500/1,000.

UTG: 10,000
Button: 40,000
Small Blind: 8,000
Big Blind: 10,000

Button Shoves, Small Blind Calls, GTO		
UTG	10,000	Folded
GTO Shoving Range		
BU	40,000	50.2% JJ+ 88-55 Qx+ J7s+ J5s T7s+ 96s+ 85s+ 74s+ 64s+ 53s+ 43s
GTO Calling Range		
SB	7,500	Called with 1.7% JJ+
BB	9,000	1% KK+
Button Shoves, Small Blind Calls, Assuming Wider Small Blind Call		
UTG	10,000	Folded
Adjusted Shoving Range		
BU	40,000	40% 22+ Ax K2s+ K9o+ Q4s+ Q9o+ J6s+ J9o+ T6s+ T9o 86s+ 86s+ 76s 65s
Adjusted Calling Range		
SB	7,500	Called with 38.5% 22+ Ax K2s+ K5o+ Q5s+ Q9o+ J8s+ JTo+ T8s+ 98s
BB	9,000	6.2% 88+ ATs+ AQo+

If this were a GTO spot the Small Blind only calls with Jacks and we should call only with Kings. However, let's say the Button pushes wide and the Small Blind calls with a wide range. Now we can justifiably call with the premium end of our range which is 88+ and the big Aces.

Same situation, let's just make our two shorter players, shorter:

UTG: 10,000
Button: 40,000
Small Blind: 5,000
Big Blind: 8,000

Button Shoves, Small Blind Calls, GTO		
UTG	10,000	Folded
GTO Shoving Range		
BU	**40,000**	**53.8% 22+ Ax K2s+ K3o+ Q2s+ Q8o+ J2s+ J8o+ T3s+ T8o+ 95s+ 98o 85s+ 75s+ 64s+ 53s+ 43s**
GTO Calling Range		
SB	4,500	Called with 6.2% 88+ ATs+ AQo+
BB	7,000	6.2% 88+ ATs+ AQo+
Button Shoves, Small Blind Calls, Assuming Wider Small Blind Call		
UTG	10,000	Folded
Adjusted Shoving Range		
BU	**40,000**	**53.8% 22+ Ax K2s+ K3o+ Q2s+ Q8o+ J2s+ J8o+ T3s+ T8o+ 95s+ 98o 85s+ 75s+ 64s+ 53s+ 43s**
Adjusted Calling Range		
SB	4,500	Called with 38.5% 22+ Ax K2s+ K5o+ Q5s+ Q9o+ J8s+ JTo+ T8s+ 98s
BB	7,000	16.9% 55+ A3s+ A7o+ KTs+ KJo+

In both the GTO and the wider spot, our calling ranges have got wider now we have both got shorter. In fact if we are assuming the players before us get it in wide, we can actually call with weak Aces, strong Kings and 55+..

Now let's make both of us even shorter, micro stack time:

UTG: 10,000
Button: 40,000
Small Blind: 4,000
Big Blind: 7,000

Button Shoves, Small Blind Calls, Assuming Wider Small Blind Call		
UTG	10,000	Folded
Adjusted Shoving Range		
BU	**40,000**	**53.8% 22+ Ax K2s+ K3o+ Q2s+ Q8o+ J2s+ J8o+ T3s+ T8o+ 95s+ 98o 85s+ 75s+ 64s+ 53s+ 43s**
Adjusted Calling Range		
SB	3,500	Called with 38.5% 22+ Ax K2s+ K5o+ Q5s+ Q9o+ J8s+ JTo+ T8s+ 98s
BB	4,000	1.4% QQ+

There is no GTO spot this time because the GTO line would be for the Button to sit out (more on that in a moment). However, if we assume there is a wide shove and a wider call, which is a common spot in satellites with this dynamic, then our range, perhaps surprisingly, tightens. This goes against conventional wisdom. Why would we get our chips in wider when the stacks are deeper compared to here where the stacks are much shallower? This is actually ICM 101. The shorter we are the more valuable each chip is. In this case the Small Blind is so short, they are pretty much out the door no matter what happens. Getting involved at this stage when the game is almost over would be suicide.

Two People Already All-in on the Bubble, They Both Cover You

This time let's look at the same situation, but both the players ahead of you have you covered, meaning you are the shortest stack at the table.

UTG: 10,000
Button: 40,000
Small Blind:10,000
Big Blind: 8,000

UTG	10,000	Folded
GTO Shoving Range		
BU	**40,000**	**32.4% 22+ Ax K2s+ KTo+ Q8s+ QTo+ J8s+ JTo T8s+ 98s 87s**
GTO Calling Range		
SB	9,500	Called with 0.5% AA
BB	9,000	0% No Hands Can Call
Button Shoves, Small Blind Calls, Assuming Wider Small Blind Call		
UTG	10,000	Folded
Adjusted Shoving Range		
BU	**40,000**	**32.4% 22+ Ax K2s+ KTo+ Q8s+ QTo+ J8s+ JTo T8s+ 98s 87s**
Adjusted Calling Range		
SB	9,500	Called with 21.9% 22+ Ax KJs+ KQo
BB	9,000	0.5% AA

In this situation it is much clearer, in a GTO scenario you should fold 100% of your hands because for the Small Blind to have called they have one hand and one hand only, Aces. If the Small Blind is a loose cannon and we assume they are calling with all their normally strong hands, the only hand we can profitably call with is Aces. If you play around with the stacks and the ranges you essentially get the same answer, which is you should fold 100% of your hands most of the time and Aces only becomes a call when you have a very solid read that the Small Blind is a maniac. But for simplicity it is much easier to just say that whenever you are the shortest stack on the bubble and there is an all-in and a call behind you, fold your hand, get on your knees and praise the poker gods.

Two People Already All-in on the Bubble, You Cover Both of Them

The much easier situation is when two players are all-in ahead of you and you cover them, although unless you have a monster stack this should still be a tight decision, because giving away chips on a satellite bubble is a terrible strategy regardless. In fact for the most part if you are close in chips to the players all-in, as a general rule of thumb think of it as if you are covered, because the downside of losing is usually that you become the player in danger.

Let's look at the following situation, once again three seats to be won and four players left. The Button shoves and the Small Blind calls, we cover them considerably in the Big Blind:

UTG: 10,000
Button: 8,000
Small Blind: 7,000
Big Blind: 40,000

UTG	10,000	Folded
GTO Shoving Range		
BU	**8,000**	**23.3% 44+ A2s+ A7o+ A5o-A4o K9s+ KTo+ Q9s+ QJo J9s+ T9s**
GTO Calling Range		
SB	6,500	Called with 3.8% TT+ AQs+ AKo
BB	39,000	5.9% 88+ AJs+ AQo+
Button Shoves, Small Blind Calls, Assuming Wider Small Blind Call		
UTG	10,000	Folded
Adjusted Shoving Range		
BU	**8,000**	**23.3% 44+ A2s+ A7o+ A5o-A4o K9s+ KTo+ Q9s+ QJo J9s+ T9s**
Adjusted Calling Range		
SB	6,500	Called with 15.4% 33+ A4s+ A8o+ KJs+ KQo
BB	39,000	10.1% 66+ A9+

You'll notice how different our calling ranges are this time, for obvious reasons, we can call both players without it hurting us and we can end the tournament as long as we don't have the worst hand and the shortest stack has the best. We are still restricted to what we would call Premium Hands in the GTO example, and a tiny bit wider when we give the Small Blind a wider calling range. So even with a huge stack we should be calling with the top end of our range, because there are no extra prizes for coming 1st.

Let's look the same situation, but let's give us a less commanding stack. This time we have 20,000 chips, meaning if we call, lose and the other two players survive, we are still doing ok but we are vulnerable.

UTG: 10,000
Button: 8,000
Small Blind: 7,000
Big Blind: 20,000

UTG	10,000	Folded
GTO Shoving Range		
BU	**8,000**	**60.5% 22+ QX+ J2s+ J7o+ T2s+ T8o+ 95s+ 85s+ 75s+ 64s+ 53s+ 43s**
GTO Calling Range		
SB	6,500	Called with 2.6% TT+ AKs
BB	19,000	2.7% 99+
Button Shoves, Small Blind Calls, Assuming Wider Small Blind Call		
UTG	10,000	Folded
Adjusted Shoving Range		
BU	**8,000**	**60.5% 22+ QX+ J2s+ J7o+ T2s+ T8o+ 95s+ 85s+ 75s+ 64s+ 53s+ 43s**
Adjusted Calling Range		
SB	6,500	Called with 22% 55+ A2s+ A4o+ K8s+ KTo+ QTs+
BB	19,000	7.5% 99+ AT+

This time around our GTO calling range is very interesting - it has gotten much tighter. We can't even call with unpaired hands like Ace King and can only call with our best pocket pairs. When we widen the Small Blind's calling range we can call wider, but it is again a tighter calling range than the previous example. By contrast the Button's GTO shoving range is much much wider. This is all because with 20,000 chips compared to 40,000 chips we are in a much more precarious position. Yes we cover everyone at the table but if we lose one hand the situation flips. The Button can shove very wide because they can really hurt us and we would be foolish to spite call them without a made hand.

When you play around with the stack sizes beyond this point the Big Blind's calling ranges stay the same, but once you have a big yet vulnerable stack your calling ranges are restricted to big pairs. Even if you have a massive stack it needs to be the top end of your range. This is why doing a COC calculation in the moment is useful not just for your calling ranges but to see what your stack would be if you lose, though you probably have a reasonable instinctive understanding of when calling and losing a shove would hurt you or not anyway.

Two Seats, Three Players, Two Short Stacks
Now back to that classic, counterintuitive hand from the End Game

section where you can call very wide, which is when there are two short stacks left to battle for the final seat when the rest are locked up. The reasoning for this is because when everyone else has their seats locked up by a massive degree the game becomes a de facto HUSNG between the final two players, and the decisions are essentially ChipEV rather than ICM when they are one on one.

But what about when you are the big stack in these situations? When you have a seat locked up and two shorties are left to duke it out, what should you be doing to help them end the game? In this case let's say there are three players battling it out two seats, with blinds at 500/1,000:

Button: 35,000
Small Blind: 6,000
Big Blind: 6,000

This is the GTO range an ICM calculator gives the Button to shove:

GTO Shoving Range		
BU	35,000	**0% No Hands Can Shove Profitably**
GTO Shoving Range		
SB	5,500	**72.9% 22+ Qx+ J2s+ J4o+ T2s+ T6o+ 93s+ 96o+ 84s+ 86o+ 74s+ 76o 63s+ 65o 53s+ 43s**
GTO Calling Range		
BB	5,000	55.7% 22+ Kx+ Q2s+ Q3o+ J3s+ J7o+ T6s+ T8o+ 97s+ 98o 87s

This is quite a remarkable thing to see in a solver, but it is correct. If everybody is playing a GTO strategy, the Button should fold everything, even Aces. This goes against the prevailing wisdom that would advocate playing Aces to bust the two players or at least to whittle them down to an even smaller stack. However, as we know, their GTO strategy here would be to get it in against each other very light (for a satellite) but when we shove, they have to call insanely tight against us. Before the hand we have a 96.4% chance of a seat and they are 51.8% each, if we shove and they fold we have a 97.2% chance of winning our seat, but it is still less profitable than folding.

This is because when we fold the Small Blind is supposed to shove 73% of the time and the Big Blind is supposed to call 56% of the time. So roughly 40% of the time they get the money in the middle and barring any chopped pots, the tournament is over. Therefore our equity goes up to 100% from 96.2%, rather than the 97.2% we move up to if we shove. Since this happens 40% of the time, getting out of the way is worth 1.52% (0.4*3.8) more equity, meaning the fold is more profitable (+1.52%) than the shove (+1%).

Same Situation, Non-GTO

That's all well and good when you are playing in a satellite against a handful of the best players in the world, but what about when you have a read that your tablemates do not have a clue about GTO? You are much more likely to run into players who understandably think because they are on the bubble of a satellite and thus should shove and call tight. So let's go back to the previous situation with three players left and two seats. We are the big stack, but we assume the Small Blind only shoves K7+, AX plus and 88+, while the Big Blind calls with the top 25% of their hands. They are still short after all, so they will call wider.

Adjusted Shoving Range		
BU	**35,000**	**100% Any Two**
Adjusted Calling Range		
SB	5,500	24.9% 88+ Ax K7+
BB	5,000	25% 22+ Ax K9s+ KTo+ QTs+

This time around our GTO range is to shove any two cards, because the other two players only get their money in the middle of the table 10% of the time, so there is much more onus on us to end the tournament for them. An important reminder that it is very useful to know about this counterintuitive strategy, but to always play based on your reads and - this is very important - not assume the rest of your table have studied GTO (or read this book).

One final note is that if you are the big stack in the Blinds with this dynamic, your shoving and calling ranges are mostly in line with what you would expect them to be. This unusual dynamic where the short stacks should get it in wide against each other and the big stack should get out of the way only applies when the big stack is not one of the Blinds and thus has nothing already invested.

Smaller Bottom Prize ICM

A very common scenario in satellites that exceed their guarantee is that there will be one or more smaller prizes awarded before the official seats. Let's say it is a $10 satellite for a $100 seat and 46 players have entered which would make a prize pool of four $100 seats and a surplus of $60. Some sites will make that surplus $60 a prize in itself but right now the more standard policy is to spread out the prizes, so it would perhaps award three $20 prizes. The rationale here is that it keeps more money spread out in the poker room's ecosystem by awarding more players a prize to keep playing with.

Interestingly, on sites where the surplus is awarded as a single prize, when that prize is close to the value of a seat you sometimes get an unusual dynamic of everyone trying to beat the bubble, but then be the next player eliminated. The reason is for some satellite regulars $60 cash might be worth more to them than $100 forced to play in a target event. Either way this really

shouldn't change your strategy of trying to get over the bubble as safely as possible.

Before we do some analysis, just use common sense when approaching these bubbles. If the cash prize before the seats is something valuable to you and close to the value of the seat, just treat it strategically like it is an extra seat and don't adjust your strategy. Likewise if the value of a seat is $100 and the first prize is $20, other than the fact that you will have to go hand-for-hand sooner just ignore the prize and treat the first seat as the real bubble.

So let's look at that example but first for a baseline, this is what six players remaining, five $100 seats, 10 big blinds each would look like:

UTG Shoving Range		
UTG	**10,000**	**71.6% 22+ Kx+ Q2s+ Q4o+ J2s+ J9o+ T2s+ T8o+ 92s+ 97o+ 82s+ 72s+ 75o+ 62s+ 64o+ 52s+ 53o+**
GTO Calling Range		
MP	10,000	0.9% KK+
CO	10,000	0.9% KK+
BU	10,000	0.9% KK+
SB	9,500	0.9% KK+
BB	9,000	1.4 QQ+
MP Shoving Range		
MP	**10,000**	**87.5% 22+ Jx+ T2s+ T6o+ 92s+ 95o+ 82s+ 85o+ 72s+ 74o+ 62s+ 63o+ 5x-4x 32s**
GTO Calling Range		
CO	10,000	0.9% KK+
BU	10,000	0.9% KK+
SB	9,500	1.4 QQ+
BB	9,000	1.8% JJ+
CO Shoving Range		
CO	**10,000**	**100% Any Two**
GTO Calling Range		
BU	10,000	1.4% QQ+
SB	9,500	1.8% JJ+
BB	9,000	1.8% JJ+
BU Shoving Range		
BU	**10,000**	**100% Any Two**
GTO Calling Range		
SB	9,500	1.8% JJ+
BB	9,000	2.3% TT+
SB Shoving Range		
BU	**9,500**	**100% Any Two**
GTO Calling Range		
BB	9,000	2.3% TT+

Now let's look at four $100 seats, six players, but the fifth prize is $60

cash:

UTG Shoving Range		
UTG	**10,000**	**71.6% 22+ Kx+ Q2s+ Q4o+ J2s+ J9o+ T2s+ T8o+ 92s+ 97o+ 82s+ 72s+ 75o+ 62s+ 64o+ 52s+ 53o+**
GTO Calling Range		
MP	10,000	0.9% KK+
CO	10,000	0.9% KK+
BU	10,000	0.9% KK+
SB	9,500	0.9% KK+
BB	9,000	1.4 QQ+
MP Shoving Range		
MP	**10,000**	**87.5% 22+ Jx+ T2s+ T6o+ 92s+ 95o+ 82s+ 85o+ 72s+ 74o+ 62s+ 63o+ 5x-4x 32s**
GTO Calling Range		
CO	10,000	0.9% KK+
BU	10,000	0.9% KK+
SB	9,500	1.4 QQ+
BB	9,000	1.8% JJ+
CO Shoving Range		
CO	**10,000**	**100% Any Two**
GTO Calling Range		
BU	10,000	1.4% QQ+
SB	9,500	1.8% JJ+
BB	9,000	1.8% JJ+
BU Shoving Range		
BU	**10,000**	**100% Any Two**
GTO Calling Range		
SB	9,500	1.8% JJ+
BB	9,000	2.3% TT+
SB Shoving Range		
BU	**9,500**	**100% Any Two**
GTO Calling Range		
BB	9,000	2.3% TT+

As you can see, the ranges are exactly the same. The difference between $60 cash and a $100 seat are practically the same, so the ICM considerations do not differ. You can still put pressure on your opponents by shoving a wide range and the prospect of calling and bubbling is still devastating.

This time let's look at six players, four $100 seats, with a consolation prize of $20 for fifth:

UTG Shoving Range		
UTG	**10,000**	**49.4% JJ+ 88-55 Qx+ J8s+ T7s+ 96s+ 85s+ 74s+ 64s+ 53s+ 43s**
GTO Calling Range		
MP	10,000	1.4 QQ+
CO	10,000	1.4 QQ+
BU	10,000	1.4 QQ+
SB	9,500	1.4 QQ+
BB	9,000	1.4 QQ+
MP Shoving Range		
MP	**10,000**	**65.3% 22+ Qx+ J2s+ J7o+ T2s+ T8o+ 95s+ 84s+ 74s+ 76o 63s+ 65o 52s+ 54o 42s+ 32s**
GTO Calling Range		
CO	10,000	1.4 QQ+
BU	10,000	1.4 QQ+
SB	9,500	1.8% JJ+
BB	9,000	2.3% TT+
CO Shoving Range		
CO	**10,000**	**85.2% 22+ Tx+ 92s+ 96o+ 82s+ 86o+ 73s+ 75o+ 62s+ 64o+ 52s+ 53o+ 42s+ 43o 32s**
GTO Calling Range		
BU	10,000	1.8% JJ+
SB	9,500	2.3% TT+
BB	9,000	2.7% 99+
BU Shoving Range		
BU	**10,000**	**100% Any Two**
GTO Calling Range		
SB	9,500	2.7% 99+
BB	9,000	2.7% 99+
SB Shoving Range		
BU	**9,500**	**100% Any Two**
GTO Calling Range		
BB	9,000	2.7% 99+

In late position the ranges are almost identical, just with slightly tighter calling ranges. However, from the earlier positions the shoving ranges get much tighter, because there isn't the same ICM pressure. This is because

practically speaking we are not on the real bubble. In fact, as one would expect, the ranges look almost identical to what they would be with six players left, four $100 seats, and no $20 consolation prize:

UTG Shoving Range		
UTG	10,000	43.4% 44+ Kx+ Q2s+ Q8o+ Q6o-Q5o JTs 98s 87s 75s+ 65s 54s
GTO Calling Range		
MP	10,000	1.4 QQ+
CO	10,000	1.4 QQ+
BU	10,000	1.4 QQ+
SB	9,500	1.4 QQ+
BB	9,000	3% JJ+ AK
MP Shoving Range		
MP	10,000	58% TT+ 88-44 Qx+ J2s+ J4o+ T6s+ 97s+ 85s+ 75s+ 64s+ 53s+ 43s
GTO Calling Range		
CO	10,000	1.8% JJ+
BU	10,000	1.8% JJ+
SB	9,500	1.8% JJ+
BB	9,000	2.6% TT+ AKs
CO Shoving Range		
CO	10,000	82.1% 22+ Tx+ 92s+ 96o+ 84s+ 87o 73s+ 75o+ 62s+ 64o+ 52s+ 54o 42s+ 32s
GTO Calling Range		
BU	10,000	2.3% TT+
SB	9,500	2.3% TT+
BB	9,000	3.9% 99+ AKs
BU Shoving Range		
BU	10,000	100% Any Two
GTO Calling Range		
SB	9,500	3.2% 88+
BB	9,000	4.3% 88+ AKs
SB Shoving Range		
BU	9,500	100% Any Two
GTO Calling Range		
BB	9,000	4.3% 88+ AKs

This should make intuitive sense. We didn't play this satellite to double our $10 buy-in we played it for a $100 seat. The $60 cash prize in the previous example is close to what we signed up for, so the ICM

considerations are very similar, but a paltry $20 mincash is barely worth factoring in to our decisions. So the takeaway here is a common sense approach, if the surplus prize is close to the seat you are going for, for example over 50% the value of it, treat it like the bubble, if it is not then don't.

Final considerations

In this book we have given what I would say are common satellite scenarios with a few outliers which help to illustrate important themes. While we have given you the baseline situations in satellites, you will be surprised at some of unusual scenarios satellites bring up from time to time. I think we have already given you enough information to beat small stakes satellites, but if you want to regularly beat up the biggest games you should use this book as a jumping off point for further study.

Start by practicing the calculations like ACS and COC we have provided in these pages, as well as experimenting with how your hands play against different ranges in a poker equity calculator. Also familiarise yourself with ICM and practice with one of the many ICM calculators available (PokerTracker includes an equity calculator and an ICM calculator, but I particularly like HoldemResources Calculator). If you are completely new to ICM, it's worth playing a range of formats like SNGs and Double or Nothings, to see the baseline ICM lessons a lot of the best satellite grinders cut their teeth on. You'll be surprised how quickly you develop an instinct for basic ICM, equity against ranges and COC calculations after just a few weeks of self study (and obviously it's a lot cheaper than learning at the tables).

When you look at satellite spots, focus on variables that change your ranges. So things like our opponents, position, stack size and how far we are from the bubble. The more you use software like HoldemResources Calculator to simulate these spots, the more intuitive it will be when you play. Think in terms of adjusting from base ranges. This is why we have used a lot of examples starting with GTO ranges and adjusting afterwards. GTO is what we would consider your base range, which you should adjust depending on other variables.

To begin with, in terms of evaluating your own play, focus on calls more than shoves. In my experience the biggest mistakes people make in satellites are bad calls, rather than bad shoves. If a fold is a mistake it will often be a minor mistake at worst, if a shove is a mistake it is often not massive, but people can make calls which are literally burning money. So first and

foremost get in the lab and study your calls until you get really solid at them, after which work on your shoves and beyond.

Probably the hallmark of any successful player, regardless of format, is that they spend a lot of time with like minded players discussing tricky hands. So if you really want to master satellites (and tournaments in general), find fellow players on forums, social media and chat channels like Discord who are also studying these games (and by all means suggest to them they buy this book). To this day I have weekly study groups with many like minded players and it really keeps the mind fresh and challenged.

Contrary to what some players might say, being a satellite grinder does not mean you will become a worse regular MTT grinder. In fact the deep dives into ICM that are part of a satellite regular's arsenal will give you an edge in multi table tournaments that a lot of other players do not have. However, keep a good portion of your self study on regular MTTs because obviously if you do well at satellites, you will be playing more high stakes regular tournaments.

It would be remiss of me not to mention some of the books that have shaped the pages of this one, so if you are a bookworm and want to read more useful stuff, these are some of the titles that have influenced this one:

Kill Everyone by Lee Nelson, Tysen Steib and Steven Heston
Sit 'N' Go Strategy by Collin Moshman
The Mental Game of Poker by Jared Tendler and Barry Carter
Thinking Fast and Slow by Daniel Kahneman

Finally, if you enjoyed this book and want to get more free strategy insight, you can sign up for my free newsletter at the link below:

tinyurl.com/GTOPoker

If this book has helped you I would really appreciate it if you gave it a review on Amazon. If you win a package to a big live tournament it would be really awesome if you could tweet me to let me know about it.

Good luck, and if in doubt, fold those Aces,

Dara O'Kearney

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The Authors

Dara O'Kearney

Dara O'Kearney is a professional poker player from Ireland with a long standing reputation as the best satellite specialist in the game. He has won over $1 million in satellite tournaments alone and twice won the PokerStars UKIPT satellite leaderboard. He is sponsored by Unibet Poker and is the co-host of The Chip Race Podcast.

www.twitter.com/daraokearney
www.dokearney.blogspot.com

Barry Carter

Barry Carter is a poker author from the United Kingdom with a long standing reputation as a mediocre player. He is the editor of PokerStrategy.com, the world's largest poker community, and co-author of the best-selling books The Mental Game of Poker 1 & 2.

www.twitter.com/barry_carter
www.pokermediapro.com

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