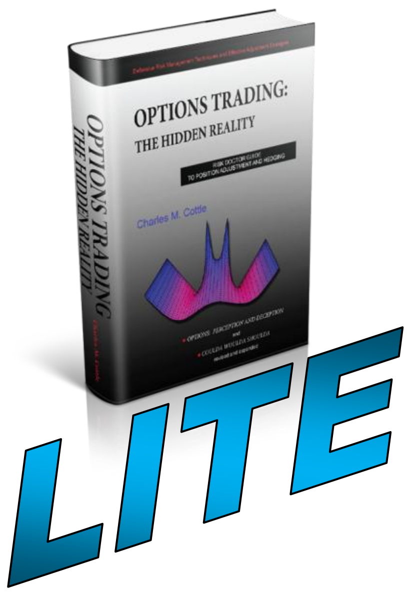
Options Trading:
The Hidden Reality *LITE*
5 Part Training Course

Part 1



By
Charles M. Cottle
RiskDoctor.com

CHAPTER

1

PICKING UP WHERE THE REST LEAVE OFF: SYNTHETICS

When talking about options, we are talking about alternatives. By studying alternatives and the relationships between various option configurations, it is possible to gain considerable insight into feasible trading strategies and the amount of risk involved in each. A position may be looked at in many different ways. There is the raw (actual) position consisting of the exact options that contribute to an overall strategy. For every raw position there are a number of alternative positions called synthetic positions (synthetics). A synthetic position has the same risk profile as its raw position and achieves the same objectives. Once the reader fully grasps the concept of synthetics, it can be used to assess risk with a great deal more perception. We will explore the concept of position dissection, that is, positions that are broken down into useful components or spreads, so that we may understand how these items impact the overall position in terms of quantifiable risk. This will aid decision-making in building strategies and making position adjustments to the original position (which is crucial for ongoing success in the options arena).

Following an introduction to synthetics, the basic mechanics of locked[1] positions called conversions, reversals, boxes and put-call parity are explained. With these tools the reader will be able to fully comprehend the discussion on position dissection. These tools reveal a whole new way to see and capture opportunity.

One could argue that this is much more than a retail investor needs to know about options in order to trade them. Is it better to know more or less about something that can make or lose money? Here is what Adam, one reader of the book said, "In essence, the CWS (Coulda Woulda Shoulda) book offers the reader the ability to understand the actual risks of positions more clearly and how to alter positions on the fly. Yes, this will help prevent major losses from risks that you may not have been aware existed. Beyond that, this knowledge also helps you build better positions that more closely match your market opinion from the start AND, as your market opinion changes, you can choose from more alternatives to adjust your positions. Often these adjustments can be made for

[1] **Lock**

Locked positions usually refer to conversions, reverse conversions, boxes, and jelly rolls. It seems as though they cannot lose money, but they can. The factors that can affect *locks* vary between products. If the options were European style with futures-style margining, a lock would truly be bullet proof.

far less money then simply "removing" yourself from the position entirely – and that adds to your overall efficiency as a trader. In other words, the book offers lower risk and greater profits."

THE NATURE OF A POSITION

There are three main reasons that traders lose money. First, they simply have a wrong opinion of the market in a game where money is made and lost based on opinions. Second, traders lose their discipline and the patience to follow their own rules. They may have a pattern of riding losing trades, coupled with taking profits too soon on winning trades. A third reason can be explained by an insufficient understanding of the nature of a position's risk and where opportunities present themselves to optimize the position as the underlying fluctuates over time. Position dissection allows one to discern those opportunities with greater clarity. Basically, as time passes and the underlying fluctuates, real or synthetic components of the total position reach a point where they are not worth having any longer.

Consider this brief true story that demonstrates where risk has not been correctly assessed:

Story: Covered-Write: A trader once came up to me on the floor of the exchange and asked, "What do you think about selling the 90 calls at about 9.00, and buying the stock here at about 96.00, one to one (one call for each 1oo[2] (100) shares)?" His reasoning was that if the stock stayed at current levels, traded higher or at least stayed above 90 he would have a profit of about 3.00 ($300) for each one to one spread. That assumption is correct but I then asked him, "Hold that thought to the side for a moment and instead consider, as an alternative, selling the same quantity of 90 puts at 3.00 naked[3]?" He was quick to answer, "No, never, I would hate to be naked short puts!" I then showed him that the two trades are virtually identical. Being naked short puts is very suitable for certain investors in certain circumstances but it seemed reasonable to assume that the trade was not for this particular person. **End**

Had the trader in the example known that a covered write was like a short put he would have realized that he himself would not do the trade. This is where synthetics come in. It would have been a suitable trade had the trader been willing to be short naked puts and had the financial resources to cover the trade. However, this trader did not know, that for all intents

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[2] **1oo Shares**

The "oo" format as in "10oo", for example, is used so that the reader can think of the quantity of underlying shares in terms of units that options can exercise into. Therefore 10oo stands for either 10 units or 1,000 shares of stock (most stock options represent 100 shares of the stock). The "10" refers simply to the number of contracts worth of underlying. On some foreign exchanges, one stock option represents 50 shares, so 1oo = 50 shares. To maintain consistency throughout the book, the quantity of underlying will be expressed as if it were an option contract equivalent, that is "10 underlying contracts" will be expressed as "10oo" meaning either 1000 shares of U.S. stock, 10 futures contracts (one futures contract is delivered upon exercise of a futures option), or 150 shares in the case of a 3 for 2 stock split where the option's contract specification has been altered.

[3] **Naked**

A short naked position has open-ended exposure, that is, with undefinable, unlimited risk. However, short naked put exposure is limited to the strike price minus the premium collected.

and purposes, a covered write[4] *IS* a short put. A complete consciousness of the consequences of a position beforehand is essential. No matter how the position is viewed (including synthetically), the trader should be happy with it, know approximately how long he wants to remain in the trade, and know how he will handle it under profit and loss scenarios. It is also important to be aware of the 'reason' one is in a trade and only remain in the trade if that 'reason' remains valid.

ANOTHER WORD ABOUT COVERED WRITES

The above covered write example describes this extremely popular strategy (most common in the equity market). The covered write consists of long an underlying instrument and short a call. The package emulates or is synthetically a short put.

Out-of-the-money calls are usually written during a given expiration month against[5] each 1oo shares of stock to enhance the investor's rate of return. The premium collected is an enhancement if the call expires worthless and the stock is the same price or higher. It is also an enhancement if the call is assigned (exercised) when in-the-money because the writer's total proceeds on the sale of his or her shares is the strike price plus the premium collected and that had to have been greater than the available stock price at the time of the call sale. It would not turn out to be an enhancement if the call expired worthless while the stock declined an even greater amount than the premium collected.

This is why covered writes are not suitable for everyone. There are risks to the downside. It can suit long-term retirement account investments as well as widows, orphans and other *trust-funders* very well, that is, shareholders who never intend to sell their stock. Position dissection will help here as well, because as the strategy is working out profitably, the cheap out-of-the-money put that the covered write is equivalent to, will reach a point when it is not worth it any longer to remain short it. That is the time to roll the call to collect a greater worthwhile premium to optimize the income enhancement process that covered writes intend to be.

It was a very popular strategy during the bull market of the 1980s, but unfortunately brokers were putting the wrong kind of clients into the covered writes. It is not prudent for some investors to initiate long stock/short call positions as a spread. If a broker had asked these same people whether they would have liked to sell puts naked, they may well have hung up on them. These positions added fuel to the 1987 crash because they created more positions that had to be liquidated or required new hedges, which helped to create selling pressure and panic.

A covered write offers a limited amount of protection and is inadequate in a severe market decline. The sad truth is that many of the brokers themselves were shocked when they realized just how inadequate these so-called hedges were. I would not call a covered write a "hedge", although it can be a reasonable strategy for some people.

It is important to understand the nature of risk and the synthetic properties that are inherent in options. People too often look at how much they can win and not often enough at what they can lose. This approach has made many people rich, but it is unfortunately only a matter of time before the market eventually ruins those who carry positions that they were not prepared to deal with under different scenarios. Traders often suffer from tunnel vision and lose sight of the fact that they hold a position on a security that they never wanted. It is usually too late to act by the time that they realize this.

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[4] **Exception for Covered Write vs. Short Put**

A short put differs from a covered write when a stock is involved in a merger, buyout, or special dividend. In such a case, a person short the put would not participate in some benefits that a shareholder would. In a partial tender offer, where part of the purchase is with stock and part is with cash or other instruments, there can be a wide disparity between the synthetic relationships (see "*Stocks* Involved in Tender Offers" in Chapter 8). Briefly, it would be more profitable to have the covered write in the case of a partial tender offer than a short put.

[5] **Against**

Against is synonymous with *versus*, meaning "offset" or "hedged". If I have long deltas with one set of contracts and short deltas to offset them using other contracts, it is said that the first set of contracts are "against" the second set.

LOCKS

Synthetics are most useful to arbitrageurs who look for opportunities to purchase one instrument cheaper than they sell another or to purchase a combination of instruments that emulate and/or offset their initial purchase, with the intent of profiting from a mispriced relationship. Some arbitrages or "arbs" involve straightforward strategies while others, such as those that involve interest and dividend streams, may be somewhat complicated and non-transparent[6].

To make the best possible use of synthetics and dissection as tools for trading derivatives, one has to have an understanding of the properties pertaining to locked positions or locks. Lock is a term used to describe a position that has locked in a profit or a loss and theoretically cannot lose any money from that point forward. Spreads that are commonly referred to as locks are conversions/reversals, boxes, and jelly rolls. Boxes and jelly rolls are a combination of the conversion/reversal. This explanation of locked positions will therefore concentrate on the conversion/reversal. Since a conversion is the exact opposite of a reversal, the spread will sometimes be referred to as a conversion/reversal (C/R) when it is not specifically one or the other.

SYNTHESIS: USING A CONVERSION/REVERSAL (C/R)

#1, There is a 90% chance that you will never trade a conversion or a reversal or, for that matter, a box or a jelly roll.

#2, Having the C/R consciousness will greatly enhance insight and help one's options trading.

#3, The next eight pages only prove the point about synthetics and give one confidence that dissection is the key to understand options.

A conversion is a spread consisting of long underlying, long put, and short call with the same strike at the same expiration ($+ u + p - c$). A reversal is the opposite or counter-party spread, consisting of short underlying, short put, and long call ($- u - p + c$). Notice that a reversal is the reverse of a conversion. This means that if two parties trade this spread with each other, one would end up with the conversion and the other with the reversal. If the trade is executed at 'fair value', there will be no profit or loss. The object for a market maker is to trade into the conversion or the reversal at better than fair value, locking in a favorable value, for a profit.

CONVERSION / REVERSAL VALUE EQUATIONS

To set the stage, Market Makers come to work to get "Edge".

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[6] **Non-transparent**

A nontransparent value is one that has other income or expenses associated with it and is not clearly visible, e.g., if you buy stock today and hold it for one year, the cost is greater than the purchase price today because you are either forgoing the interest (implicit interest) on the money you paid or you have to borrow money to buy it with and pay interest on that. Of course, if you receive dividends, your cost is reduced by that amount.

Analogy: The Edge as Defined by Airport Banks: A tourist lands at Heathrow Airport in London and needs to buy the local currency, British Pounds (BP). The currency exchange banks provide buy and sell prices. They also charge a commission for the transaction (adding insult to injury). For example, the price to buy one BP is $2.00 and $1.80 to sell one. Therefore, you could say that one BP is fair valued[7] at about 1.90, which is the average between the buy and sell prices. As travelers exchange their money back and forth, the bank is buying on the bid and selling on the ask price all day long and is making as much as $.10 (edge) on each transaction. If they develop a sizable position one way or another, they pass the position on to the currency traders who then hedge it by getting a price in the foreign exchange market, which is much tighter.

The buy-sell pricing mechanism for banks is the same as the bid-ask spread for options market makers. This is how traders hope to make their profit. Every market maker in the world would be ecstatic to get a trade with that much profit ($.10), because by the time the banks lay their risk off to the floor of the exchange in the futures pit on the Chicago Mercantile Exchange (CME), the bid−ask[8] has narrowed to 1.9000 bid, ask 1.9001 where the edge has been cut down to ($.0001). **End**

The conversion/reversal price should have a value similar to a forward contract's (OTC futures contract) value because it represents interest or interest minus the present value of the dividend flow until expiration. It can be positive or negative (+/−) and is expressed as a debit (paying out funds) or a credit (receiving payment). In other words, the C/R is a spread where the *stri***k***e* and **c***all* are traded (a strike is not traded but upon exercise the underlying is traded at the strike's price) against or versus (**vs.**) the **u***nderlying* and **p***ut*. The price is equal to either a small debit (paid) or a small credit (received).

C/R = (k + c) vs. (u + p)
where:
k is the strike price
c is the call price

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[7] **Fair Valued**

If the price were in terms of BP then the buy, sell and fair prices would be .5000, .5555 and .5263 which is what you get when you divide 1/2.00, 1/1.80 and 1/1.90, respectively.

[8] **Bid-Ask**

Keep in mind that one futures contract represents BP62,500 and that the average airport transaction is probably under $100. This more or less equalizes the edge on a per transaction basis. However, it depends on the total volume traded to determine which entity receives the greater profit.

u is the underlying price (stock, futures, bond, currency or index)
p is the put price.

The conversion/reversal price is equal to the difference between ($k + c$) and ($u + p$). Again, the *k* value, though not actually traded, is the price at which the underlying will eventually be transacted upon exercise. It is therefore accounted for in the computation of the spread price.

	Buy		Sell
The conversion *price* is:	$(u + p)$	–	$(k + c)$
	Buy		Sell
The reversal *price* is:	$(k + c)$	–	$(u + p)$

Suppose that in this example the C/R is theoretically worth zero (and it would be if the amount of quarterly dividend was equal to the cost of carry until expiration). The conversion $+ u + p - c = 0$, and the reversal $- u - p + c = 0$. Each is considered to be flat[9] by many traders. It is a break-even situation when the market maker (who competes to buy on the *bid* and sell at the *ask* price) for example, transacts all sides of the trade at fair value. If ($k + c$) and ($u + p$) are not equal, then a profit or loss is made. If either side of the equation is sold for a higher price than the other is bought, then the trader has locked in a profit. The following two examples illustrate profitable trades. Each generates a .25 credit (received) on the three-legged transaction, that is, a profit. The option prices in the examples are different for the reversal than they are for the conversion only for the purpose of illustrating these profitable endeavors.

If they were the same then one of the trades would have had to have been done for a .25 debit (paid), that is a loss.

For the following examples, assume that the theoretical values (TV)[10] for the 100 strike options at the stock price of 101.00 are 2.00 for the call and 1.00 for the put.

Reversal example:
The *c* is bought at 1.85 when the market is 1.85 (bid) – 2.15 (ask)
The *u* is sold (shorted) at 101.00
The *p* is sold (shorted) at 1.10 when the market is .90 – 1.10

Consider that the *k* is bought at 100.00 (because it will be traded at 100 at expiration). It represents the stock's purchase price at expiration because the trader will either exercise the 100 call if it is in the money or be assigned on the 100 put if, on the other hand, it is in the money. So:

$k + c$	versus	$u + p$
100 + 1.85 paid	and	101.00 + 1.10 received
101.85 debit	against	102.10 credit
	Net Result: .25 credit	

Therefore, the net result is a reversal that has been executed for a .25 credit (received). Since *k* and *c* were bought for a cheaper price than *u* and *p* were sold for, the reversal was traded for a profit.

Conversion example:
The ***c*** is sold/shorted at 2.15 when the market is 1.85 (bid) – 2.15 (ask)
The *u* is bought at 101.00
The *p* is bought at .90 when the market is .90 – 1.10

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[9] **Flat**

Conversions and reversals are not always flat with respect to the Greeks or any other exposure (see Chapter 8). C/Rs are really flat only if the option contract is designed with futures-style margining, and the underlying is a future. With futures-style margining, a fraction of the full amount of the purchase or sale price of the options can be margined with U.S. Treasury bills instead of using cash. Interest would not be a factor because there is no cash flow. In this example, the dividend, although not specified, happens to be equal to the present cost of carry so that for today: $k + c = u + p$.

[10] **Theoretical Value**

An estimated price of a call or put derived from a mathematical model, such as the Black-Scholes or binomial or Whaley models.

Consider that the *k* is sold at 100.00 (because it will be traded at 100 at expiration). Again, it represents the stock's sale price at expiration because the trader will either be assigned on the call if it is in-the-money (ITM), or exercise the put if it is in-the-money. So:

k + *c*	versus	*u* + *p*
100 + 2.15 received	and	101.00 + .90 paid
102.15 credit	against	101.90 debit
	Net Result: .25 credit	

Therefore, the net result is a conversion that has been executed for a .25 credit (received). Since *u* and *p* were bought for a cheaper price than *k* and *c* were sold for, the conversion, in this opposite example, was traded into for a profit.

At this point, there is very little to worry about for a while but by the time expiration approaches, pin risk[11] may become a problem and perhaps there will be an opportunity for an early exercise depending on where the stock is trading at the time. Details on these factors and more are discussed in Chapter 3.

PUT-CALL PARITY

Put-call parity is a term used in option pricing models to describe the relationship between puts and calls. If you have the call or put price you could derive the other by using the C/R equation. Position dissection uses it to prove that a dissected position has the same risk profile as the original raw position. To show you a simple way to demonstrate the put-call parity, I will use the fair values from the last example for a conversion (+ *u* + *p* – *c*). The call price is 2.00, the put price is 1.00, and the underlying is 101.00. More scientific approaches can be found in other options books that emphasize the mathematical equations[12]. Here is a simple way to understand that this conversion basically does not make or lose anything by expiration, irrespective of where the underlying settles, at the closing bell, owing to the put-call parity.

By performing "what-if" analyses (taking values at expiration), it can be determined that the position breaks even at all levels. Begin by checking, for example, at 101.00 (the current stock price), 100.00 (the strike price), 102, and then twice the strike price at 200.00 and half the strike price at 50.00. What will be the theoretical value and P&L, at expiration, at each of these price levels for the three instruments traded? What is their sum? If the sum is zero, then it simply means that there is no profit or loss, proving that the position was indeed, flat.

In Exhibit 1–1, the theoretical value at each of the test levels is shown. If the option is in the money, it is worth the intrinsic value, which is the difference between the strike and the underlying price. If the option is out of the money, it is worthless. Remember that the underlying was bought at 101.00, the 100 put was bought at a fair value of 1.00, and the 100 call was sold at a fair value of 2.00.

The trade in Exhibit 1–1 will be worth zero at expiration. It follows that if either spread in the previous reversal and conversion examples was executed for a .25 credit, there would be a .25 profit. Notice also that the mnemonic, CUP can be used to remember this type of what-if example. How full will your CUP be after the trade?

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[11] **Pin Risk**

The risk to a trader who is short an option that, at expiration, the underlying stock price is equal to (or "pinned to") the short option's strike price. If this happens, he will not know whether he will be assigned on his short option. The risk is that the trader doesn't know if he will have no stock position, a short stock position (if he was short a *call*), or a long stock position (if he was short a put) on the Monday following expiration and thus be subject to an adverse price move in the stock.

[12] **Mathematical Equations**

Option Pricing and Investment Strategies by Richard M. Bookstaber, 3rd ed. pp. 28–29.

EXHIBIT 1–1

+u at 101 / + 100p at 1 / – 100c at 2 (The slashes "/" represent position separators).

	@ 50 TV	@ 50 P&L	@ 100 TV	@ 100 P&L	@ 101 TV	@ 101 P&L	@ 102 TV	@ 102 P&L	@ 200 TV	@ 200 P&L
c	0	+ 2	0	+ 2	1	+ 1	2	0	100	– 98
u	50	– 51	100	– 1	101	0	102	+ 1	200	+ 99
p	50	+ 49	0	– 1	0	– 1	0	– 1	0	– 1
sum		0		0		0		0		0

In reality, there is no need to trade out of a lock because it will all go away at expiration[13], unless the underlying causes the strike to be at-the-money creating a pin risk situation. Consider the calculations in Exhibit 1–2. Unlike the last example, this assumes an exercise of the in-the-money option. At expiration there is an exercise (X). The trader delivers the stock, manifesting a trade, at *k* (at the strike price: 100.00).

EXHIBIT 1–2

Exercise to Deliver the Underlying Stock at a Sales Price of 100

+u at 101 / +100p at 1 / – 100c at 2 / –k at 100

	@ 50 TV	@ 50 P&L	@ 100 TV	@ 100 P&L	@ 101 TV	@ 101 P&L	@ 102 TV	@ 102 P&L	@ 200 TV	@ 200 P&L
c	0	+ 2	0	+ 2	X	+ 2	X	+ 2	X	+ 2
u	50	– 51	100	– 1	101	0	102	+ 1	200	+ 99
p	X	– 1	0	– 1	0	– 1	0	– 1	0	– 1
k	100	+ 50	no X*	0	100	– 1	100	-2	100	– 100
sum		0		0		0		0		0

*Pin Risk. Assume no exercise and cover short stock at 100

The premium of the exercised option is kept or retained for a short option and lost or forfeited for a long option. Notice that the end result is again zero, which proves that this particular conversion was flat.

Breathe. Do the following exercises.
When you are finished, return to your email for the link to the answer key.

[13] **Automatic Exercise**

Options .25 ITM are automatically exercised. Don't forget otherwise.

Risk Doctor Exercises for Part 1

1. **Why do Traders lose money?**

A. Simply, they have a wrong opinion of the market in a game where money is made and lost based on opinions.
B. Traders lose their discipline and the patience to follow their own rules. They may have a pattern of riding losing trades, coupled with taking profits too soon on winning trades.
C. Investors have an insufficient understanding of the nature of a position's risk and where opportunities present themselves to optimize the position as the underlying fluctuates over time.
D. All of the above.

2. **Why should I understand the concept of the Reversal / Conversion? (Choose all that apply)**

A. R/C is another strategy to make money
B. It is how the pros make big money
C. It is the primary building block for position dissection
D. It identifies the synthetic relationship of calls to puts

3. **Will I ever trade into a reversal or conversion?**

Yes or No

4. **Should I try and put one on?**

Yes or No

5. **If I am struggling to grasp the concept should I keep studying it until I have mastered it?**

    Yes or No

6. **Why does it advantageous to understand the concept of the Reversal / Conversion (C/R)? Will I ever trade one? Should I try?**
    A. They are pretty interesting to understand C/R, trade them and work them into your overall game plan.
    B. Because it is the fastest way to determine the synthetic nature of a position, although one may trade into a C/R one should not ever try to.
    C. Because it is a better way to position, professionals trade them and, absolutely, one should aspire to trade like a pro.
    D. Because Conversion / Reversals can be very profitable to trade and to learn as much as possible about them.

7. **Which is the better trade, from a risk / reward, standpoint? Why?**
    (2 Months until Expiry, Interest Rate is 6% for Debit or Credit Balance, No Dividend)
    A. Short 1oo Shares @ $100. 00, Long 2*100 Calls @ $6.00
    B. Long 1 Straddle @ $11.00 (Long 1 * 100 Call @ $6.00 and Long 1*100 Put @ $5.00)
    C. Long 1oo Shares @ $100.00, and Long 2*100 Puts @ $5.00
    D. All about the same