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Hello Traders!

Welcome to Top Gun Options and congratulations on joining the "Top Gun Options Program". You are about to launch into an options training course that will train you to be the best of the best in the options trading world. Once you have conquered the next three training courses, you will be a combat-ready options trader!

Options can be a confusing and intimidating for those that jump into the arena without preparing properly, not to mention unprofitable. We know because we've made this mistake a time or two and we don't want you to make the same mistakes we have! So we built Top Gun Options. Before we talk about the syllabus, let us tell you who we are.

Prior to starting Top Gun Options the founders flew FA-18 Hornets for the United States Navy. Between us, we have accumulated over 8,000 hours of flight time: many of those hours in actual combat. Over the years we have learned to apply the Discipline, Risk Management and Superior Execution techniques of flying fighters to the art of trading. This is the foundation of Fox3 Option trading and training: Discipline, Risk Management and Superior Execution. The US Navy takes an individual who has never touched the controls of an airplane and turns them into a steely-eyed fighter pilot successfully launching from aircraft carriers into combat in less than 2 years. It will not take that long to learn options, but we apply the same teaching and learning techniques to our training program to help you become an accomplished options trader in record time.

Remember, as we discussed in Options Indoc (OI), Top Gun Options takes a building block approach to teaching options. If you have tried to learn options on your own, you have probably found bits and pieces of information all over the place; “free” on the internet, books by purported successful options traders, financial television program or any number of places. There may be big gaps in your options knowledge and you don’t realize it; Top Gun Options solves this problem. We will build a solid foundation on the fundamentals and once that is done, we will start to dig into several option tactics applying the fundamentals and key disciplined execution parameters.

The Top Gun Options is a four phased approach to building your option trading knowledge and skill. The first phase you have already completed, Options Indoc, and it is a prerequisite for Top Gun Options. The second phase, the phase you are about to start, is Primary Options. Primary will teach you the key fundamentals and introduce 5 option tactics that
will allow you to make successful trades in any type of trending market, whether it be an up, down or sideways market. Following the Primary phase we will go on to the Intermediate and Advanced phases. Both of these will introduce more complex option tactics while continuing to drive home the fundamental and trading disciplines of Fox3 Options.

Let’s focus now on Primary Options. Primary is all about learning the fundamentals. The first seven lessons will focus on what makes options tick, what we use to analyze an option and how to use these items to plan your trades. During Options Indoc you probably thought to yourself that there has to be more to it than just calls and puts. And you were right, calls and puts are the core of the options trading but there are many more things out there that we need to learn. Understanding the primary fundamentals is essential to becoming a successful options trader. Our discussions will include:

1. How to read an option chain.
2. The Moneyness of options.
3. The intrinsic and time value of options.
4. The factors that affect an options premium.
5. Option Greeks.
6. Option Volatility.
7. Trade Planning.

Once we have covered the fundamentals, we will jump into a few option tactics that are simple for beginning option traders to grasp and execute. Options can open a trader up to significant risk if traded improperly, throughout Top Gun Options we will teach you how to control your risk. In Primary, we will introduce tactics that are simple to set up and have limited risk or are hedged with cash or stock. These positions include:

1. The Long Call.
2. The Long Put.
3. The Protective Put.
5. The Covered Call.

These tactics are among the most popular and simplest to execute for all traders from a novice to an advanced options trader. These positions are characterized by limited risk and/or they are hedged with cash or stock, allowing us to actively control our risk. They also offer several sophisticated ways to juice up your portfolio. In these lessons we will apply the fundamentals to these trades and also build trade plans that will allow us to trade with Discipline, sound Risk Management and ultimately lead to Superior Execution.

What do we need from you?

Ultimately, the time it takes to learn about options trading is up to you. We will provide all the teaching and learning materials, but you must provide the motivation and desire. We must work as a team in order for your options education to be successful and ultimately profitable! So, we need the following from you:

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Attitude: A good attitude toward learning options is the key! Buying and selling options are not the same as buying and selling stock therefore there is a learning curve. It will take focus and a positive learning attitude to build this trading skill. But, if you want to be a more sophisticated trader it takes the right attitude: keep the end state, the carrot, in focus because we will get there.

Commitment: Learning this program is not a 20 minute discussion, it is many hours of reading, webinars, and practice. It’s not going to happen with one webinar or one trade. Your investment in effort and time will pay off. Many new option traders will spend months trading in a paper account before tackling with real money. It is all up to your level of commitment and comfort with options before you start trading with real money.

Get a Paper Trading Account: A paper trading account is essential to learning options. Paper accounts allow you to practice or test option tactics before actually using real money. Any good options broker will offer a paper trading account. Finding an options broker can be a confusing endeavor if you have never traded options before. There are several good options brokerages. The two you will see in Top Gun Options are:

1. Trade Monster, www.trademonster.com
2. Think or Swim, www.thinkorswim.com

These brokers offer a good selection of research and option trading tools. They also allow you to open paper accounts without funding a cash account. If you decide to stay with them, they offer reasonable commission structures when you fund and begin trading. You can also do a Google search for option brokers if these two don’t seem like they are what you want. After completing Top Gun Options, you will have a much better understanding of your brokerage needs and you can always change. The important thing, get a paper account because you will want to test what you are learning.

Once again, Welcome to Top Gun Options! We have some work ahead of us, but the outcome will be well worth effort. The skills you learn throughout our training will take your trading to higher level of sophistication and versatility. The Fox3 team is honored you have chose us for your options education and we will deliver!

So, strap on your learning hat and let’s get started!
Lesson 1

Options Chains

One of the more intimidating things for the beginning options trader is deciphering an options chain. This is for good reason because there is a ton of information on an option chain. However, with a little practice and understanding, reading an option chain is a snap and you can glean all the information you ever wanted to know about an option from them.

Part of the confusion in understanding option chains is that, not only is there a lot of information, but every option chain looks a little different. If you go to Yahoo, MSN, CBOE, or your brokerage account and pull up an option quote, you will notice that the layout of each option chain is not quite the same. To the uninitiated this can be frustrating, but essentially they all have the same information displayed. We will use a few different examples throughout Top Gun Options to get you accustomed to seeing different formats.

In this short lesson we will decipher a basic options chain, to include:

1. Defining an option chain.
2. Learning some of the various option chain columns.
3. How to read an option chain

As you progress through Top Gun and learn option fundamentals you will be able to tailor your broker’s chain to suit your trading needs.

Defining an Options Chain

An option Chain is just a way to list the quotes of traded options for a given underlying security. Chains are also referred to as option quotes. Information that pertains to a specific option at each strike price and expiration is listed, such as:

- Strike prices
- Bid and Ask prices
- Volume
- Open Interest
- The Greeks
- Marks
- And much more

Many brokerages let you customize the layout and information displayed on the option chain. This can be helpful in customizing a chain to suit your trading style.
Option chains to the inexperienced appear to be a sea of numbers that can be intimidating to sort through. Compound this with the fact that many option chains are formatted slightly different and they can be quite confusing.
The Columns

We will look at an option chain for INTEL Corp (INTC) from my Options Monster Account, figure 2. This is a traditional format and gives us a good amount of information in an easy to use format.

Let’s take a quick tour around this chain and then we will look at each column individually. Along the top of this particular chain, the underlying stocks most recent price information, including the most recent bid and ask prices, bid and ask size and current volume are displayed.

Expiration Months are listed horizontally across the top of the option chain just below the underlying quote. In this format we can select several different expiration months. In this case, we are looking at a list of the call and put options that expire the 3rd Friday of May 2010; these are referred to as the “May options” or “May strikes”. We can select several months at the same time for comparison or just display a single month individually.

In this format, strike prices are listed down the center. The strike price is the price at which the stock can be bought or sold if exercised or assigned. This is a short list of strikes closest to the price Intel is currently trading. You will also have the ability to view all the strikes for a particular security if desired, in which case you would have a few dozen strike prices listed.

Each stock option chain will list all the call options and all the put options for the particular stock. Depending on which option chain you are looking at, the call options may be listed above the put options or sometimes the calls and puts are listed side-by-side, as they are here, calls on the left and puts on the right. The key here is to make sure you know what you are looking, puts and/or calls, it would be bad to mix them up.

Let’s look at the columns from left to right...notice that the columns are the same for both call options on the right and put options on the left...
**Bid**
The price that current buyers are willing to pay for a specific stock option at a particular strike and expiration. It’s like buying a product at an auction, which is exactly what the market maker is doing; you bid (i.e. make your offer) of what you are willing to pay.

When you are selling an option contract, this is usually the price you look at to see what the market is willing to pay for the option.

**Ask**
The price that a seller is currently willing to accept for that particular stock option. This is the price the seller is "asking". So when you are buying an option contract this is usually the price you will pay for the stock option if you do a market order.

**Market Price**
The price the market is willing to pay without limitations. For a buyer this would mean that you will pay the ‘Ask’ and for a seller you will receive the ‘Bid’.

*Note:* Remember one stock option contract controls 100 shares of stock. So whatever Bid/Ask price you see has to be multiplied by 100. This will be the actual cost of the contract. For example, if you wanted to buy 1 INTC May 22 call contract you would pay $68 dollars. Recall from options indoc that you would want INTC to be above its breakeven 22.68 by May expiration to make a profit.

**Bid Size**
The bid size just tells us the number of contracts currently offered for purchase at the bid.

**Ask Size**
The ask column tells us the number of contracts currently offered for sale at the ask.

A comparison of the bid and ask size can be good indicator of supply and demand. If the bid size is less than the ask size, then this could indicate an oversupply and we could see some selling pressure. This is not conclusive, but should lead an astute trader to checking their technicals.

**Volume**
Volume simply tells us how many stock option contracts are traded throughout the day.

**Open Interest**
Open Interest lists the total number of option contracts still outstanding. These are contracts that have not been exercised, closed, or expired. The higher the open interest, the easier it will be to buy or sell the stock option because it means a lot of traders are trading this stock option. Open interest is a good indicator of liquidity of the particular option, the higher the open interest the more liquid. In general, anything over 100 is considered liquid.
Remember that a contract represents an agreement between 2 people and open interest is the number of contracts outstanding. So, if there are 1000 contracts currently open, there are 2000 traders involved in the particular option.

These are the basic columns of an option chain. Many brokers will have the ability to add many more columns and display many pieces of useful information.

Figure 3

Figure 3 is the Call side of the same Intel chain with all the available columns displayed. At the moment all this information probably looks Greek to you! When we get through the fundamental, this will all make sense, including how to speak Greek!

Reading a Chain

As you get comfortable with option chains you will be tempted to move through them rather quickly, which can lead to simple, but critical mistakes. Like buying a put when you meant to buy a call, picking the wrong expiration month ...etc. So it is important for you to build a habit pattern early when digging through a pile of option chains. Here are a few simple tips, when you pull up a chain verify the following:

1. Underlying.
2. Expiration months
3. Strike Prices

Before pulling the trigger and buying or selling an option, verify:

1. Underlying.
2. Put or Call
3. Strike
4. Expiration.

These simple scans will save you from making stupid mistakes. Check and double check before making a trade that you have exactly what you want. When rifling through a sea of numbers, it is easy to click the wrong option.
Wrap up

Once you get comfortable with option chains it will be a snap to get all the information you need. I recommend looking at many different option chains to get a feel for the varying formats, check out the Yahoo, MSN and CBOE formats ...the information is the same, just presented slightly different from chain to chain. Remember practice first!!

Lesson 1 Quiz

Reference the following Exxon Mobil (XOM) Option Chain to answer the quiz.

1. What is the market willing to pay for the XOM April Call 70 Strike?
   a. 54 cents.
   b. 52 cents.
   c. $4.60.
   d. $4.70

2. What is the market willing to pay for the XOM April 65 Put?
   a. $1.60
   b. $1.64
   c. $2.50
   d. $2.54

3. What is the market price of an XOM 65 Strike Call contract?
   a. $250.00
   b. $2.54
   c. $254.00
   d. $160.00

4. How much would a trader receive per share for selling the XOM 60 Strike put at the market price?
   a. $6.35
b. 50 cents.
c. $6.45
d. 48 cents.

5. How many contracts are open with the XOM April 65 Strike Call?
   a. 21,298
   b. 2280
   c. 99
   d. 42,596

6. How many traders are involved in the XOM April 65 Strike Call?
   a. 2280
   b. 99
   c. 42,596
   d. 21,298
Lesson 2

Moneyness

Options certainly have their own language and as blossoming options traders we must learn to speak options before we trade them. When listening to people talk about options you will often here them use terms like, “At the Money”, “Out of the Money” or “In the Money”. These terms are collectively referred to as the “moneyness” and play an important role in the strike prices we choose when entering an options position and in many of our trade management decisions.

Moneyness is a simple concept once you grasp it and will be discussed and referenced in virtually all of our lessons going forward. So, now is the time to figure it out.

In this lesson we will define moneyness and what it means to be In the Money (ITM), At the Money (ATM), and Out of the Money (OTM) for both calls and puts.

Defining Moneyness

In the options world, the term “Moneyness” is used to describe the relationship between the current trading price of the underlying asset and the strike price of an option. At Fox3 we refer to the underlying asset as the Target, but we do use both terms interchangeably.

The Degree of moneyness lets us know if the option has any real value. There are three possible values for moneyness,

“In the Money”, abbreviated as “ITM”
“At the Money”, abbreviated as “ATM”
“Out of the Money, abbreviated as “OTM”

These terms have the same meaning for both calls and puts, but the relationship of strike price to the price of the underlying is different. We will look at each of these values and see how Moneyness is determined for both calls and puts.

In the Money (ITM)

In the money certainly sounds like it must be a good thing, but sometimes it is and sometimes it isn’t. It just depends on what side of the trade you represent. If an option is “In the Money”, it has real value, but the actual position may or may not be profitable for the holder of the contract. It simply means that if the option expires when it is ITM, the holder of the option will receive some benefit for the position. The benefit might be in the form of cash for their position or by exercising the option and buying the stock at their strike price. Let’s look at what it takes to be ITM.
For a call option to be ITM the strike price must be less than the current market price of the underlying asset. For example, if the current price of an underlying is 75 dollars and we hold a call option with a strike of 70 dollars, then we are ITM by 5 dollars. The 5 dollars we are ITM represents real value of an option. If we were to hold this option to expiration we would either collect the 5 dollars or buy the stock for 5 dollars less than the current market price. This does not mean we are making a profit, but we are retaining some value. We will learn more about these circumstances in later lessons.

**Current Target Price = 75**  
Strike Price = 70  
Strike is 5 dollars ITM

“In the Money” means the same thing for puts, but we fly inverted with puts and the relationship between prices is the opposite. If the strike price of a put option is greater than the current market price of the underlying asset, then that option is said to be ITM. Remember, if we own a put contract, we want a stock to go down in price.

For example, if the current price of an underlying is 70 dollars and we hold a put option with a strike of 75 dollars; then we are ITM by five dollars. This ITM amount represents real value to the holder of the contract.

**Current Target Price = 70**  
Strike Price = 75  
Strike is 5 dollars ITM

In general, being in the money is good for the holder (buyer) of the contract, but bad for the writer (seller) of an option contract. If a position is in the money, the writer stands a very good chance of having their position assigned.

**Out of the Money (OTM)**

OTM is the opposite of in the money. OTM for a call option means that the strike price is greater than the current price of the underlying asset. For example, if the current price of an underlying is 70 dollars and we hold a call option with a strike of 75 dollars; then we are OTM by five dollars.

**Current Target Price = 70**  
Strike Price = 75  
Strike is 5 dollars OTM

OTM for a put option means that the strike price is less than the current price of the underlying asset. If the current price of an underlying is 75 dollars and we hold a put option with a strike of 70 dollars, then we are OTM by five dollars.

**Current Target Price = 75**  
Strike Price = 70  
Strike is 5 dollars OTM
Being out of the money does not necessarily mean we are losing money in the course of a trade. However, the option has no real value and if it expires OTM, the option will be worthless at expiration. If we are holder of a position that expires out of the money, then we are losing money, but if we are the writer, we are making money. This will all be clear at the completion of options primary.

At the Money (ATM)

An ATM option is where the strike price and current price of the underlying are exactly equal. Many time the strikes closest to the money are referred to as the at the money option, but in reality they are near the money or just slightly in or out the money. It is rare that a strike is exactly ATM, and usually occurs as the price moves throughout the trading day.

Current Target Price = 75
Strike Price = 75
Strike is ATM

Option Chains

Most option chains will delineate ITM and OTM in some way. In this particular option chain for Intel in figure 4, the ITM strikes are shaded differently than OTM strikes, note the inverted relationship between calls and puts.

ITM call strikes are all less than the current underlying price and the ITM put prices are all greater than the current price of the underlying. The strike in the middle, the 22 strike is the ATM strike. You can see that this strike is actually slightly ITM for the call and slightly OTM for the put; sometimes this is referred to as the “closest to the money strike.”

Terminology

A couple of variances in the terminology are “Deep In the Money” and “Deep Out of the Money” strikes. Deep ITM just refers to strike prices that are several strikes in the money from the ATM strike. Deep OTM refers to strikes that are several strikes OTM from the ATM
strike, sometimes referred to as “Far Out of the Money” options. These terms can be used for both puts and call.

Wrap Up

As you progress through the Top Gun Options Primary course you will get plenty of practical application using moneyness, if it is not clear yet, don’t worry it will all come together in no time. Moneyness plays an important role in trade decision making, both getting in and getting out of trades.
Lesson 2 Quiz

Reference the XOM option chain to answer the following Questions.

1. Which strike is closest to the money?
   a. 70
   b. 65
   c. 60
   d. 55

2. The 55 strike call is ITM by how much?
   a. $55.00
   b. $10.00
   c. $10.87
   d. $5.87

3. Which call strike is OTM?
   a. 70
   b. 65
   c. 60
   d. 55

4. Which put strike is ITM?
   a. 70
   b. 65
   c. 60
   d. 55

5. How much is the 60 strike put OTM?
   a. $10.87
   b. $5.87
   c. 48 cents
   d. $10.00
6. How much is the 70 strike put ITM?
   a. $4.13
   b. $5.00
   c. $6.13
   d. $4.60

7. How much is the 70 strike call OTM?
   a. $4.13
   b. $5.00
   c. $6.13
   d. 54 cents
Lesson 3

Intrinsic and Time Value

In our building block approach to learning options we have learned how to read a basic option chain and about moneyness. In this lesson we will get to apply both of these skills. In our last lesson on moneyness, you probably asked yourself: What is that portion of the premium that is not in the money called? This lesson will shed light on this subject.

In this lesson we will learn to speak more of the language of options and learn about the two parts of an option premium, intrinsic value and time value.

**Premium**

The premium is the price we pay to buy an option contract, “the ask”. Or the premium we receive to sell an option contract, “the bid”. The difference between the bid and ask is called the spread, we will learn more about spreads in a later lesson.

Remember from our lesson on Moneyness, that for a call, strikes that are less than the current price of the underlying are ITM and, for a put, strikes that are greater than the current price of the underlying are also ITM.

JPM is currently trading at $39.33. Look at the 38 strike call for JPM, to buy this call we would pay $2.26 per share totaling $226 for the contract. This strike is $1.33 in the money and the breakeven for this call is $40.26. This leaves 93 cents of premium that is out of the money. This part of the premium in known as **time value** and the $1.33 that is ITM is called **intrinsic value**. Intrinsic value is sometimes referred to as real value in an option.
Intrinsic value is simply the amount that a given strike is ITM for both puts and calls. To calculate the intrinsic value you just find the difference between the ITM strike and the current price of the underlying for both puts and calls.

Strike prices that are ATM or OTM have no intrinsic value, so their intrinsic value is zero. Intrinsic value is real value for an option, just as we discussed in our lesson on moneyness. If our option expires with any intrinsic value, we get real dollars back in our brokerage account. This does not always mean we are making a profit, but we could be and it's better than a sharp stick in the eye. We will learn how this plays out in later lessons.

Let’s calculate the intrinsic value for a call and put option using the option chain for JPM in figure 4:

<table>
<thead>
<tr>
<th>Intrinsic for the 38 Strike Call</th>
<th>Intrinsic for the 41 Strike Put</th>
</tr>
</thead>
<tbody>
<tr>
<td>39.33 Current Price</td>
<td>41.00 Strike Price</td>
</tr>
<tr>
<td>- 38.00 Strike Price</td>
<td>- 39.33 Current Price</td>
</tr>
<tr>
<td>1.33 Intrinsic Value</td>
<td>1.67 Intrinsic Value</td>
</tr>
</tbody>
</table>

Let’s choose the 38 strike call, because it is ITM. Determining intrinsic value is easy, we simply subtract the strike price 38 from the current price of the underlying of $39.33 and we find our intrinsic value of $1.33. This is the amount that the strike is ITM.

For put options, to find a strike with any intrinsic value, we have to pick a strike that is ITM as well, so we will pick the 41 Strike put because it is greater than the current price of JPM. Flying inverted with puts, we now subtract the Current price of the underlying from the strike price and find our intrinsic value of $1.67. This is the amount this strike is in the money.

That’s it, simple math. We just need to remember the inverse relationship between calls and puts or the math does not work. The part of the premium that is not in the money is called “Time Value” and is sometimes referred to as extrinsic value. For our lessons we will stick with time value.

Time Value

Time value is a subject we will spend a lot of time on in the next several lessons. As we go through Top Gun Options, you will see that time can either work for us or against us depending on our options position. Also, there are several factors that affect the time value of an option and we will learn about all of them in Primary Options. For now let’s just focus on calculating time value.

Options are decaying assets, meaning they have a finite lifespan and the lifespan ends at expiration. The more time we have until expiration the better our chances of an options position working in our favor. Since time is an asset for us the time has value and we pay for this time. The amount we pay for this time is represented by the time value portion of the options premium.
**Time Really is Money!**

Time value is simply the options premium minus any intrinsic Value. The premium for ATM and OTM options are all time value so no math is required. The total premium for ITM options is equal to Time Value plus the Intrinsic Value.

Calculating time value is the same for call and put option. Time value is the premium minus the intrinsic value for both calls and puts. Referencing our JPM option chain in figure 4:

<table>
<thead>
<tr>
<th>Time value for the 38 Strike Call</th>
<th>Time value for the 41 Strike Put</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>2.26</strong> Call Premium</td>
<td><strong>2.43</strong> Put Premium</td>
</tr>
<tr>
<td><strong>- 1.33</strong> Intrinsic Value</td>
<td><strong>- 1.67</strong> Intrinsic Value</td>
</tr>
<tr>
<td><strong>0.93</strong> Time Value</td>
<td><strong>0.76</strong> Time Value</td>
</tr>
</tbody>
</table>

For our 38 Strike call, time value equals the premium for the call of $2.26 minus the intrinsic value of $1.33, which gives us a time value component of 93 cents. Look at the premium for the 41-call strike, the 72 cent premium is all time value because the 41 strike call is OTM.

For our 41-strike put it is the same calculation, the put premium of $2.43 minus the intrinsic value of $1.67, which gives us a time value component of 76 cents. Take a look at the 37 strike put, again the 67 cent premium here is all time value because the strike is OTM.

**Wrap Up**

So, we now know option premiums are made up of two parts, **Intrinsic and Time Value**. If a strike price is ITM then it has both time and intrinsic value. But if a strike is ATM or OTM then intrinsic value is equal to zero and it has only time value.

Since options expire at a certain time, they are decaying assets. The time remaining in the lifespan of an option has value and we pay for this time. The more time remaining the more time we have for the option position to work for us, so it will cost a bit more money. Time value can work for us or against us and we will start to learn exactly how in the next several lessons.

In our next lesson in Options Primary we will learn about the factors that affect an options premium.
Lesson 3 Quiz

Reference the XOM option chain to answer the following questions.

### Calls

<table>
<thead>
<tr>
<th>Strike</th>
<th>Open Interest</th>
<th>Last</th>
<th>Volume</th>
</tr>
</thead>
<tbody>
<tr>
<td>65.85</td>
<td>3,626</td>
<td>16.00</td>
<td>50</td>
</tr>
<tr>
<td>11.00</td>
<td>1,237</td>
<td>11.73</td>
<td>35</td>
</tr>
<tr>
<td>6.35</td>
<td>17,278</td>
<td>6.40</td>
<td>60</td>
</tr>
<tr>
<td>2.50</td>
<td>21,298</td>
<td>2.50</td>
<td>66</td>
</tr>
<tr>
<td>0.52</td>
<td>42,304</td>
<td>0.54</td>
<td>70</td>
</tr>
<tr>
<td>0.08</td>
<td>53,398</td>
<td>0.09</td>
<td>75</td>
</tr>
</tbody>
</table>

### Puts

<table>
<thead>
<tr>
<th>Strike</th>
<th>Open Interest</th>
<th>Last</th>
<th>Volume</th>
</tr>
</thead>
<tbody>
<tr>
<td>65.85</td>
<td>10,181</td>
<td>0.09</td>
<td>40</td>
</tr>
<tr>
<td>11.00</td>
<td>20,467</td>
<td>0.17</td>
<td>13</td>
</tr>
<tr>
<td>6.35</td>
<td>43,130</td>
<td>0.48</td>
<td>25</td>
</tr>
<tr>
<td>2.50</td>
<td>49,687</td>
<td>1.59</td>
<td>62</td>
</tr>
<tr>
<td>0.52</td>
<td>17,776</td>
<td>4.59</td>
<td>76</td>
</tr>
<tr>
<td>0.08</td>
<td>9,422</td>
<td>8.97</td>
<td>92</td>
</tr>
</tbody>
</table>

1. What is the spread for the 55 strike call?
   a. 15 cents
   b. 7 cents
   c. 20 cents
   d. 55 cents

2. What is the intrinsic value of the 60 strike put?
   a. 48 cents
   b. $15.87
   c. $0
   d. $5.00

3. What is the time value of the 60 strike put?
   a. $0
   b. 50 cents.
   c. $15.87
   d. $6.45

4. What is the intrinsic value of the 65 strike call?
   a. $2.54
   b. $1.67
   c. $1.33
   d. 87 cents

5. What is the time value of the 65 strike call?
   a. $2.54
   b. $1.67
   c. 48 cents
   d. 87 cents

6. What is the time value of the 70 strike call?
   a. $4.13
   b. 87 cents
   c. 54 cents
d. $4.60
7. What is the intrinsic value of the 70 strike put?
   a. $4.13
   b. $5.00
   c. $6.13
   d. 54 cents

8. What is the time value of the 70 strike put?
   a. $4.13
   b. $4.70
   c. 48 cents
   d. 57 cents

9. T/F: Time value for OTM and ITM strikes is equal to zero.

10. T/F: ITM strikes have both intrinsic and time value.
Factors Affecting the Price of an Option

In our previous lesson we discussed the two components of the option premium, intrinsic and time value. To review:

*Intrinsic value* is the portion of the premium that is “in the money”, ITM. If a strike price is ATM or OTM there is no intrinsic value.

*Time value* is the amount of the option’s premium that is in excess of the intrinsic value.

Intrinsic and time values are pretty simple to understand and each is distinct in what they mean to the price action of option premiums. We will apply these concepts in the many lessons to follow.

As the market prices of equities fluctuate, so do the prices of options. In fact, even if the market remains neutral and our underlying stock remains unchanged, option prices will change. The question is, “how and why”? To begin our understanding, we will look at how options are priced and the factors affecting that price.

In this lesson we will look at some of the option pricing models used to value the premium of an option. Then we will breakdown the six factors that affect the value of an options premium. These factors are the inputs of the option pricing models.

**Option Pricing Models**

There are several option pricing models; we will look at just a few to have some knowledge of their history. The Black-Scholes, the Binomial and the Trinomial Options Pricing models are the most widely used. The use of these models is transparent to the trader because all we end up seeing are the premiums. The important thing is to understand the inputs, because all the models react the same to varying inputs. We will briefly review each of the models.

In 1973 gentlemen by the names of Fisher Black, Robert Merton and Byron Scholes developed the Black-Sholes Option Pricing Model as a way to determine the fair market price of financial options and actually won the Nobel Prize for their work.
The Black Sholes model is really pretty simple.

\[ C_0 = S_0 N(d_1) - X e^{-rT} N(d_2) \]

Where:
\[ d_1 = \left[ \ln \frac{S_0}{X} + (r + \sigma^2/2)T \right]/\sigma \sqrt{T} \]

And:
\[ d_2 = d_1 - \sigma \sqrt{T} \]

"The model assumes that the prices of heavily traded assets follow a geometric Brownian motion with constant drift and volatility. When applied to a stock option, the model incorporates the constant price variation of the stock, the time value of money, the option’s strike price, and the time to the options expiry."

OK...so it is not so simple and the binomial and trinomial are just as challenging to calculate.

The Black-Sholes pricing model has remained one of the more influential models for the current markets, but it does have some limitations with options regarding exercise and dividend payments. Primarily it is used to calculate the value of European style call and put options. European options can only be exercised at expiration; whereas American options can be exercised at any time. This makes American style options more flexible than European style and, hence, more valuable.

Addressing these issues were gentlemen named John Cox, Stephen Ross and Mark Rubenstein developed the Binomial Option Pricing Model in 1979. In creating this formula they followed the Black-Sholes model closely in creating the Binomial model.
The binomial model breaks down the time to expiration into a large number of time iterations. A tree of possible stock prices is produced, both above and below the current price at each time interval. Because it breaks down prices into time intervals, it is more accurate at predicting the value of American options that can exercised any time while the contract is open. The theoretical option value is calculated for each stock price in the tree. The amount the price moves up or down in the tree is based on volatility and volatility is one of the factors we will discuss in this lesson.

One of the drawbacks of the binomial tree is that it does not account for a stagnant stock at every time interval. The response to this problem was the creation of the Trinomial Option Pricing Model.
Figure 7, the Trinomial Option Pricing Model

The trinomial tree is put together the same way as the binomial tree except that an extra branch to the tree has been added. This extra branch accounts for stocks that remain stagnant and generates a theoretical option value at each time interval.

Options models generate what is called the "Theoretical Options Premium". The theoretical option premium is rarely if ever the same as the actual market value of an option. We will learn more about why this is the case when we go through our lesson on volatility.

The pricing models are interesting to look at and can make us sound smart at a cocktail party. From a practical sense, a trader does not need to understand the calculations involved. The calculations are done for us and put in simple formats making it easy for any trader to understand the effects of the factors on the price of an option. To be a successful option trader you do need to know the six factors that affect an options premium and how the premium reacts to them.

**Six Factors**

There are six factors that influence the price of an option and these are also the inputs to each of the option models.

1. The price of the underlying equity
2. The strike price of an option
3. Time until expiration
4. Volatility of the underlying equity
5. Stock dividends
6. Risk free interest rate
These variables are the input of the options pricing model and the output of the model is the option premium, more specifically the theoretical option premium. Premiums are affected by supply and demand for a particular option, a topic we will discuss more in lesson six on volatility.

These six variables remain in constant flux and affect the premiums we pay to buy or the premiums we receive to sell an option in various ways. As options traders we need to understand how each of these factors can affect the premiums or our options.

**Price of the Underlying**

The *price of the underlying equity* of an option usually has the biggest affect on premiums. This is because if the stock moves above or below a strike price it influences the intrinsic value of an option. Price changes have the opposite effects on calls and puts and the opposite outcomes for the holder and writer of an option contract.

For instance, the value of a call option increases as the price of an underlying equity increases.

<table>
<thead>
<tr>
<th>Price Action of Underlying</th>
<th>Price of a Call</th>
<th>Holder</th>
<th>Writer</th>
</tr>
</thead>
<tbody>
<tr>
<td>↑</td>
<td>↑</td>
<td>Good</td>
<td>Bad</td>
</tr>
<tr>
<td>↓</td>
<td>↓</td>
<td>Bad</td>
<td>Good</td>
</tr>
</tbody>
</table>

*Table 1 – Underlying price affect on call*

An increase is good for the holder and not so good for the writer of an option, table 1. Remember from options indoc that the buyer of a call has a bullish tactical mindset, so an increase in the underlying is good. The seller of a call option has a bearish mindset so if the underlying increases this is bad for the writer of the contract. Conversely, when the price of the underlying goes down, option premiums will decrease and this is bad for the holder and good for the writer.

<table>
<thead>
<tr>
<th>Price Action of Underlying</th>
<th>Price of a Put</th>
<th>Good for Holder</th>
<th>Good for Writer</th>
</tr>
</thead>
<tbody>
<tr>
<td>↑</td>
<td>↓</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>↓</td>
<td>↑</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>
Table 2 - Underlying price affect on put

Flying inverted with puts we see that a price change in the underlying has the opposite effect on a put option. As the underlying price rises, the value of a put falls. The buyer of a put option has a bearish tactical mindset so if the price of the underlying goes up this is bad for the holder. This is good for the writer as they have a bullish tactical mindset. If the stock goes down, then it is good for the holder, but bad for the writer of an options contract.

The price of a call or put option increases at a faster rate as the price of the underlying gets deeper in the money. This is affected by the options Delta, the subject of our next lesson. The strike price we pick is very important to the success of our trade and the ability of the underlying to move in the money and is the next input of the options model.
Strike Price

The *strike price* determines whether or not an option has any intrinsic value. Option premiums increase the further the option is ITM and decrease the further OTM, this is because of the intrinsic value and time value we discussed in the previous lesson.

**Figure 8 – FCX Options Chain**

**Call Strike Price**

Reference figure 7: Assume it is 1 FEB and we want to buy a FEB call on Freeport McMoRan (FCX). Freeport is a mining company and is the world’s largest publicly traded copper company. FCX is trading at 70.47, and the closest to the Money call, is the 70 strike, is selling at $3.15.

\[
\text{Intrinsic Value} = \text{Current Stock Price} - \text{Strike Price} = 70.47 - 70.00 = 0.47
\]

\[
\text{Time Value} = \text{Strike's Premium} - \text{Intrinsic Value} = 3.15 - 0.47 = 2.68
\]

The breakeven is $73.15, simply the strike plus the premium, but since this is ITM it is also the current stock price plus the time value. This means that the FCX has to climb $2.68, our amount of time value, for us to break-even and higher than that for us to realize any profit. As the price of the underlying moves in the money, our intrinsic value will change dollar for dollar.
dollar with the stock. If the stock moves out of the money, then we will have only time value in our options premium. If we carry the option all the way to expiration, we will earn only the intrinsic value of the option. If our intrinsic value is greater than $3.15 we make a profit, if intrinsic value is less than $3.15 we will get any intrinsic value back, but still lose in the position. Lastly, if it expires OTM we receive nothing and lose our premium.

The FEB 85 strike call is deep OTM and is only 13 cents, all time value. What a bargain right!? Well, not so fast. It is cheap but:

Intrinsic Value = 0, since we are out of the money, OTM

Time Value = $0.13 - $0.00 = $0.13

Breakeven = $85.00 + $0.13 = $85.13

Think of this in terms of probabilities, there is a much greater chance that FCX will gain the $2.68 and make a profit with our 70 strike call than there is that FCX will gain $14.66 or more so we can profit from the FCX 85 strike call. For this reason, the further out of the money we go with our strike price selection, the cheaper the price of the option. In short, you get what you pay for. This is what we refer to as a lottery ticket. If, by some miracle FCX goes up to 90 in 3 weeks our return will be tremendous, but very unlikely.

The FCX Feb 55 strike is deep ITM. This is a pretty expensive option selling at $15.70 or $1570 per contract.

Intrinsic value = $70.47 - $55.00 = $15.47
Time Value = $15.70 - $15.47 = $0.23

In this case we only need a 23 cent move to the upside for this call to make money. In terms of probabilities our chance of profit is much higher. The trade off is that our return on investment as a percentage of cash at risk will be lower. Again, you get what you pay for in options.

Notice what time value is doing with the three strikes. Time value is highest ATM and the further away from the ATM strike in either direction, the less time value the option. We will discuss this later in the chapter.

**Put Strike Price**

The same relationship to moneyness applies to flying inverted with puts

The Feb FCX 70 put is slightly out of the money and sells for $2.64. This is all time value which is largest at the money. The breakeven is $67.36, so we need a move down by greater than, $3.11. This is the current price of the underlying minus the Premium to be profitable.

Intrinsic Value = 0
Time Value = Premium minus the Intrinsic Value = $2.67 - $0 = $2.67
The higher the strikes the further in the money and the more expensive the options are because of the intrinsic value, but again the less they have to move to be profitable. The 85 strike put is deep ITM and costs $14.70 but only has to move of more than 17 cents downward to be profitable.

Intrinsic Value = Strike Price minus the Current Stock Price = $85.00 - $70.47 = $14.53

Time Value = Premium minus the Intrinsic Value = $14.70 - $14.53 = $0.17

The further OTM the less the cost of the option but the further the price has to drop to be profitable. The 55 strike put deep OTM and is only 16 cents per contract, but the stock has to drop more than $15.47 to be profitable. This is another lottery ticket, cheap but unlikely.

Again think of this in terms of probabilities...it is far more probable that the stock can drop 17 cents than it can drop $15.63 in order to make a profit. Again, you get what you pay for with options.

Also notice that the further away from the ATM strike, the less the time value component. This segues quite nicely into our time value discussion.
Time Value

Options are decaying assets and as we learned in our previous lesson, *time value* is affected by the time remaining to expiration. The more time to expiration the more expensive our option. This is because we have a higher probability that our underlying equity will move in our direction and become profitable. This means that as time passes, the value of our option decreases. This decrease in time value is known as *time decay*. Time decay increases more rapidly as we get closer to expiration.

![Time Decay Curve](image)

*Figure 9 – Time Decay Curve*

As we move closer to expiration the probability of getting the desired move out of our underlying equity decreases, so we pay less for the time. The closer we get to expiration the larger the effect of time decay and time decay actually increases exponentially in the last 30 days of an options life.

When we are in long positions, the holder of a call or put, time decay works against us. This is because we are looking for a move in the underlying during the time frame of the option. If we are currently OTM or ATM, as time to expiration gets closer we have less of a chance that the underlying will move ITM. Or if we are ITM, there is less of a chance of the underlying moving OTM.

When we are in short positions, the writer of a call or put, time decay works for us. As the clock ticks down the underlying has less time to move against us. Secondly, this also means the option we sold becomes cheaper and we can buy it back for less than we sold it for and
pocket the difference. Time decay is measured by Theta, a Greek component that we will learn about in next chapter.
Time Value and Moneyness

As I pointed out in our discussion of strike prices, the degree of moneyness, that is the further “in” or “out” of the money we go, also affects the time value of an option.

"The farther the option’s strike price is from the ATM strike, the lower the time value will be".

Think about this characteristic in terms of certainty, more specifically, the relative certainty that our strike price will finish ITM or OTM.

**For ITM options:** The deeper in the money that a strike price is, the more certain we are that our position will finish in the money, therefore the time remaining until expiration becomes less valuable. This does not guarantee a profit, as we will learn later, it just means we are more likely to finish in the money, in which case we will still have some intrinsic value in our option.

**For OTM options:** The further out of the money a strike is, the higher the certainty that the strike will finish OTM. So the time remaining becomes less valuable, because it does not give us a higher probability of being profitable. From the option seller’s perspective, there is much less risk writing a far OTM option. So, the premium collected is commensurate with the risk.

**For ATM options:** When the option’s strike price is at or near the money, there is greater uncertainty as to which direction the underlying’s price is going to go. It could go our way or not our way, 50/50 chance. So, the time we are buying gives us more opportunity to
participate and benefit from price swings in our underlying, hence the time value is more expensive.

Summarizing time value, the longer we have to expiration the more way for time. Option premiums decrease in value every day that passes due to time decay, all things remaining equal. The relative moneyness of a strike affects option premiums: the farther away the strike price is from the ATM strike, the lower the time value.

**Volatility**

The *Volatility* of an underlying equity affects the time value component of the options premium. We will take a cursory look at the two types of volatility we are concerned with trading options, but mainly focus on how it affects a premium. We will dig deeper into volatility in lesson six.

Volatility has a direct relationship to the value of an option: the higher the volatility the higher the value of the option and the lower the volatility the lower the options value. But what is volatility?

Volatility measures the fluctuation of an equity share price over time. Essentially, it tells us how active a stock has been in the past. Options also have their own unique volatility measure. There two types of volatility that concerns us: *historical volatility* and *implied volatility*.

**Historical Volatility** measures how volatile an equity’s share price has been in the past.

**Implied Volatility** is the volatility being implied by the market price of the equity’s option. In other words, it is how volatile the market “thinks” the underlying’s share price will be going forward and this is priced into the option premium.

<table>
<thead>
<tr>
<th>Implied Volatility</th>
<th>Option Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>Higher</td>
</tr>
<tr>
<td>Low</td>
<td>Lower</td>
</tr>
</tbody>
</table>

*Table 3 – Affects of Volatility*

The important thing to understand in the context of this lesson is that as implied volatility increases, the price of options increase and as implied volatility decreases, the price of an option decreases.

Intuitively this should be easy to understand, if the underlying is highly volatile there is a higher probability that the underlying’s price swings will produce a profitable trade. Hence, we will pay more money for it. If we are selling an option with high volatility, we are
assuming more risk that the price swings will produce an unprofitable trade. So, the seller will receive a higher premium for assuming this risk.

From an options trader’s perspective:

**Buy when volatility is low because options are cheap.**
**Sell when volatility is high because options are expensive.**

This means that we are seeking the best pricing for our option premiums. If we buy when cheap, we can benefit sooner from price moves in the underlying or an increase in volatility. If we sell when volatility is high, we receive more premium for the sale and can benefit as volatility decreases. Selling options involves high risk and should be hedged with cash, stock or another option. But high volatility offers great opportunities for option traders, as you will come to understand.

**Dividends and Interest Rates**

When we discuss the factors that affect an options premium, the big ones that most traders are concerned with are the price of the underlying stock, the strike price, the effect of time and the effect of volatility. Dividends and interest rate are less of a concern because the effects of an underlying equity’s dividends and the current risk-free interest rate (usually the T-Bill rate) have a small effect on option premiums.

This effect of dividends and interest rates reflect the “cost of carry” of shares in the underlying equity. The cost of carry is interest expense (interest not earned) and the dividends that would be received by owning shares outright.

**Dividends**

Cash dividends affect option prices through their effect on the stock price of the underlying. Stock prices drop by the amount of the dividend on the ex-dividend date. This makes sense because when a company pays dividends they are paying in cash and this payment reduces the company’s cash account by the amount of the dividend. Cash is an asset and the company has essentially given away an asset, so there stock price decreases accordingly.

The affect of dividends is generally very small. The reason is that even though the stock price undergoes a single adjustment by the amount of the dividend, the options market anticipates dividends in the weeks and months before they are announced and the market adjusts the prices of option premiums accordingly.

**Note:** Holding an option position on a dividend paying company does not entitle the holder the right to collect a dividend.

**Interest Rates**
An increase in interest rates will drive up call premiums and drive down the cost of put premiums.

<table>
<thead>
<tr>
<th>Interest Rates</th>
<th>Call Premium</th>
<th>Put Premium</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>↑</td>
<td>↓</td>
</tr>
<tr>
<td></td>
<td>↑</td>
<td>↑</td>
</tr>
<tr>
<td></td>
<td>↓</td>
<td>↑</td>
</tr>
</tbody>
</table>

*Table 4, Interest rate effects*

To understand this, we need to think about the effect of interest rates when comparing the purchasing of an option to just owning the stock.

Since it is much cheaper to buy 1 call option than a 100 shares of the stock, the call buyer is willing to pay more for the option when interest rates are higher. The call buyer can then earn interest on their money and significantly drive down risk. The cost to hold a stock position is built into the value of an option. This has to do with the idea of an option being a substitute of sorts for a stock position. It considers the fact that you would have to borrow money and pay interest on it or take cash out of an interest-bearing account to buy the stock and the interest cost is built into the option’s value.

The more expensive it is to hold a stock position from this perspective, the more expensive the call option. The expense of holding a stock position is the lost interest, higher interest means higher cost. There is no free lunch with options, as options prices account for this risk free return. So, an increase in interest rates increases the value of calls and decreases the value of puts. A decrease in interest rates decreases the value of calls and increases the value of puts.

Options trader will usually not concern themselves with the effect of interest rates, because adjustments are usually infrequent and have a small effect on premiums.

**Wrap Up**

Understanding the factors of an option premium and their relationship to options premium is critical to making profitable trades. To sum up the effects:

- Price of the underlying affects the intrinsic value.
- Strike price determines the moneyness.
- Time Value: Options are decaying assets and we pay for time. Time value is greatest ATM.
- Volatility has a direct effect on the price of an option.
- Dividends and interest rates generally have a negligible impact on option prices.

As we get further along in Option Primary we will manipulate some of the six factors to increase our chance of profitable trades.
Lesson 4 Quiz

1. T/F: Option traders need to be able to calculate the option pricing models

2. How many inputs are there to the option pricing models?
   a. 4
   b. 5
   c. 6
   d. 7

3. How does an increase in the price of the underlying affect the holder and writer of a call?
   a. Good for the Holder / Bad for the Writer
   b. Bad for the Holder / Good for the Writer
   c. Good for the Holder / Good for the Writer
   d. Bad for the Holder / Bad for the Writer

4. How does a decrease in the price of the underlying affect the holder and writer of a call?
   a. Good for the Holder / Bad for the Writer
   b. Bad for the Holder / Good for the Writer
   c. Good for the Holder / Good for the Writer
   d. Bad for the Holder / Bad for the Writer

5. How does an increase in the price of the underlying affect holder and writer of a put?
   a. Good for the Holder / Bad for the Writer
   b. Bad for the Holder / Good for the Writer
   c. Good for the Holder / Good for the Writer
   d. Bad for the Holder / Bad for the Writer

6. How does a decrease in the price of the underlying affect the holder and writer of a put?
   a. Good for the Holder / Bad for the Writer
   b. Bad for the Holder / Good for the Writer
   c. Good for the Holder / Good for the Writer
   d. Bad for the Holder / Bad for the Writer

7. An increase or decrease in the underlying has the biggest effect on which part of the option premium?
   a. Intrinsic Value
   b. Time Value
   c. Both
   d. Neither

8. As the strike price moves more ITM, what effect does this have on an options premiums?
   a. Decrease
   b. No effect
   c. Increases
   d. Can increase or decrease

9. As the strike price moves more OTM, what effect does this have on options premiums?
   a. Decrease

DISCIPLINE | RISK MANAGEMENT | SUPERIOR EXECUTION
10. T/F: Deep in the money strikes need a bigger price move than ATM strikes to be profitable.

11. Time value is more expensive for_______.
   a. OTM Options
   b. Put Options
   c. Call Options
   d. ATM Options.

12. T/F: Time value is more expensive the closer the option is to expiration.

13. How does time decay affect the holder and the writer of an option.
   a. Good for the Holder / Bad for the Writer
   b. Bad for the Holder / Good for the Writer
   c. Good for the Holder / Good for the Writer
   d. Bad for the Holder / Bad for the Writer

14. What happens to option premiums as implied volatility rises?
   a. Decrease
   b. No effect
   c. Increases
   d. Can increase or decrease

15. What happens to option premiums as implied volatility falls?
   a. Decrease
   b. No effect
   c. Increases
   d. Can increase or decrease

16. Cost of carry reflection of __________.
   a. Price of corresponding put or call option.
   b. Opportunity cost of lost interest and dividends.
   c. The seller’s position.
   d. The buyer’s position.

17. T/F: The effect of dividends is normally priced into options after the dividends are paid.

18. T/F: Interest rates generally have a negligible effect on option premiums.
Lesson 5

Options Greeks

In the previous lesson we dug deeper into option pricing to see what factors go into the price we pay or receive to open an options contract. Most of these factors behave differently for each option and the sensitivities of these factors are measured independently and can affect the profitability of our trades. In options lingo, these sensitivity measures are called the “Greeks”. The Greeks give us insight into how our option will behave in varying market conditions and allow us to proactively manage risk.

The Greeks are also referred to as “risk” metrics because they tell us how sensitive options premiums are in varying market conditions. These sensitivities are called the Greeks because they are referred to as Delta, Gamma, Theta, Vega and Rho. Vega of course is not a Greek letter, but in the options lexicon it is considered one of the Greeks.

In this lesson we will define each one of the Greeks and look at how they measure changes in option premiums based on the ebbs and flows of the market.

The Greeks are a product of the options pricing models and each Greek letter measures a specific sensitivity that influences the value of an option.

\[ \Delta \quad \text{Delta} \quad \text{Sensitivity to underlying price} \]
\[ \Gamma \quad \text{Gamma} \quad \text{Sensitivity of Delta} \]
\[ \Theta \quad \text{Theta} \quad \text{Sensitivity to time} \]
\[ V \quad \text{Vega} \quad \text{Sensitivity to implied volatility} \]
\[ P \quad \text{Rho} \quad \text{Sensitivity to interest rates} \]

As we go through this lesson we need to make the assumption as we begin our understanding of the Greeks, that we are holding all the other parameters equal for ease of explanation. Clearly in a dynamic market this is rarely the case.

**Delta** - \( \Delta \)

Delta is the option premium's sensitivity to changes in the underlying stock price. It measures the expected price change of the premium given a $1 change in the underlying stock.

Deltas are positive for calls and negative for puts. As stocks rise we add the Delta to the premium and as stocks go down we subtract the Delta from the premium. This means that...
as the price of the underlying rises the value for calls increase and the value for puts decrease. If the value of the underlying decreases the value for calls decrease and the value for puts increase. As we get into option selling tactics in later lessons we will discuss short position effects on Delta.

Let’s look at a couple of examples.

<table>
<thead>
<tr>
<th>Strike</th>
<th>Ask</th>
<th>Delta</th>
</tr>
</thead>
<tbody>
<tr>
<td>13.00</td>
<td>5.40</td>
<td>0.87</td>
</tr>
<tr>
<td>14.00</td>
<td>4.50</td>
<td>0.84</td>
</tr>
<tr>
<td>15.00</td>
<td>3.65</td>
<td>0.79</td>
</tr>
<tr>
<td>16.00</td>
<td>2.84</td>
<td>0.72</td>
</tr>
<tr>
<td>17.00</td>
<td>2.14</td>
<td>0.64</td>
</tr>
<tr>
<td>18.00</td>
<td>1.55</td>
<td>0.50</td>
</tr>
<tr>
<td>19.00</td>
<td>1.08</td>
<td>0.44</td>
</tr>
<tr>
<td>20.00</td>
<td>0.71</td>
<td>0.34</td>
</tr>
<tr>
<td>21.00</td>
<td>0.46</td>
<td>0.25</td>
</tr>
<tr>
<td>22.50</td>
<td>0.23</td>
<td>0.14</td>
</tr>
</tbody>
</table>

This is a table is for General Electric (GE) currently trading right at 18 dollars. Notice that the ATM call has a Delta of .5 and that the deeper in the money we go the Delta gets larger and as we go further out of the money the Delta gets smaller. This holds true for all call options, and deltas for calls range between zero and one with the AMT strike equaling 0.5.

\[ 0 < 0.5 < 1 \]

OTM ATM ITM

What happens if price of GE stock rises by $1.00? To answer this we turn to Delta.

Delta is expressed as a percentage. If an option has a 50 Delta (or .50), its premium will change by 50% of the change in the stock price. The 17 strike call is ITM by a dollar and has a Delta of 0.64, stated as a 64 Delta, this tells us that if the GE goes up by a dollar that the premium will increase by 64% of the stocks move.

Doing the math, the current premium for the 17 strike is $2.14 as the stock price increases by a dollar the premium will increase by its Delta, 64 cents, so the new premium at 18 is predicted to be $2.78. An increase of 64% of the $1.00 move in the price of the stock: all things remaining equal.

| Stock Price | $17 --- $18 |
| Call Premium | $2.14 -----.64 ------$2.78 |
We do the same thing if the stock goes down by a dollar. For the ATM strike if GE goes down by a dollar, the premium can be predicted to move down by 50% of the stock’s move, to $1.05.

<table>
<thead>
<tr>
<th>Stock Price</th>
<th>$18</th>
<th>$17</th>
</tr>
</thead>
<tbody>
<tr>
<td>Call Premium</td>
<td>$1.55</td>
<td>.5</td>
</tr>
</tbody>
</table>

Flying inverted with puts we see that puts have a negative Delta. Remember when stock prices rise we add the Delta and when they decrease we subtract the Delta. Since puts have a negative Delta, as stock prices rise put values decrease and as stock prices fall put values increase.

<table>
<thead>
<tr>
<th>Strike</th>
<th>Ask</th>
<th>Delta</th>
</tr>
</thead>
<tbody>
<tr>
<td>13.00</td>
<td>0.42</td>
<td>-0.12</td>
</tr>
<tr>
<td>14.00</td>
<td>0.54</td>
<td>-0.16</td>
</tr>
<tr>
<td>15.00</td>
<td>0.70</td>
<td>-0.21</td>
</tr>
<tr>
<td>16.00</td>
<td>0.93</td>
<td>-0.28</td>
</tr>
<tr>
<td>17.00</td>
<td>1.24</td>
<td>-0.36</td>
</tr>
<tr>
<td>18.00</td>
<td>1.65</td>
<td>-0.50</td>
</tr>
<tr>
<td>19.00</td>
<td>2.19</td>
<td>-0.56</td>
</tr>
<tr>
<td>20.00</td>
<td>2.84</td>
<td>-0.66</td>
</tr>
<tr>
<td>21.00</td>
<td>3.60</td>
<td>-0.75</td>
</tr>
<tr>
<td>22.50</td>
<td>4.90</td>
<td>-0.85</td>
</tr>
</tbody>
</table>

*Table 6, GE Puts*

Notice that the ATM put has a Delta of -0.5 and that the deeper ITM we go the Delta has a bigger percentage effect. As we go further out of the money the deltas have a smaller percentage effect. This holds true for all put options, as Delta ranges between zero and negative one with the AMT strike Delta equaling negative 0.5.

\[
0 \quad > \quad -0.5 \quad \geq \quad -1 \\
\text{OTM} \quad \text{ATM} \quad \text{ITM}
\]

What happens if price of GE stock decreases by $1.00. To answer this we look at the Delta.

Delta is still expressed as a percentage. If an option has a -56 Delta, its price will change by 56% of the change in the stock price, just in the opposite direction as a call.

With GE trading at $18, the 19 strike put is ITM by a dollar and has a negative 56 Delta. This tells us that if the GE goes down by a dollar that the premium will increase by 56% of the stock's move. Remember that when a stock goes down we subtract Delta from the premium and since put deltas are negative, this will mean a net increase in the premium.
The current premium for the 19 strike is $2.19, as the stock price decreases by a dollar the premium will increase by its Delta, 56 cents. So the premium at 18 is predicted to be $2.75, 56% of the 1 dollar move in the price of the stock: all things remaining equal.

<table>
<thead>
<tr>
<th>Stock Price</th>
<th>$19  ────────→  $18</th>
</tr>
</thead>
<tbody>
<tr>
<td>Put Premium</td>
<td>$2.19  ─────────→  $2.75</td>
</tr>
</tbody>
</table>

We do the same thing if the stock goes up a dollar. For the ATM strike, if GE goes up by a dollar. The premium can be predicted to move down by 50% of the stocks move to $1.15: this not a good thing for a long position.

<table>
<thead>
<tr>
<th>Stock Price</th>
<th>$18  ────────→  $19</th>
</tr>
</thead>
<tbody>
<tr>
<td>Call Premium</td>
<td>$1.65  ─────────→  $1.15</td>
</tr>
</tbody>
</table>

Delta simply tells us how much an option premium for a particular strike will change given a one dollar move in the underlying stock. Deltas for calls are positive and deltas for puts are negative. As stocks go up we add Delta and as stocks go down we subtract Delta. Meaning that as a stock price rises, call premiums go up and put premiums go down. Or as stock prices decrease, call premiums go down and put premiums go up. Deltas also get larger and have a bigger percentage effect on premiums of put and call the further ITM we go.

Delta can also give us a rough estimation of our probability of a strike finishing in the money. The ATM strike has a 50 Delta, meaning that we have a 50% chance of the strike finishing in the money. This makes sense, since the stock has a 50% chance of going up or down. A deep in the money strike with an 80 Delta, roughly means the strike has an 80% chance of finishing ITM. This does not give us a probability of profit, just the chance that the option will finish ITM.

Delta also tells us the equivalent number of shares we own in terms of the performance of our strike. If we buy an ATM strike with a Delta of 50. The premium will change by 50% of the stocks move. Since each contract controls 100 shares, this means that our option is profiting or losing at the same rate as owning 50 shares of stock.

**Gamma - Γ**

Since Delta changes the further ITM or OTM, it has its own sensitivity measure, Gamma. Gamma tells us how much Delta will change for a $1 change in the underlying. Think of Gamma as the accelerator pedal for Delta, because it tells us the speed of change for Delta and allows us to more accurately estimate premium price changes.
Looking again at GE data with GE trading at 18 dollars, gammas are positive for calls and puts. Gamma is highest for ATM strikes and decreases in both directions as you get further away from the ATM strike.

For a call, if GE goes up by a dollar how does this affect the Delta? The answer is in the Gamma of the Delta.

The ATM call strike of 18 has a Delta of .50 and the Delta changes by its Gamma of 10 cents for every dollar the stock moves, up or down. In theory, this tells us that if the stock price goes from our ATM strike of 18 to 19 our new Delta will be .60 and the new premium will be $2.05 cents and if it goes up another dollar to 20, the new Delta will be .70 and the premium will be $2.65.

<table>
<thead>
<tr>
<th>Stock Price</th>
<th>$18</th>
<th>$19</th>
<th>$20</th>
</tr>
</thead>
<tbody>
<tr>
<td>Call Delta</td>
<td>.50</td>
<td>.10</td>
<td>.60</td>
</tr>
<tr>
<td></td>
<td></td>
<td>.10</td>
<td>.70</td>
</tr>
<tr>
<td>Gamma</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18 Strike</td>
<td>$1.55</td>
<td>$2.05</td>
<td>$2.65</td>
</tr>
</tbody>
</table>

Looking at this more closely we can see that at the 18 dollar strike, premium will increase by 50% of the stocks move and by the time it gets to 19 the premium is increasing by 60% of the stocks move. This acceleration is caused by the Gamma. In fact, while the stock is climbing from 18 to 19 and on to 20, Delta is actually increasing every step of the way due to Gamma. So, the actual increase in the premium will be slightly more than the 50% prediction for a dollar increase. To estimate premiums more accurately, we need to average the change in Delta between 18 to 19 and 19 to 20.
Stock Price | $18 | $19 | $20
---|---|---|---
Call Delta | .50 | .10 | .60 | .10 |
Avg. Delta | .55 | .65 |

18 Strike

Premium | $1.55 | $2.10 | $2.75

The average Delta from 18 to 19 is 55, the estimated change in premium is 55% of the stocks move to 19, so the new premium would be $2.10. The average Delta from 19 to 20 is 65, we can estimate a change in premium of 65% of the stocks move and a new premium of $2.75. This gives us a more accurate picture of the premiums behavior.

Let’s look at the effect of a stock price decreasing on call premiums.

The estimate of premium price change as price declines from 18 to 17 and 17 to 16 is done the same way. The premium simply drops by the amount of Delta for each one dollar decrease in the stock price and we recalculate Delta based on Gamma for each dollar move of the underlying.

Stock Price | $18 | $17 | $16
---|---|---|---
Call Delta | .50 | .10 | .40 | .09 |
Avg. Delta | .45 | .36 |

18 Strike

Premium | $1.55 | $1.10 | $0.74

The average Delta from 18 to 17 is 45, so we can accurately estimate the premium at 17 to be $1.10. We do the same from 17 to 16 to find our premium estimate of $0.74.

We can see for a call that when a stock decreases, Gamma actually acts more as a decelerator for Delta and is decelerating every step of the way.
Now let’s look at Gamma’s affect on puts.

<table>
<thead>
<tr>
<th>Strike</th>
<th>Ask</th>
<th>Delta</th>
<th>Gamma</th>
</tr>
</thead>
<tbody>
<tr>
<td>13.00</td>
<td>0.42</td>
<td>-0.12</td>
<td>0.03</td>
</tr>
<tr>
<td>14.00</td>
<td>0.54</td>
<td>-0.16</td>
<td>0.05</td>
</tr>
<tr>
<td>15.00</td>
<td>0.70</td>
<td>-0.21</td>
<td>0.06</td>
</tr>
<tr>
<td>16.00</td>
<td>0.93</td>
<td>-0.28</td>
<td>0.07</td>
</tr>
<tr>
<td>17.00</td>
<td>1.24</td>
<td>-0.36</td>
<td>0.09</td>
</tr>
<tr>
<td>18.00</td>
<td>1.65</td>
<td>-0.50</td>
<td>0.10</td>
</tr>
<tr>
<td>19.00</td>
<td>2.19</td>
<td>-0.56</td>
<td>0.10</td>
</tr>
<tr>
<td>20.00</td>
<td>2.84</td>
<td>-0.66</td>
<td>0.10</td>
</tr>
<tr>
<td>21.00</td>
<td>3.60</td>
<td>-0.75</td>
<td>0.09</td>
</tr>
<tr>
<td>22.50</td>
<td>4.90</td>
<td>-0.85</td>
<td>0.05</td>
</tr>
</tbody>
</table>

Table 6, GE Puts

Remember that Gamma is always positive and when stock increases we add values and when a stock decreases we subtract values. Since Gamma measures the rate of change in Delta, this means that for put as a stock decreases deltas have a bigger effect on premiums and when stocks increase deltas have a smaller affect on premiums.

Let’s look at both directions.

Starting with the ATM strike of 18 our Delta is negative .50. As the stock decreases to 17 we subtract our Gamma of 0.1 from the negative .50 Delta to get our new Delta of negative 60. As the stock decrease further to 16 …we subtract our Gamma of .09 from the negative sixty Delta to get our new Delta of negative sixty nine. We can see that by calculating the average Delta, as stock prices are decreasing Delta is accelerating for puts. Again, using these average values we get a more accurate picture of what how our put premiums will behave when the stock declines.

<table>
<thead>
<tr>
<th>Stock Price</th>
<th>$18</th>
<th>$17</th>
<th>$16</th>
</tr>
</thead>
<tbody>
<tr>
<td>Put Delta</td>
<td>-.50</td>
<td>.10</td>
<td>-.60</td>
</tr>
<tr>
<td>Avg. Delta</td>
<td>-.55</td>
<td></td>
<td>-.65</td>
</tr>
</tbody>
</table>

18 Strike

| Premium | $1.65 | $2.20 | $2.85 |

We can see that by calculating the average Delta, as stock prices are decreasing, Delta is in fact accelerating for puts. Again, using these average values we get a more accurate picture of what how our put premiums will behave when the stock declines.
As the stock goes up for a put we can see that the effect of Gamma is actually decelerating the decline in Delta.

As the stock climbs from 18 to 19 we add our Gamma of 0.1 to the negative 50 Delta to get our Delta at 19 of negative 40, the average Delta of negative 45. So we estimate the premium at 19 being on dollar and fifteen cents. As the stock goes from 19 to 20 we again add our Gamma of .1 to get our new Delta of negative 30. The average Delta for the one dollar move is negative 35, so we estimate our premium to be eighty five cents.

<table>
<thead>
<tr>
<th>Stock Price</th>
<th>$18</th>
<th>$19</th>
<th>$20</th>
</tr>
</thead>
<tbody>
<tr>
<td>Put Delta</td>
<td>-.50</td>
<td>.10</td>
<td>-.40</td>
</tr>
<tr>
<td>Avg. Delta</td>
<td>-.45</td>
<td></td>
<td>-.35</td>
</tr>
</tbody>
</table>

18 Strike

| Premium     | $1.55| $1.10| $0.75 |

Summing up, Gamma is a measure of the sensitivity of Delta to a change in the price of an underlying asset. Gamma is positive and is highest for ATM strike prices. As you go in either direction for the ATM strike Gamma decreases. Think of Gamma as an accelerator pedal for Delta, as a stock moves ITM Delta increases at the rate of Gamma and as stocks move out of the money, Delta decreases at the rate of Gamma. Just as with Delta, you add Gamma when the stock goes up and you subtract Gamma when the stock goes down.

Theta - Θ

As we’ve already stated, options are a decaying asset, which means options lose value over time. Time is an asset, so we have to pay for time; the more time left to expiration the more valuable the option. This is because we have more time for the position to work in our favor. Remember that options possess two types of value, intrinsic and time value. Theta measures the decay of the time value.

Theta measures the decay of the time value portion of the options premium for everyday of its existence. This rate of decay accelerates every day and is greatest during the final month of an option life as an asset and ultimately decreases to zero when the option expires.
# Jul10 CALLS (67 days)

<table>
<thead>
<tr>
<th>Strike</th>
<th>Premium Today</th>
<th>Theta</th>
</tr>
</thead>
<tbody>
<tr>
<td>50.00</td>
<td>14.90</td>
<td>-0.02</td>
</tr>
<tr>
<td>55.00</td>
<td>10.15</td>
<td>-0.02</td>
</tr>
<tr>
<td>57.50</td>
<td>7.90</td>
<td>-0.02</td>
</tr>
<tr>
<td>60.00</td>
<td>5.75</td>
<td>-0.02</td>
</tr>
<tr>
<td>62.50</td>
<td>3.90</td>
<td>-0.02</td>
</tr>
<tr>
<td>65.00</td>
<td>2.36</td>
<td>-0.02</td>
</tr>
<tr>
<td>67.50</td>
<td>1.28</td>
<td>-0.02</td>
</tr>
<tr>
<td>70.00</td>
<td>0.62</td>
<td>-0.01</td>
</tr>
<tr>
<td>72.50</td>
<td>0.28</td>
<td>-0.01</td>
</tr>
<tr>
<td>75.00</td>
<td>0.13</td>
<td>-0.01</td>
</tr>
</tbody>
</table>

*Table 7, XOM Calls*

We will look at the Jul Exxon Mobil (XOM) calls, currently the calls are 67 days from expiration and XOM is trading at 64.46.

Looking at the 65 strike our premium today is $2.36, all time value as this strike is OTM. Theta tells us that this time value will decay by 2 cents per day. All things remaining equal, the premium will decrease 2 cents to $2.34 the next trading day.

\[
\begin{align*}
\text{Strike} & = 65.00 \\
\text{Premium Today} & = 2.36 \\
\text{Theta} & = -0.02
\end{align*}
\]

**Premium Next Day** = 2.34

If we look at the ITM 60 strike and separate the intrinsic and time value we see that the overall effect is still a 2 cent decay in the value of the option. So it is not necessary to do all the math, simply look at the Theta and that is how much the overall premium will decay per day.

<table>
<thead>
<tr>
<th>Strike</th>
<th>Premium Today</th>
<th>Intrinsic Value</th>
<th>Time Value</th>
<th>Theta</th>
</tr>
</thead>
<tbody>
<tr>
<td>60.00</td>
<td>5.75</td>
<td>4.46</td>
<td>1.29</td>
<td>-0.02</td>
</tr>
</tbody>
</table>

\[
\begin{align*}
\text{Time Value Next Day} & = 1.27 \\
\text{Premium Next Day} & = 5.73
\end{align*}
\]
Table 8, XOM Puts

Theda works the same way for puts. Simply subtract the value of Theta from the option premium to figure out how quickly time is decaying the value of the premium.

<table>
<thead>
<tr>
<th>Strike</th>
<th>Ask</th>
<th>Theta</th>
</tr>
</thead>
<tbody>
<tr>
<td>50.00</td>
<td>0.31</td>
<td>-0.01</td>
</tr>
<tr>
<td>55.00</td>
<td>0.56</td>
<td>-0.01</td>
</tr>
<tr>
<td>57.50</td>
<td>0.81</td>
<td>-0.01</td>
</tr>
<tr>
<td>60.00</td>
<td>1.20</td>
<td>-0.02</td>
</tr>
<tr>
<td>62.50</td>
<td>1.84</td>
<td>-0.02</td>
</tr>
<tr>
<td>65.00</td>
<td>2.82</td>
<td>-0.02</td>
</tr>
<tr>
<td>67.50</td>
<td>4.25</td>
<td>-0.01</td>
</tr>
<tr>
<td>70.00</td>
<td>6.15</td>
<td>-0.01</td>
</tr>
<tr>
<td>72.50</td>
<td>8.30</td>
<td>0.00</td>
</tr>
<tr>
<td>75.00</td>
<td>10.70</td>
<td>0.00</td>
</tr>
</tbody>
</table>

**Strike** = 60.00
**Premium Today** = 1.20
**Time Value** = 1.20
**Theta** = -0.02

**Premium Next Day** = 1.18

Time is in fact money! Theda can work for us or against us depending if we are long or short in our position. If we are open a long position on the 65 call, we pay $2.36 per share to open this position. If the stock price does not change, we are losing 2 cents per day. If we were to wait 5 days then sell to close this position we would lose 10 cents per share.

<table>
<thead>
<tr>
<th>Strike</th>
<th>Testa</th>
<th>Time Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>50.00</td>
<td>0.31</td>
<td>0.31</td>
</tr>
<tr>
<td>55.00</td>
<td>0.56</td>
<td>0.56</td>
</tr>
<tr>
<td>57.50</td>
<td>0.81</td>
<td>0.81</td>
</tr>
<tr>
<td>60.00</td>
<td>1.20</td>
<td>1.20</td>
</tr>
<tr>
<td>62.50</td>
<td>1.84</td>
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<tr>
<td>65.00</td>
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<td>67.50</td>
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<td>6.15</td>
<td>6.15</td>
</tr>
<tr>
<td>72.50</td>
<td>8.30</td>
<td>8.30</td>
</tr>
<tr>
<td>75.00</td>
<td>10.70</td>
<td>10.70</td>
</tr>
</tbody>
</table>

**Premium Next Day** = 2.34
**Premium in 5 days (est.)** = 2.26

On the other hand if we were short this position. We would be making 2 cents per day and after 5 days we could buy back our position for a 10 cent gain: all things remaining equal.

Time is at work with our options every minute of every day. Theda lets us know how hard it is working for, or against us and the closer we get to expiration the more quickly time value decays.

DISCIPLINE | RISK MANAGEMENT | SUPERIOR EXECUTION
The last of the major Greeks is Vega. Vega measures options sensitivity to changes in implied volatility. Volatility is measured as a percentage and is the subject of our next lesson, where we dig into historical and implied volatility. Vega tells us how much the option price will change given a 1% increase or decrease in implied volatility.

<table>
<thead>
<tr>
<th>Strike</th>
<th>Ask</th>
<th>Vega</th>
</tr>
</thead>
<tbody>
<tr>
<td>50.00</td>
<td>14.90</td>
<td>0.04</td>
</tr>
<tr>
<td>55.00</td>
<td>10.15</td>
<td>0.06</td>
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<tr>
<td>57.50</td>
<td>7.90</td>
<td>0.08</td>
</tr>
<tr>
<td>60.00</td>
<td>5.75</td>
<td>0.09</td>
</tr>
<tr>
<td>62.50</td>
<td>3.90</td>
<td>0.10</td>
</tr>
<tr>
<td>65.00</td>
<td>2.36</td>
<td>0.11</td>
</tr>
<tr>
<td>67.50</td>
<td>1.28</td>
<td>0.10</td>
</tr>
<tr>
<td>70.00</td>
<td>0.62</td>
<td>0.08</td>
</tr>
<tr>
<td>72.50</td>
<td>0.28</td>
<td>0.05</td>
</tr>
<tr>
<td>75.00</td>
<td>0.13</td>
<td>0.03</td>
</tr>
</tbody>
</table>

Table 8, XOM Calls

Changes in implied volatility have the biggest effect for ATM options; hence Vega is largest ATM and decreases in either direction away from ATM strikes. Vega is a component of time value, so as the time to expiry decreases so does the effect of a change in implied volatility. Implied volatility affects calls and puts the same way. As implied volatility goes up, premiums go up and as implied volatility goes down, premiums go down.

Looking at XOM again (Table 8), the current implied volatility is 20%. What happens if implied volatility increases by 3%? To answer this question we need to look at Vega.

If we look at the 65 strike, the closest strike to the money, we see that Vega is at its highest value of 11 cents. For each percentage change in implied volatility, up or down, the premium for the 65 call will change up or down by 11 cents. If we get a spike up in volatility by 3%, the premium will increase by 3 times the Vega of 11 cents or 33 cents and the new premium will be 2 dollars and 69 cents.

| Strike     | = 65.00 |
| Premium    | = 2.36  |
| Change in volatility | = 3%   |
| Vega       | = 0.11  |
| Increase in premium | = 0.33 |

DISCIPLINE | RISK MANAGEMENT | SUPERIOR EXECUTION
New Premium = 2.69

This change in premium is calculated the same way for puts.

<table>
<thead>
<tr>
<th>Strike</th>
<th>Ask</th>
<th>Vega</th>
</tr>
</thead>
<tbody>
<tr>
<td>50.00</td>
<td>0.31</td>
<td>0.03</td>
</tr>
<tr>
<td>55.00</td>
<td>0.56</td>
<td>0.05</td>
</tr>
<tr>
<td>57.50</td>
<td>0.81</td>
<td>0.07</td>
</tr>
<tr>
<td>60.00</td>
<td>1.20</td>
<td>0.09</td>
</tr>
<tr>
<td>62.50</td>
<td>1.84</td>
<td>0.10</td>
</tr>
<tr>
<td>65.00</td>
<td>2.82</td>
<td>0.11</td>
</tr>
<tr>
<td>67.50</td>
<td>4.25</td>
<td>0.10</td>
</tr>
<tr>
<td>70.00</td>
<td>6.15</td>
<td>0.06</td>
</tr>
<tr>
<td>72.50</td>
<td>8.30</td>
<td>0.00</td>
</tr>
<tr>
<td>75.00</td>
<td>10.70</td>
<td>0.00</td>
</tr>
</tbody>
</table>

We can see here that a 3% spike in implied volatility for the 65 strike put also equates to a 33 cent increase in premium.

Strike = 65.00
Premium = 2.82
Change in volatility = 3%
Vega = 0.11
Increase in premium = 0.33
New Premium = 3.15

What does this mean to us as option traders? It means that when volatility is high, options are expensive and when volatility is low, options are cheap. From a traders perspective we sell high and buy low. For example if we buy when implied volatility is cheap, we can profit from an increase in volatility. Or, if we sell when volatility is high, we can profit from a decrease in volatility.

Rho - P

The last of the Greeks is Rho. Rho is the option's sensitivity to changes in interest rates. Most traders have little interest in this measurement and at Fox 3 we only pay attention to Rho with options that have a very long timeframe. Rho measures the change in an option price given a 1% change in the risk free rate of return, generally measured by the T-bill rate.
Given the intermittent adjustment and generally relatively small increase each time interest rates are adjusted, Rho has a very small impact on option premiums.

<table>
<thead>
<tr>
<th>Jul10 CALLS</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Strike</td>
<td></td>
<td></td>
</tr>
<tr>
<td>50.00</td>
<td>14.90</td>
<td>0.08</td>
</tr>
<tr>
<td>55.00</td>
<td>10.15</td>
<td>0.08</td>
</tr>
<tr>
<td>57.50</td>
<td>7.90</td>
<td>0.08</td>
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<tr>
<td>60.00</td>
<td>5.75</td>
<td>0.08</td>
</tr>
<tr>
<td>62.50</td>
<td>3.90</td>
<td>0.07</td>
</tr>
<tr>
<td>65.00</td>
<td>2.36</td>
<td>0.05</td>
</tr>
<tr>
<td>67.50</td>
<td>1.28</td>
<td>0.04</td>
</tr>
<tr>
<td>70.00</td>
<td>0.62</td>
<td>0.02</td>
</tr>
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<td>72.50</td>
<td>0.28</td>
<td>0.01</td>
</tr>
<tr>
<td>75.00</td>
<td>0.13</td>
<td>0.01</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Jul10 PUTS</th>
<th></th>
<th></th>
<th>Rho</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strike</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>50.00</td>
<td>0.31</td>
<td>-0.01</td>
<td></td>
</tr>
<tr>
<td>55.00</td>
<td>0.56</td>
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<td></td>
</tr>
<tr>
<td>57.50</td>
<td>0.81</td>
<td>-0.02</td>
<td></td>
</tr>
<tr>
<td>60.00</td>
<td>1.20</td>
<td>-0.03</td>
<td></td>
</tr>
<tr>
<td>62.50</td>
<td>1.84</td>
<td>-0.04</td>
<td></td>
</tr>
<tr>
<td>65.00</td>
<td>2.82</td>
<td>-0.06</td>
<td></td>
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<tr>
<td>67.50</td>
<td>4.25</td>
<td>-0.08</td>
<td></td>
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<tr>
<td>70.00</td>
<td>6.15</td>
<td>-0.08</td>
<td></td>
</tr>
<tr>
<td>72.50</td>
<td>8.30</td>
<td>0.00</td>
<td></td>
</tr>
<tr>
<td>75.00</td>
<td>10.70</td>
<td>0.00</td>
<td></td>
</tr>
</tbody>
</table>

Rho is calculated the same as Delta, when rates increase we add Rho and when rates decrease we subtract Rho. Calls have a positive Rho and puts have a negative Rho. This means as interest rates creep up the value of calls go up and the value of puts goes down and as rate creep down the value of puts decrease and puts increase.

**Wrap Up**

When buying or selling options you need to be aware how the option price is anticipated to move and react in all market condition. As we go through Top Gun options, we will evaluate how each Tactic we teach responds to market conditions by applying key Greek measure to enhance our profitability. With the exception of Gamma, the Greeks are real, actual, MONEY:

Delta of 0.65 is $0.65 made or lost every $1 move of target.
Theta of 0.02 is $0.02 made or lost every single day.
Vega of 0.40 is $0.40 made or lost every 1% change in volatility.
Rho of 0.03 is $0.03 made or lost every 1% change in interest rate.

<table>
<thead>
<tr>
<th>Term</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>Delta</td>
<td>Sensitivity to underlying price</td>
</tr>
<tr>
<td>Gamma</td>
<td>Sensitivity of Delta</td>
</tr>
<tr>
<td>Theta</td>
<td>Sensitivity to time</td>
</tr>
<tr>
<td>Vega</td>
<td>Sensitivity to implied volatility</td>
</tr>
<tr>
<td>Rho</td>
<td>Sensitivity to interest rates</td>
</tr>
</tbody>
</table>
Lesson 5 Quiz

Use table above to answer questions 1-4.

1. T / F: The table above is listing deltas for call options.
   2. Which strike price is ATM?
      a. 16.00  
      b. 17.00  
      c. 18.00  
      d. 19.00  
   3. Based on Delta, how much will the premium of the 17 strike increase if the stock goes up by 50 cents?
      a. 72 cents  
      b. $1.00  
      c. 32 cents  
      d. $2.14  
   4. The 20 strike is______.
      a. ITM  
      b. OTM  
      c. ATM  
      d. Close to the money.

<table>
<thead>
<tr>
<th>Strike</th>
<th>Ask</th>
<th>Delta</th>
</tr>
</thead>
<tbody>
<tr>
<td>13.00</td>
<td>5.40</td>
<td>0.87</td>
</tr>
<tr>
<td>14.00</td>
<td>4.50</td>
<td>0.84</td>
</tr>
<tr>
<td>15.00</td>
<td>3.65</td>
<td>0.79</td>
</tr>
<tr>
<td>16.00</td>
<td>2.84</td>
<td>0.72</td>
</tr>
<tr>
<td>17.00</td>
<td>2.14</td>
<td>0.64</td>
</tr>
<tr>
<td>18.00</td>
<td>1.55</td>
<td>0.50</td>
</tr>
<tr>
<td>19.00</td>
<td>1.08</td>
<td>0.44</td>
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<tr>
<td>20.00</td>
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<td>21.00</td>
<td>0.46</td>
<td>0.25</td>
</tr>
<tr>
<td>22.50</td>
<td>0.23</td>
<td>0.14</td>
</tr>
</tbody>
</table>
Use the above table to answer questions 5-8.

5. T / F: The table above is listing deltas for call options.

6. Based on Delta, how much will the premium of the 20 strike increase/decrease if the stock goes up by $1.00?
   a. Increase by 66 cents
   b. Increase by $1.00
   c. Decrease by $1.00
   d. Decrease by 66 cents.

7. Which strike is ATM?
   a. 17.00
   b. 18.00
   c. 19.00
   d. 20.00

8. The 20 strike is________.
   a. ITM
   b. OTM
   c. ATM
   d. Close to the money.

9. T/F: Deltas get smaller the further ITM a strike price is.

Use the above table to answer questions 10-12.

10. Considering Gamma, what is the average Delta if the stock moves from 18.00 to 19.00?
    a. 50
    b. 60
    c. 1.55
    d. 55

11. From question 10, what will be the estimated premium of the 18 strike if the stock climbs to 19.00?
    a. 2.10
b. 2.05
c. 1.05
d. 1.00
12. What is the average Delta if the stock moves from 18.00 – 17.00?
   a. 75  
   b. 84  
   c. 72  
   d. 45

<table>
<thead>
<tr>
<th>Strike</th>
<th>Ask</th>
<th>Delta</th>
<th>Gamma</th>
</tr>
</thead>
<tbody>
<tr>
<td>13.00</td>
<td>0.42</td>
<td>-0.12</td>
<td>0.03</td>
</tr>
<tr>
<td>14.00</td>
<td>0.54</td>
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<td>0.05</td>
</tr>
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<td>15.00</td>
<td>0.70</td>
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<td>0.06</td>
</tr>
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<td>16.00</td>
<td>0.93</td>
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<td>0.07</td>
</tr>
<tr>
<td>17.00</td>
<td>1.24</td>
<td>-0.36</td>
<td>0.09</td>
</tr>
<tr>
<td>18.00</td>
<td>1.65</td>
<td>-0.50</td>
<td>0.10</td>
</tr>
<tr>
<td>19.00</td>
<td>2.19</td>
<td>-0.56</td>
<td>0.10</td>
</tr>
<tr>
<td>20.00</td>
<td>2.84</td>
<td>-0.66</td>
<td>0.10</td>
</tr>
<tr>
<td>21.00</td>
<td>3.60</td>
<td>-0.75</td>
<td>0.09</td>
</tr>
<tr>
<td>22.50</td>
<td>4.90</td>
<td>-0.85</td>
<td>0.05</td>
</tr>
</tbody>
</table>

Use the above table to answer questions 13-15.

13. Considering Gamma, what is the average Delta if the stock moves from 18.00 to 19.00?
   a. -45  
   b. -55  
   c. -40  
   d. -56

14. From question 13, what will be the estimated premium of the 18 strike at 19.00?
   a. 1.15  
   b. 2.15  
   c. 1.20  
   d. 2.19

15. What is the average Delta if the stock moves from 18.00 – 17.00?
   a. -75  
   b. -55  
   c. -45  
   d. -36
Use the above table to answer questions 16.

16. With all things remaining equal, what will the premium be for the 60 strike be in two days?
   a. 5.75
   b. 5.73
   c. 5.71
   d. 5.77

17. T/F: Theta effects calls and puts the same way?

Use the above table to answer questions 18-19.

18. What happens to 65 strike if implied volatility drops by 3%?
   a. 33 cent decrease
   b. No effect
   c. 33 cent increase
   d. Can increase or decrease
19. What happens to 65 strike if implied volatility increases by 3%?
   a. 33 cent decrease
   b. No effect
   c. 33 cent increase
   d. Can increase or decrease

20. With an increase in the Risk free Interest rate, Rho will have the following effect.
   a. Decrease Call Premiums / Increase Put Premiums
   b. Increase Call Premiums / Decrease Put Premiums
   c. Increase Put and Call Premiums.
   d. Decrease Put and call Premiums.

21. With a decrease in the Risk free Interest rate, Rho will have the following effect.
   a. Decrease Call Premiums / Increase Put Premiums
   b. Increase Call Premiums / Decrease Put Premiums
   c. Increase Put and Call Premiums.
   d. Decrease Put and call Premiums.
Lesson 6

Volatility

Many option traders will trade without a solid understanding of volatility and its effect on option prices. Option traders that don’t understand volatility often find themselves making all the right decisions on the underlying’s direction but still end up losing on a trade. Then they sit there, scratching their head, thinking some market maker or market black magic has stolen their money. The truth is the failure rests squarely on their own shoulders because they have not melded volatility into their trade decision making.

At Fox3, we consider volatility in every trade. How it affects our entry into a trade, how it will affect our position while it is open and how it will drive our exit criteria. Understanding volatility determines much of our success in trading options. This lesson will build a foundation for understanding and using volatility to build and execute profitable trades more consistently.

In this lesson we will define Historical Volatility, learn how it is measured with standard deviation and what the measurement means. Then how implied volatility is derived and what it means to us as option traders. We will then look at some practical applications of historical and implied volatility.

Volatility is the rate and magnitude that a stock moves up and down: simply stated it’s how fast and by how much the price of a stock is moving around. It is measured as a statistical average and is displayed as the percentage of price movement of the underlying asset based on the standard deviation of a price distribution. We will get to standard deviation shortly.

Historical Volatility

Historical volatility (HV) is just that, historical. It simply measures how volatile a stock has been over a defined period of time in the past. HV is derived from historical price data only and does not, necessarily, give any insight as to the future volatility of a stock. Remember past performance does not guarantee future performance. HV is also known as statistical volatility and is a key input for option pricing models.
Let's look at two stocks to understand HV more clearly. Stock A and stock B are both trading at 100 dollars. However, over the past 30 days the two stocks have behaved quite differently.

<table>
<thead>
<tr>
<th></th>
<th>Stock A = $100</th>
<th>Stock B = $100</th>
</tr>
</thead>
<tbody>
<tr>
<td>Past 30 Days</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Closing High</td>
<td>$115</td>
<td>$105</td>
</tr>
<tr>
<td>Closing Low</td>
<td>$89</td>
<td>$97</td>
</tr>
<tr>
<td>Trading Range</td>
<td>$26</td>
<td>$8</td>
</tr>
</tbody>
</table>

Stock A has traded as high as 115 dollars and as low as 89 dollars. Stock A has had a trading range of 26 dollars over the last 30 days. Stock B has traded between 105 dollars and 97 dollars. Stock B has had a trading range of 8 dollars over the past 30 days.

Which stock is more volatile?

Clearly stock A has been more volatile over the past 30 days and stock B has been less volatile. This is just common sense as we can see that stock A generally moves at a faster rate and of a higher magnitude than stock B. The difference in volatility between the two stocks is quantified statistically and is presented to investors as a percentage of the stock price representing a one standard deviation move over the time period being observed.

**Standard Deviation**

Understanding the mathematical calculation behind finding standard deviation is not important to us as traders. Understanding how the data is interpreted is essential to successful trading.

Standard Deviation is simply a statistical measure of price occurrences, normally the closing price for each day over a period of time, 20 days, 60 days or 1 year. The historical price data is crunched in a statistical formula to give us distribution of closing prices around a mean, the average price over the period of time being observed. The standard deviation of a stock is derived from this distribution. Historical Volatility is equal to one standard deviation in the price distribution and is presented to traders as a percentage of the current stock price.

So, what does this mean?
Distributions of price data can be presented many ways but we will use distribution curves to understand this concept.

Distribution curves can take many shapes depending on the data observed, but for the purpose of understanding standard deviation and how it applies to historical volatility we will assume a normal distribution, as displayed in figure 10. In this case a bell curve representing a normal distribution of prices over a period of time. The highest point in the curve, the center, is the average price over the period of time observed.

Standard deviation is a statistical measurement that tells us how tightly grouped prices are around the mean. One standard deviation plus or minus the average price is represented by the red portion of the curve, two standard deviations is represented by the green portion of the curve and three standard deviations is represented by the blue portion. In trader talk, the prices within one standard deviation are known as the meat and the prices outside of two standard deviations are known as the tails.

Statistically speaking, one standard deviation encompasses prices that occur 68.4% of the time or roughly two thirds of the time. Two Standard Deviations encompass prices that occur about 95% of the time and three standard deviations encompass prices that occur roughly 100% of the time over the period observed. Historical volatility is presented to us as a percentage and represents the range of price occurrences within one standard deviation of the current price.

Let’s look at an example.
Let’s say that over the past year a stock’s historical volatility has been 25%. This tells us that 68.4% or roughly two thirds of the time the stock traded within 25% of its average price.

So if a stock's average price is 100, two thirds of the time the stock traded between 75 and 125 dollars over the past year. That 95% of the time the stock traded between 50 – 150 dollars and roughly 100% of the time the stock traded between 25 – 175 dollars: Pretty straight forward.

Since Historical volatility is a measure of the range of prices over a period of time it stands to reason that the higher the historical volatility of a particular stock the more risk is associated with that stock. So HV is also an indication of the riskiness of a stock.
Representing riskiness with distribution curves in figure 12, a more volatile stock will have a shorter and wider pattern of price distributions. A less volatile stock will have a taller and tighter pattern of price distributions. This simply means that stocks with high volatility have price swings that have a higher rate and magnitude as a percentage of stock price, than the price swings of a less volatile stock.

So, as option traders, why does all this matter to us?

HV is a key input into the option pricing models. It gives us a window to the past behavior of a stock. Understanding HV presents profitable opportunities for options traders, both in a potential move in the underlying in our favor and in the rise and fall in the volatility of an option, which measured by implied volatility. To find these opportunities we need to understand implied volatility.

**Implied Volatility**

Implied volatility is the measure of options volatility. Recall that with each 1 percent change in implied volatility the premium of an option is directly correlated with volatility and the price changes by the value of its Vega per a 1% move in implied volatility.

Implied Volatility is what the market thinks the volatility of the underlying stock will be going forward and it is reflected in the prices of options. How do we figure out what the market thinks? Let’s go back to the option pricing model.

Recall the six inputs to the pricing model: the current underlying stock price, the strike price of the option, the time to expiration, the volatility of the underlying (or as we now know it...the historical volatility), dividends and interest rates. These six values are input into the pricing model and the output is an option premium. The output for the options pricing model is called the theoretical option premium, or as traders call it, “the theo”. This theoretical value rarely, if ever, equals the actual market price of an option.

This is because the forces of supply and demand push and pull the market prices of options outside the control of any options pricing model. Supply and demand for options are best understood in terms of fear and greed. As fear and uncertainty enter the market, for whatever reason and there are many, investors look for protection and turn to the options market to protect their positions.

For example, large institutions can take months to enter into or get out of a large position so the large institutions don’t and can’t jump in an out of positions like an individual investor. So, as the market enters a time of perceived higher risk (more fear and uncertainty) these institutions look for protection in the option markets in the form of protective puts or other protective options positions. Individual investors do the same for positions they are not inclined to exit for a long period of time, though the individual investor has less of an effect.

This perceived uncertainty (the fear factor) increases the demand for options as the market loads up on protective options position. This higher demand means that option sellers can
command a higher price in the options market. On the greed side, this added uncertainty leads to opportunity for speculative options traders, so the demand for options is compounded: options traders love volatility as you will come to learn in Top Gun Options.

**Simply put: Higher demand = Higher Option prices**

As the catalysts of fear in the market or within a certain stock subsides. The demand for protection subsides, so, option sellers cannot command as high a premium so prices naturally subside. The rules of supply and demand apply.

The forces supply and demand in the options market can be quantified by calculating the implied volatility of an option through a manipulation of the options pricing model.

![Figure 12 – Implied Volatility](image)

We don’t need to be Einstein and understand the math behind the calculation; we just need to understand the output of the pricing model.

Conceptually, using the option model to find implied volatility is really quite straightforward. Simply replace the theoretical price of an option with the actual market price of the option and then make volatility the variable to be calculated by the model. Solving for volatility the output of the pricing model is now the implied volatility of the option. The implied volatility is telling us what the market thinks the volatility of the underlying will be going forward as a potential one standard deviation move in the price of the underlying stock.

This means that the supply and demand of the option is reflected in the actual price of the option and the difference in the theoretical price and actual price reflects the perceived uncertainty of the market: quantified by the implied volatility of an option.

So what does this mean to us as option traders?
The Implied volatility lets us know how the market is feeling about the risk of the underlying stock and is a direct indication of the relative price of options: are they currently expensive or are they cheap? If implied volatility is high then the option prices are higher and if implied volatility is low then option prices are lower.

To an option trader this means: buy low and sell high....in terms of implied volatility.

This makes sense, because if we enter a long position (buy an option) when volatility is low the option premiums will be low. Then, if for some reason volatility spikes up we may be able sell the option back for more than we paid for it and make a profit, assuming other variables remain equal. Or, if we sell into an option position (go short) when volatility is high, when the volatility subsides, we may be able to buy the option back for a lower price and make a profit on the difference. We can anticipate the potential profit of changes in implied volatility by using Vega to see the effect of volatility changes on the price of an option.

You will learn more about how we account for volatility throughout Top Gun Options. Let's look at the relationship between historical volatility and implied volatility and some practical application of volatility

**Historical vs. Implied Volatility**

**Waste Management INC**

![Chart](chart.png)

Figure 12 – Historical vs. Implied Volatility

This is a chart is a comparison of the 30 day historical volatility of Waste Management INC. Waste Management, Inc. is the leading provider of comprehensive waste and environmental services in North America. HV is the green line plotted alongside the Implied Volatility (IV), the black line, of the ATM strikes for the previous six months.

Well the first question is why are not they closer to the same? Historical volatility is backward looking and based on actual price data and implied volatility is forward looking and based on sentiment and expectations (fear and uncertainty).
You can see some instances where IV and HV converge and diverge with each other. There are many catalysts that can cause this to happen, earnings reports are the most common event to create a divergence. Many stocks exhibit an increase in uncertainty in anticipation of earnings and Waste Management is no different. Waste Management reported earnings in early February and May. As we see on the chart that in 30-45 days prior to earnings, HV and IV had a significant divergence. Following earnings IV and HV converge tightly in February but not as tight in May. This is likely attributed to the overall market uncertainty with the European debt crisis, which caused a spike in overall market volatility.

An issue like the European debt crisis doesn’t just affect one stock or option, it affects the entire market and options traded on equities in the market. So, is there a way to see how the overall option market is reacting to a macroeconomic event such as this? The answer is yes and it is through Chicago Board Option Exchange’s Volatility Index: The VIX.

The VIX

The Chicago Board Options Exchange (CBOE) Volatility Index – The VIX – was introduced in 1993 and was originally designed to measure the market’s volatility implied by the at the money S&P 100 Index option prices. In 2003 the VIX measure was updated to reflect the volatility of the entire S&P index. Without going into more detail than needed, the current VIX now measures implied volatility by averaging the weighted prices of both SPX Puts and Calls over a wide range of strike prices, not just the ATM strikes. This makes it a much broader and more accurate measure of implied volatility.

As a tool the VIX essentially gives a thirty-day look ahead as to the market expectations of volatility. So the VIX is a measure of market sentiment; often called by professional traders the “Fear Index” as it reflects fear and uncertainty in the market. A scan of the VIX and its movement is a quick reference to where option prices will generally be: a high VIX means that on average option prices are high and a low VIX means that on average option prices are low.
This is a five year chart of the VIX. Working from left to right, we can see that during the bull market of 2006 and into 2007, the index stayed below 20 for the majority of time. This reflects the good investor sentiment during that period as investing fundamentals appeared solid to individual and institutional investors alike. Not much fear in the markets.

As we move into the second half of 2007 we can start to see uncertainty entering the market, likely as the big money from institutional investors, hedge funds and pension funds started to question the fundamentals of the market. This leads them to purchase put option on both the SPX and individual stocks, increasing demand for options and driving implied volatility in the options market up. The negative correlation of the VIX to stock market returns is well documented and this drives many hedge funds and pension funds to hedge their portfolios with both VIX and S&P options.

We see a little improvement in market sentiment in mid 2008, but then the credit crisis explodes in full force in late 2008. The credit crisis drove volatility to historically high levels as individual and institutional investors ran to options looking for protection. Gradually, implied volatility subsides as the government steps in with TARP and helps fund many of the tainted CDO’s and mortgage backed securities. As of this writing, uncertainty has entered the market again as debt concerns in Europe have the markets on edge.

In general, the VIX is negatively correlated with the Markets. When the markets are going down the VIX is usually going up. This is fear entering the market as indicated by a greater demand for puts and other protective option positions, driving up option prices.

As the market is climbing the VIX is normally descending indicating a relative comfort or complacency with the market, pulling option prices lower.
As options traders we need to be comfortable with volatility. Understanding what it implies for the market and the individual securities we choose for our underlying assets. Working with historical volatility, implied volatility and the VIX is a daily occurrence for option traders, so we need to keep them in our scan and understand the implications on our trades.

**Expected Volatility**

Let’s finish up our volatility discussion with expected volatility.

Implied volatility is presented to us as an annualized percentage of what the market expects the volatility of the underlying to be in the future. As option traders, we are rarely in a position for more than a few months. In practice, the IV of an option must be adjusted to represent the period of time desired, this will give us the Expected Volatility during the period of the trade, giving us the potential price swings of our underlying over the period of time of our trade.

**Caution folks...there will be some math.**

Adjusting implied volatility to estimate our potential volatility over the specific time we are concerned with involve just two steps. First, we have to de-annualize implied volatility to the one day expected volatility. Secondly, we have to determine the volatility of the number of trading days of our trade.

Our first step, de-annualizing IV, is simply dividing the implied volatility by the square root of the number of trading days in a year.

\[
\frac{\text{IV}}{\sqrt{\text{Trading Days}}} = \text{1-Day Expected Vol.}
\]

In practice, most traders assume 256 days in the trading year and the square root of 256 is 16. If we assume an implied volatility of 27% the equation looks like this.

\[
\frac{0.27}{\sqrt{256}} = \frac{0.27}{16} = 0.017 \text{ or } 1.7%
\]

And gives us a 1 day implied volatility of 1.7%.

This means that if a stock is trading at $100.00, in one days time it has a 68% chance of trading between $101.7 and $98.3 or simply +/- 1.7% of its price per day. Remember 68%
represents all the price possibilities within 1 standard deviation and covers the prices that occur roughly two-thirds of the time.

To complete the second step, finding what the expected volatility is of a period of time. Multiply the one-day expected volatility by the square root of the number of trading days in the time period.

\[
\frac{\text{IV}}{\sqrt{256}} \times \sqrt{\text{Number of trading days in period}}
\]

Again we assume our implied volatility is 27% and say that our trade time frame is one month and there are 22 trading days in a month. We solve for the one day implied volatility which we already know is 1.7% and multiply by 4.7, which is the square root of 22 and we an expected volatility of 8% over the next month.

\[
\frac{0.27}{256} \times \sqrt{22} = 0.017 \times 4.7 = 0.08 \text{ or } 8\%
\]

This is telling us that our stock has a 68% chance of closing within 8% of its current price in the next month. If our stock is at $100.00, it has a 68% chance of being between $92.00 and $108.00 in one month of trading.

You will find expected volatility a nice tool to use as we get into some of our options strategies. We can use it to set reasonable profit targets and check to see if our trade can actually work for us.

**Wrap Up**

So what did we learn?

Historical volatility is a measure of a stock’s past volatility and that it is based on passed closing prices of the stock, which are known facts. HV gives us an idea of the volatility potential of an underlying asset. We learned that implied volatility is an indicator of what the market thinks the volatility will be in a stock going forward and that this is expectation is reflected in the price of an option. High implied volatility means higher options prices and low implied volatility means lower option prices.

We learned that both implied volatility and historical volatility are expressed as a percentage representing a 1 standard deviation move in the price of the underlying asset. And we also learned how to project what our expected volatility is for an underlying over the time period of a trade.
We took a look at the divergence of IV and HV and we also learned about the VIX. These tools can be useful for trader's entry and exit decisions and determining what the market is thinking.

We have made a big dent in understanding volatility in this lesson. Volatility is so broad a subject that entire books have been dedicated to just this one topic. We will consider volatility in many of our trading tactics and learn to approach volatility from a practical sense throughout Top Gun Options.

In our next lesson we will introduce the foundation of our trading Discipline: Trade Planning. A solid plan is the foundation for Discipline, Risk Management and consistent Superior Execution.
Lesson 6 Quiz

1. T/F: Historical Volatility takes into account past, present and future stock prices?
2. Historical Volatility based on __________.
   a. A $1.00 Move in the stock.
   b. A 1 standard deviation move in the stock.
   c. Hearsay.
   d. Market expectation.
3. With regard to stock or option prices, standard deviation measures________.
   a. The average between stock price and option premiums.
   b. The average option premium.
   c. The statistical grouping of a stock’s price over time.
   d. The statistical grouping of option prices.
4. One standard deviation measures a group of prices which occur______.
   a. 100% of the time.
   b. 50% of the time.
   c. 95% of the time.
   d. 68% of the time.
5. A volatile stock has a ________.
   a. Wider range of prices.
   b. Narrow range of prices.
   c. Higher average price.
   d. Lower average price.
6. What is implied volatility?
   a. An options volatility.
   b. The markets expectation of a stocks future volatility.
   c. What the market thought past volatility should have been.
   d. Both a and b.
7. What does high implied volatility mean to an option trader?
   a. Option prices are high.
   b. The market is content.
   c. The market is nervous.
   d. Both a and c.
8. What does low implied volatility mean to an option trader?
   a. Option prices are high.
   b. Option prices are low.
   c. The market is nervous.
   d. The stock has a high P/E ratio.
9. What does the VIX measure?
   a. Implied volatility of the S&P.
   b. Historical volatility of the S&P.
   c. Implied volatility of all options.
   d. The divergence of Historical and Implied volatility.
10. What does a high level in the VIX indicate?
    a. A high demand for option.
    b. High option prices.
    c. Fear in the market.

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d. All of the above.
11. What does a low level in the VIX indicate?
   a. Markets are relatively comfortable.
   b. Low supply of options.
   c. We are in a bear market.
   d. Fear in the market.

Use the following data for questions 12 – 13.

Stock Price = $30.00
Implied Volatility = 22%
Trading Days = 25
Annual Trading Days = 256

12. What is the one day expected volatility?
   a. 1.375%
   b. 22%
   c. 2.2%
   d. 6.9%

13. What is the expected volatility over the 25 trading days?
   a. 1.375%
   b. 22%
   c. 6.9%
   d. 2.2%

14. What is the expected 1 standard deviation range of the stock over 25 days?
   a. $27.80 to $32.20
   b. $28.63 to $31.37
   c. $25.00 to $35.00
   d. $27.93 to $32.06
Lesson 7

Trade Planning

The most important trading floor for any trader, individual or professional, is the five-inch trading floor between his or her ears. Having the proper mind-frame and controlling emotions is critical to making good decisions under the pressure of the markets and, ultimately, to trading success. It all comes down to Discipline. We need to know why we are getting in, when to stay in and when to get out of a trade. At Top Gun Options a quality trade plan is the foundation for our disciplined execution in every trade.

Flying fighters in the US Navy we planned everything, from a simple 30 minute maintenance flight to a 7 hour combat mission. Every mission had an objective and we always had a plan to achieve our objectives. These plans spelled out exactly how we intended to achieve each objective. The team at Fox 3 Options learned how to plan and plan well.

At Fox 3 Options we were trading before we joined the Navy to fly fighters, so we had built up some habits about how we went about our business of trading. Some were good some were bad, but these habits lacked Discipline and continuity. Then one day, shooting the breeze at the Officer’s Club (which is where we solve all the world problems over a cocktail) it just kind of hit us; Why don’t we apply the same planning and execution disciplines that we use flying fighters in combat to our trading? After all, our combat plans defined many things, to include: our objective, tactical mindset, targets, Commit Criteria (our go-no-go decision), the Tactic we intend to use to achieve our objective, employment method to achieve the Tactic, our course of action (steps we are going to follow executing the plan), contingency plans in case things don’t go exactly as planned and we must also have a clear Exit Plan. So this tactical planning we used everyday out on the aircraft carrier, seemed a perfect fit for the options trading world as well!

You have to plan for combat in this manner, because combat is dynamic, it’s dangerous, the battlefield is in constant change and you don’t know where your enemy will strike from next. Sound familiar? Where did this Greek debt crisis come from, how about Enron or WorldCom? Which bubble is going to burst next? Who’s cooking the books at our favorite company? Well it seems to us, this definition of combat applies directly to the financial markets.

Which is why at Fox 3, “Trading is Combat”, because it is!

In this lesson we are going to share with you our planning process. Is it perfect and suited for everyone? We certainly like it and we believe that you will benefit by applying the same Discipline to your trading.
Defining A Plan

So just what is a plan? You don’t have to be a Rocket Surgeon to understand this one!

**A plan is a series of steps to achieve an objective.**

This makes sense if you’re going to hang some shelves in the garage or cook a pot roast. A plan is just a recipe and when it’s complete you have some more shelves in the garage or a pot roast for dinner.

But, how does this the definition work when you are playing in one of the most dynamic arenas in the world, where things are constantly changing and often appear to be directly against us? It still works, but the plan has to suit the environment where it is going to be executed and we are executing plans in one of the most complex environments in the world, the financial markets. So, we need to account for a few more things than cooking a pot roast.

When I am giving a presentation on planning, I always ask the crowd to write down the components of a plan. Invariably they are always slightly different and in many cases folks can’t break a plan down into its important components. This lesson will solve this issue.

**Why Plan?**

**Discipline**

A trade plan is the foundation for disciplined execution. It allows us to keep our head on straight when all the talking heads are telling us the world is falling apart. It memorializes our reason for being in the trade and helps us make good disciplined business decisions under the pressure of the markets. It is because we built a plan, before the heat was on, that allows us to remove as much emotion as possible from our trading. In short, a trade plan is our tool to keep us disciplined in a trade.

**Risk Management**

Risk management is built into the plan. We know exactly when to get out, what our maximum acceptable loss is for the trade and how we are going to get out or adjust the position to save profits or limit losses. We define all of this before we get into a tight spot where emotions can take over and lead us to bad decision making. Emotions: greed, fear, attachment to a trade, whatever the issue, will influence your decision making. If you think it doesn't, you are going to spend a lot of money realizing that you’re wrong. Laying out your risk parameters before being under the gun, will greatly assist you in suppressing your emotions and help you make good decisions.
In the Top Gun Options Pocket Checklist (OPCL), we layout planning guidelines for several different option tactics. In each, we identify our profit targets and maximum risk parameters for each trade to assist you in building your plan.

**Superior Execution**

When we get down to the brass tacks of trading, it’s all about execution. Being disciplined and mapping out our risk parameters before we are deep in trades, leads to Superior Execution. The decisions we make in the heat of battle are key to our success in trading. We have a saying flying fighters, “A bad plan executed well is better than a good plan executed poorly, but a good plan with good execution Discipline is unbeatable!” When you go through our Top Gun Options program, we will go over several options tactics and discuss optimum execution whether the market is trending favorable or unfavorable.

Ultimately **Discipline, Risk Management and Superior Execution** come down to the individual trader. As traders, we have to commit to being disciplined. We have to commit to sound Risk Management. We have to commit to achieving Superior Execution with our trading. It takes practice and courage to execute your plan, but the end result is consistent Superior Execution and more profits.

**Components of a Plan**

A plan has to be tailored to the environment we intend to execute. The planning process needs to flow sensibly, be easily understood and address as many potential scenarios as possible that can threaten the achievement of our objective.

The very first component in any plan is “The Objective”. As traders and investors it does not matter if you are trading options, stocks, commodities, bonds, currencies or anything for that matter. Our objective as traders and investors is universal:

**Make Money, Don’t Lose It!**

This is why we play in this financial arena; **there is no other reason.** We want to make money, not lose it! Every trade plan we create supports this objective...we want to make money, not lose it! If we are wrong in our trade, because we are not going to get them all right, we want to get out with minimal damage and keep our money to play another day.

Since this is our universal objective, we don’t need to write it down every time. It is our guiding precept for trading.

After the objective, a Fox3 trade plan has seven components, designed specifically for trading options. A Fox 3 trade plan...

...Defines our **Strategic Mindset**

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Once the planning process is understood, a trader can complete the plan in as little as 5-10 minutes. We will go through each one of these components in this lesson.

Some of these terms may be new to you and that’s because they have their roots in air combat, but they dovetail very nicely into our planning and, in our view, tighten our focus up another notch. We will explain each as we come across them, if not; there is a Fox3 Terms glossary in the back of the book for reference.

**Strategic Mindset**

Our Strategic Mindset is the stance we take regarding how we think our underlying asset (our target) or the market will perform given current financial climate. Strategic Mindset falls into one of four categories:

1. Bullish
2. Bearish
3. Neutral
4. Volatile

We can qualify our mindset if needed; we can be short-term bearish if we think something is overbought and might correct. Or we can be neutral to bearish or neutral to bullish. It just depends on our analysis of the current situation and guides our Tactic selection to fit our Strategic Mindset.

When developing our Strategic Mindset we take a big to small approach. We start with the global financial situation and drill down to specific sectors, then to the stocks within a sector using both fundamental and technical analysis. As options traders we always take a look at our main barometer, the VIX, to tell us what the market is thinking and how the current market is priced.

Our Strategic Mindset drives many our trading decisions. It helps us to analyze potential positions with an appropriate bias for the current market. It also gives us a baseline to challenge our own market assertions and those assertions of all the information we absorb. We don’t want to be mindless sheep following the talking heads on CNBC or a tip we hear at work. We want to be proactive in the development of our Strategic Mindset and verify or disqualify the information we hear around us.

**Target**
Our target is simply the underlying asset with which we are looking to open a position. We will focus on an asset because we have clearly defined our Strategic Mindset on this target and we think we can profit from an options position supporting this mindset.

There are literally thousands of optionable targets: Stocks, ETF's, futures, commodities. We will focus on stocks while going through Top Gun Options.

Commit Criteria

Commit criteria is our justification for entering in a trade. Commit criteria should be easily understood and explained in 1 – 3 sentences. Commit criteria is supported by our Strategic Mindset, our fundamental and technical analysis, and the volatility of the target.

Here is an example of what Commit Criteria might sound like if we had a bullish mindset on Freeport McMoRan (FCX).

“The recent pullback in FCX is exaggerated. The stock has come off its recent lows with heavy volume and appears to be at the beginning of bullish trend with a short-term technical price target of 70. Fundamentals remain strong and copper prices are rebounding.”

This is a valid Commit Criteria for entering a trade. Commit criteria memorializes why we are in the trade. During the course of a trade, if we can no longer justify our Commit Criteria then we get out, immediately.
Tactic

At Fox3 Options, a “Tactic” is the option position we are opening, and there are many different positions we can open using options: calls, puts, condors, butterflies, credit spreads, etc. In the Top Gun Options Pocket Checklist (OPCL) you will find 32 different option tactics.

In current options lingo this is referred to as a strategy, but to call this a strategy is not true to the words meaning. A strategy is a bigger vision that supports our “objective” and refers to a plan of “actions” to achieve our objective, in this case, our investment objective. The “actions” taken to achieve these goals are referred to as “tactics”. Example:

Objective: Make Money, Don’t Lose It!
Strategy: Use options to achieve our objective.
Tactics: An option position to support our strategy.

For instance: If a trader wants to earn income from stocks in their portfolio by selling covered calls. This supports our objective and the strategy is to earn extra income with options. The Tactic to achieve this extra income is to sell covered calls on stocks in their portfolio.

To us at Fox3 Options, this is a more correct way to add detail to our intentions. In short, a strategy tells us what we want and a Tactic is how we get what we want.

Tactical Employment

Tactical Employment is the set up for our option position. It includes:

- Leg Set Up
- Net Debit or Credit
- Max Profit potential
- Maximum Risk of the trade
- Break Evens
- Probabilities of success
- Greek Effects

Outlining Tactical Employment lets us know what we are getting into when we enter a trade. Think of Tactical Employment as defining the performance envelope for our trade. It defines the parameters, both good and bad, where the trade can perform.

Mid-Course Guidance

Mid-Course Guidance encompasses our trade management plan. The term comes from an air-to-air missile and refers to the control of the missile until just before it reaches its target. At Fox3, Mid-Course Guidance encompasses our Risk Management parameters in terms of profit goal and max allowable loss, threats to success, contingency plans and Eject Criteria.
Max profit goals and max allowable loss are independent trader decisions based on individual investment goals and risk tolerance. At Fox3 we are not trying to hit the ball out of the park on every trade, base hits can add up fast. When setting our max allowable loss, we determine the maximum we are willing to lose to see if this trade will work. This does not mean we have to wait to reach this point to get out, it is simply defining the most we are willing to let this trade work against us. This keeps us from saying to ourselves, “I just need a few more days for this to work!” or “I love this trade, it will come around”, and staying in a losing trade. If we hit our max allowable loss, we get out; lick our wounds and move on to the next trade.

Threats to success are occurrences that can negatively affect our position during the life of the trade. An example of a threat to our success: We were bullish and then implied volatility increased unexpectedly due to a negative economic report.

Contingency planning is simply having a basic game plan if our trade is not going per design: do we roll up, roll down or get out?

Our Eject criteria are our “no questions asked”, just get out of this trade, examples include: our max allowable loss limit is reached or our Commit Criteria is no longer valid.

Embedded in your options PCL tactics section is guidance for setting many of these parameters and can serve as great starting point for determining your own risk parameters.

Exit Plan

The Exit Plan is how we are going to get out of a trade. We never get into a fight unless we know exactly how we intend to exit. Factors for planning an exit include: a sound reason for exit, layout our closing trade set up, whether we are exiting prior to expiration or taking it all the way to expiration.

It is important to know exactly how you are going to exit a trade before the volatility of the markets gets the better of you.

Planning Complete

That’s the plan! It’s just a logical sequence of steps that encapsulates and memorializes our research, lays out the playing field for the trade, sets risk tolerance tripwires for action while in the trade and lines out how we will exit. Don’t trade without one!

Once you have the system down it will take 5 -10 Minutes max to complete and will keep you aligned very closely with our universal objective.

Make Money, Don’t Lose It!
Example Trade Plan

Google

Back in January 2010 we were beginning to think that Google (GOOG) was getting a little lofty in price. Even though the talking heads could not stop talking about how great GOOG was and it was going to the moon non-stop. At this point we took a short-term contrarian’s view. So we took a short term bearish Strategic Mindset on GOOG, 7 days, and decided to target GOOG with a bearish trade.

GOOG Trade Plan
January 7, 2010

**Strategic Mindset:** *BEARISH, Short term (7 days) on GOOG*

**Target:** *GOOG currently trading at 593.52*

Our commit criterion was simple:

**Commit Criteria:**
*Thinking GOOG is going to give some back in the short term with some of the uncertainty surrounding the release of various mobile devices and some profit taking. On the technical side, the 20 day MACD is diverging to the down side and RSI is indicating an overbought condition.*

We had some technical indicators and some fundamental uncertainty we thought would lead skittish traders to take some profits off the table. The Commit Criteria is short, sweet and it made sense. Little did we know at the time but this was a turning point for GOOG and it is off about 20% since this call.
Our Tactic was a Bear Call spread two strikes above where GOOG was trading. One of our intermediate tactics and in this instance it had a high probability of success.

**Tactic: Bear Call Spread on GOOG, 610/620**

![Bear Call Spread Graph]

Tactical Employment is petty straightforward and requires just a little math:

**Tactical Employment:**
- **Leg Set up:**
  - Sell JAN 610 Call at 3.90
  - Buy JAN 620 Call at 2.10
  - Net Credit: 1.80

- **Max Profit:** 1.80, 22% return on risk.
- **Max Risk:** 8.20
- **Breakeven:** 611.80
- **Probabilities:** 72% probability of max profit.

**The Greeks:**

**Theta (Time Value):** Time is our Friend, the longer that GOOG stays below our breakeven of 611.80 the stronger our chance of a profit.

**Vega (Volatility):** For this trade we want volatility to decrease for the duration of the position. An increase in volatility with GOOG can easily threaten our Breakeven (B/E) on the down side.

The last part of our Tactical Employment is an understanding of the Greek effects. In this case Vega and Theta is what we were concerned with and in a bear call spread. Theta is our friend because the longer that we stayed below our breakeven, the better our chance of profit. We also wanted to keep volatility in our scan because an increase in volatility could decrease our chances of success.
Midcourse guidance, which is our trade management plan, is relatively simple:

**Mid-Course Guidance:**

- **Profit Target:** Profit Target is 1.80, 22% return on risk. 100% return on premium.

**Threats to Success:**
- Jobs Data is being reported Friday, a positive report could cause a move to the upside.
- We are going against the longer-term trend of GOOG and buyers could step in if they don’t see any more down side.

**Eject Criteria/Contingency Plan:**
- Commit Criteria becomes invalid
- We will set our stop loss 25%...Eject if the premium gets to 2.25

Our threats to success over the trade are researched and listed so we don’t drop them out of our scan.

Our Eject Criteria is set, in this case we had a tight stop for two reasons. First, the short term on the trade did not give us too much time for it to reverse if it went strongly against us. Secondly, we were going against the long term trend and did not want to get caught in a minor downdraft. Our only contingency plan was to get out if the trade went against us, we did not want to roll this trade.

Finally, our Exit Plan was simple:

**Exit Plan**

- **Profit Target or Eject Criteria Reached.**
- To close position, simultaneously,
  - Buy JAN10 610 Call
  - Sell JAN10 620 Call

This is all there is to putting a plan together. Once complete it should fit nicely onto one or two pages. The actual trade plan is depicted below:
Trade Plan  
January 7, 2010

**Strategic Mindset:**  BEARISH, Short term (7 days) on GOOG  
**Target:**  GOOG currently trading at 593.52

**Commit Criteria:**
Thinking GOOG is going to give some back in the short term with some of the uncertainty surrounding the release of various mobile devices and some profit taking. On the technical side, the 20 day MACD is diverging to the down side and RSI is indicating an overbought condition.

**Tactic:** Bear Call Spread on GOOG, 610/620

### Tactical Employment:

**Leg Set up:**  
- Sell JAN 610 Call at 3.90  
- Buy JAN 620 Call at 2.10  
Net Credit: 1.80

**Max Profit:**  1.80, 22% return on risk.  
**Max Risk:**  8.20  
**Breakeven:**  611.80  
**Probabilities:**  72% probability of max profit.

**The Greeks:**

- **Theta (Time Value):** Time is our Friend, the longer that GOOG stays below our breakeven of 611.80 the stronger our chance of a profit.

- **Vega (Volatility):** For this trade we want volatility to decrease for the duration of the position. An increase in volatility with GOOG can easily threaten our B/E on the down side.
Mid-Course Guidance:
**Profit Target:** Profit Target is 1.80, 22% return on risk. 100% return on premium.

**Threats to Success:**
- Jobs Data is being reported Friday, a positive report could cause a move to the upside.
- We are going against the longer-term trend of GOOG and buyers could step in if they don’t see any more down side.

**Eject Criteria/Contingency Plan:**
- Commit Criteria becomes invalid
- We will set our stop loss 25%...Eject if the premium gets to 2.25

**Exit Plan**
1. **Profit Target or Eject Criteria Reached.**
2. **To close position, simultaneously,**
   - Buy JAN10 610 Call
   - Sell JAN10 620 Call

The time invested in putting a plan together is well worth the effort.

This trade ended up working out for us and we bought it back for 10 cents and made a 1.70 on the trade. We got out prior to reaching our profit target because we had made a nice profit in the short time the trade was open and market volatility, the VIX, was starting to show signs of life heading into earnings season back in January.

**Wrap Up**

Having a plan will substantially increase your trading Discipline; it lays out your Risk Management plan and will lead to consistent Superior Execution. You can complete your plan before or after pulling the trigger. If we complete the plan after executing the trade, it is because we are familiar with the target and are comfortable trading it. After we pull the trigger though, we sit back and fill out the plan immediately.

Our planning process represents the minimum knowledge we want to have before we open a trade and it is the tool that gives us the confidence we need to execute our trades with Discipline, manage our risk based on our comfort with the current market climate and consistently manage our trades with Superior Execution. You may want a bit more or a bit less in your plan, but our system provides a solid foundation for customizing your own trade plans to suit your trading needs.

Your Options Pocket Checklist (OPCL) contains a planning guide that will help you build solid plans every time. Plus, we will walk you through many trade plans as we go through Top Gun Options.
Lesson 7 Quiz

1. A trade plan is a foundation for________.
   a. Discipline
   b. Risk Management
   c. Superior Execution
   d. All of the above.
2. What is the definition of a plan?
   a. A series of steps to achieve an objective.
   b. A goal.
   c. Good intentions to do the right thing.
   d. Ingredients for a pot roast.
3. How many components in a Fox3 Trade Plan?
   a. 4
   b. 5
   c. 7
   d. 8
4. What is our universal objective as traders?
   a. Make and lose money.
   b. Trade often.
   c. Make money, and lose it.
   d. Make Money, Don’t Lose It!
5. What is Strategic Mindset?
   a. A Zen like trading technique.
   b. Our opinion on the underlying and/or market.
   c. CNBC’s opinion on Gold futures
   d. None of the above.
6. What is a target in a Fox3 Trade Plan?
   a. A stock.
   b. An ETF
   c. The underlying asset.
   d. All of the above.
7. What is the Commit Criteria in a Fox3 Trade Plan?
   a. The option position we are opening.
   b. The underlying asset.
   c. The opinion of the market.
   d. The justification for opening a trade.
8. What is a Tactic in a Fox3 Trade Plan?
   a. The option position we are opening.
   b. The underlying asset.
   c. The opinion of the market.
   d. A trade idea.
9. What is Tactical Employment in a Fox3 Trade Plan?
   a. An option spread.
   b. The trade set up.
   c. The performance parameters of the trade.
   d. Both b and c.
10. What is Mid-Course Guidance in a Fox3 Trade Plan?
   a. Market Sentiment.
   b. Trade closing set up.
   c. Trade Management Plan
   d. None of the above.

11. Why do we have the exit steps in a Fox3 Trade Plan?
   a. To specify our exit set up.
   b. So, we know how to get out of a trade before we get in.
   c. Identify the reasons to exit.
   d. All of the above.
Lesson 8

Long Call

The first Tactic that we will discuss will be the long call because it is the simplest option Tactic to understand. Most traders enter option trading having learned the markets as directional stock traders, meaning they buy a stock hoping that it will go up and they will ultimately profit from a directional move. The brave directional traders will also short stocks hoping to profit from a downward move in a stock. Options are directional instruments also; in fact a move in the underlying stock generally has the greatest effect on the value of our option. As we are learning, these instruments are different from stocks and there are many other variables that we need to monitor.

New option traders tend to buy a call as their first option position, they generally buy an out of the money call, because they tend to be the cheapest. Then have the underlying stock move in the direction they wanted and still they lose money. The same traders then blame the options and the market and say that options are too dangerous to trade, waste of money and they are just lining the pockets of those Wall Street jerks: the excuse matrix never ends. But for those traders who learn from their mistakes, take the time to understand the fundamentals and learn how to apply these lessons will begin to make profits. This is why we spend so much time on the fundamentals before we dive into the option tactics.

We don’t want you to make stupid mistakes. You may pick the wrong direction or be off on your timing but we don’t want you to make fundamental mistakes. As we go through this lesson, we will continue to drive home the fundamentals and also learn key execution and Mid-Course Guidance techniques for the long call.

In this lesson we are going to review the long call basics we covered in Options Indoc (OI). Then we will start to apply the fundamentals and see what happens to a long call as the market ebbs and flows by applying our Greek measures. We will pick an underlying, look at the OTM, ITM and ATM strikes then build a long call trade plan applying some of the Fox3 Option’s trading guidelines.

Strategic Mindset

Our Strategic Mindset for a long call is bullish. At its heart the long call is a directional play as we want our targeted underlying to go up.

We get to this bullish mindset because our fundamental analysis of the current market condition supports a bullish move in our underlying target. This is also supported by our technical analysis signaling a bullish move and finally the market volatility, the VIX, and the implied volatility of the target confirm a potential bullish move.

When building our Strategic Mindset we go from big to small. We start with our macro analysis, which means we are looking at the global and domestic market climate. This
drives us to sectors that should perform in the current market climate. Then we look for stocks within the sector that are leading the charge higher if we are bullish or lower if we are bearish. Buying a long call we clearly want to find bullish targets.

On the other hand, if we get a tip on a stock that sounds juicy, we may go backwards and start with how the target is positioned within its sector. Then follow the research back up to the macro level in order to confirm the tip before we take action. We don't want to jump into a trade blindly. We are always looking at the macroclimate of the financial markets and so should you, it is always in our scan and we are always challenging our own macro Strategic Mindset against current information.

**Long Call Definition**

Recall that the holder of a call option contract has the right – not the obligation - to buy the underlying equity at a **fixed** price - the Strike Price - by a certain pre-determined date - the expiration date. For this right the buyer of the option pays a premium.

Think of it like this. We are simply paying somebody money to hold onto a stock for us to buy at a specific price - the strike price - by a certain date – expiration - should we desire to do so.

During the life of the option, if the option to buy the stock at the chosen strike price becomes more expensive we can sell it back to the market and make a profit. We pocket the difference between what we paid for the option and what we sold it back to the market. Sometimes we can turn a quick profit.

**Long Call Profit and Loss**
The vertical axis of the PnL diagram denotes profit/loss and the horizontal axis denotes the price of the underlying equity. The line with the arrow is the profit profile and indicates the profit and loss performance of the call. The break even line is denoted by the dotted line coming from the vertical axis and the breakeven point is where the profit profile crosses the line. With the long call any time the price of the underlying is higher than the breakeven point the position is profitable.

By looking at the PnL we can determine the parameters of a long call trade:

- **Breakeven** = The Strike Price + The Premium Paid
- **Max Profit** = Unlimited
- **Max Loss** = The Premium Paid

The best way to learn is to jump right into an actual trade example.

**Goldman Sachs (GS) Trade Example**

Let’s assume our Strategic Mindset has just turned bullish on Goldman Sachs (GS). We have $2500 to invest and we want to target GS. Goldman is currently trading at around $145 on 29 May and we can only buy 17 shares of the stock with our $2500. Let’s take a look at using the principles that you will learn with Top Gun Options and use leverage to increase our success. By using the options market instead of the stock market, we will be able to control 100 or maybe more shares of GS for a specific period of time and for less than our spare cash to invest.

We have been following GS very closely since the SEC announced its investigation. Not just because the hearings were a great stage drama but we think GS is a great company and there’s going to be an opportunity to make some money here. Now that the dust is settling, we think buyers are going to step in and we want to beat the rush!

Fundamentally, we are assuming that our Strategic Mindset is supported by the macroclimate turning positive and that Goldman’s fundamentals are stellar. GS could be poised for a rebound.

On the technical side, GS has bounced off its closing low of around 134 and has rallied nicely off the bounce for about a week to around 145. We are led to believe that GS is going to enter a bullish phase for the next month or two and we want to take advantage of it.

We will look at various technical indicators throughout Top Gun Options, so you will get some exposure to technicals throughout our syllabus. Technical analysis is a Discipline all to itself and can be applied across many asset classes. When we refer to technicals in Top Gun Options, it is to share our conclusions or assumptions and give you a flavor of our analysis. We will soon be offering a technical analysis course, so stay tuned.
This is a six month chart of GS, looking back we can see that GS has a fair amount of price action. So, we can assume that this is a reasonably volatile stock. The SEC announced its investigation back in April (April 16th to be exact) and we can clearly see this by the precipitous drop in GS from about 185 to 160 in one day’s trading. This was followed by a steep selloff for the next month.

About mid-May we start to see an indication of a bottom to this sell off as GS started to consolidate for about a week around 140 and actually closed at 136 once during this consolidation period. GS then bounced nicely off of this closing low with moderate volume indicating a potential support level for GS and it is now showing signs of entering a bullish phase.

Using technical’s we never rely on just one indicator; we need to build a case to support our assertion: we need confirmation of our Strategic Mindset or we abort the trade. To find support for this assertion we look at the RSI (Relative Strength Index) and MACD (Moving average convergence divergence) of Goldman over the same period.
The RSI is the top indicator and the MACD is lower indicator. RSI is telling us that price action of Goldman is showing some signs of strength. The MACD has just had a bullish crossover indicated by the yellow arrow and is solidly beginning to trend upward, indicated by the yellow line under the index. There are a couple of other signals here, but we will save that for a different lesson. These indicators are lending support to our bullish mindset and potential buying strength to drive prices up over the next month or so.

How do we come up with a price target? Referencing figure 14, the yellow horizontal bars on the right side of the chart are Fibonacci price levels. Stocks tend to retrace price levels after a decline or advance to certain levels based on the most recent price decline or advance. Fibonacci price levels, or fibs as traders call them, are very useful tools in finding technical price targets based on these percentage retracements following an upward or downward swing in the price of a stock.

Some of the more common Fibonacci retracements are a 38.2% and 50% of the previous major move. Looking at our Fibs we can get our bullish price targets: a low price target of about 154 dollars and high price target is about 160. We don't always get two price targets, but in this instance it will prove useful. Is Goldman capable of reaching these levels? Well from looking at the chart is does seem reasonable, but we can build a stronger case for this by considering what the market thinks.

To determine if the market thinks we can reach our price targets, we turn to implied volatility. More precisely expected volatility.

The current ATM implied volatility is 41.7%. This is an annualized number so we have to find the one day expected volatility by de-annualizing the IV then extending it out over our trading period. We divide the IV by the square root of 256 then multiply it by the square root of the number of trading days remaining, 35 trading days.
We end up with an expected volatility of 15.4%.

This is telling us that over the time frame of the trade the Goldman has a 68% chance closing within 15.4% of its current price. This is a potential trading range of 122.70 to 167.30. Goldman clearly has the capability of meeting our price targets based on Expected volatility and our bullish mindset.

We don’t have to do this math every time, as the chart will often give us the info we need, but this is a good tool to analyze the capability of our target moving the amount we desire. As option traders, it is imperative that we know how to do this.

**GS Volatility Comparison**

Let’s see what Historical Volatility versus Implied Volatility is telling us.

This is a 3-month comparison of HV and IV, the black line represents IV and the green line represents HV.

We can see a pretty reasonable correlation between the two volatilities up until the SEC announcement where they both spiked in unison. Following the SEC announcement we can see that HV is and remains higher than IV, this makes sense since HV looks at past price data and the precipitous drop in share price will be averaged in for some time.

The IV is representing what the market thinks the volatility will be going forward with Goldman. We can see that the market eased a bit after the announcement, but with all the news coming in and then the public theatre of the government hearings, the volatility
spiked up again. Coming into the end of May we can see IV easing again. This could mean that some of the uncertainty around Goldman is beginning to ease up again. This is not overwhelming support for our Bullish Mindset, but it doesn’t hurt it.

However, we do know that option prices are positively correlated IV and IV is well above the norm. We will have to take this into consideration when we pick our strike.

**GS Strike Prices**

Figure 17 is an options chain for GS July Calls. We have decided we want to buy a call and we have some choices to make. What call to buy? With Goldman Sachs trading at $145.03, do we buy the ATM, ITM or OTM call?

![Goldman Sachs Options Chain](Image)

*Figure 17, July Calls*

We need to consider our exposure to time decay, volatility and potential for profit when looking at each. Let’s start with looking at the ATM call.

**GS ATM Call**

The ATM call is selling at the ask for $9.25 cents and the current bid is $9.20, a bid-ask spread of 5 cents. As a rule we try to get the best price for an option. Depending on how many contracts we are buying, we may try to take a bite out of the spread with a limit order. In this case, with one contract, we will assume we do a market order and get filled at the Ask of $9.25. This position would cost us $925.00.
Looking at the PnL for the ATM Call we see that our upside is unlimited. We know this is unlikely and a more reasonable maximum profit is most likely to be within our expected volatility of 15.4%, which is a move up to $167 for Goldman Sachs (this is not the target it is the reasonable maximum profit based on EV). Subtracting this from our breakeven of 154.25 a more reasonable maximum profit expectation is $1275. Our maximum loss for this trade is the premium paid of $925.00.

Some draw backs of the ATM trade: First, the trade is all time value and we need a $9.25 move above the strike of 145 to make any money on this trade. Second, the breakeven is above our lower price target of $154.00. Third, because this is an ATM we are at our maximum exposure to time decay and volatility, Theta and Vega.

Looking at the Greeks for the ATM call we see that we have a fifty three Delta. This is telling us that if Goldman stock price moves up or down by a dollar our premium will increase or decrease by 53 cents. The premium will actually increase by a penny or two more because of Gamma.

Traders also use Delta as a rough estimation of the probability that an option will finish in the money. ATM options have a near 50 Delta; this makes sense because the option has a 50% chance of going up or down. ITM options have a higher Delta; a Delta 80 for an ITM option would have about an 80% chance of finishing in the money. This does not guarantee a profit; it is just telling you that the stock has an 80% of finishing higher than the strike price. An OTM with a Delta of 25 is telling us that there is a 25% chance of the option finishing in the money. With our GS ATM option is roughly a 53% chance of expiring ITM.

Theta is telling us the rate of time decay; the ATM GS option will decay at 9 cents per day. As we get closer to expiration, time decay will accelerate and there will be not be any
remaining time value in the option when trading closes on expiration day. Theta is the enemy of this long position and is decreasing the value of this option every day.

Vega is telling us how much the option value will change given a percentage move in implied volatility. Our ATM options premium will increase or decrease by 21 cents directly with each percentage change in implied volatility. Both Theta and Vega are highest for the ATM options and both have a decreasing effect on the price of an option the further away from the money we go in either direction. We know that IV was elevated for GS, so we need to mitigate our exposure somehow.

Rho will have little if any effect on our position as it measures the change in premium based on a 1% change in the risk free rate of return, generally T bills. Option traders rarely pay much attention to the effects of Rho, because generally the Federal Reserve is not going to make a 1% move in the risk free rate over the period of an option trade. When trading longer dated options Rho is sometimes taken into consideration, we will not consider Rho in this strike.

Since all things do not remain equal, let’s look at a couple of examples at what happens to our option premium as the market ebbs and flows. Let’s say that after 5 days of trading GS is up by a dollar. Using the Greeks we can estimate what the options premium will be. We will also assume that this mildly bullish behavior has caused a modest drop of 5% in the options implied volatility.

From this one dollar move up, the value of the option will increase by its Delta of .53, so this adds to the options value. But, five days have passed and Theta is quantifying the effects of time decay. With a Theta of 9 cents, after five days our option has lost 45 cents due to time decay, almost negating the entire Delta move in the premium.

Having an even bigger effect is the decrease in implied volatility. We already know that IV is high because of the uncertainty around GS. But, with confidence returning, the IV has decreased indicating that traders are becoming more comfortable with GS. Resulting in a 5% decrease in IV, with our Vega of 0.21, this will cause the value of our option value to decrease by $1.05.

5 Days GS up $1

<table>
<thead>
<tr>
<th>Premium Paid</th>
<th>9.25</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delta</td>
<td>0.53</td>
</tr>
<tr>
<td>Theta = 5 X -0.09</td>
<td>-0.45</td>
</tr>
<tr>
<td>Vega: IV down 5% X 0.21</td>
<td>-1.05</td>
</tr>
<tr>
<td>New Premium</td>
<td>8.28</td>
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</tbody>
</table>

Adding this all up, we see that even though the underlying moved in our direction by a dollar, the value actually dropped by a dollar. This is due to our exposure to time and volatility, both having their biggest effect ATM.

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Let’s say we get some good news that the SEC’s case is not as strong as they once thought and we get a strong 10-dollar move in GS in our direction in 17 days. Well, this option is now solidly in the money and our Delta will have increased to reflect this. Considering Gamma we can estimate an average Delta over this move of about 68 which will add $6.80 to our premium.

Theta will actually be increasing slightly as we are closer to expiration, but we are also well in the money so Theta will have a smaller effect. The average Theta over the 17 days is 10 cents and after 17 days, time decay has eroded a $1.70 from our position.

Vega will also have a decreasing effect as this position goes into the money. Given our assumption that the SEC’s case is weakening, the implied volatility has dropped 11% as investor confidence in GS returns. We are estimating an average Vega of 15 cents over the seventeen trading days. So, our change in premium due to volatility is a decrease of $1.65.

**17 Days GS up $10**

<table>
<thead>
<tr>
<th>Premium Paid</th>
<th>$9.25</th>
</tr>
</thead>
<tbody>
<tr>
<td>Avg. Delta is 0.68</td>
<td></td>
</tr>
<tr>
<td>Theta 17 X -0.10</td>
<td>$6.80</td>
</tr>
<tr>
<td>Vega: IV down 11% X 0.15</td>
<td>$-1.70</td>
</tr>
<tr>
<td>New Premium</td>
<td>$12.70</td>
</tr>
</tbody>
</table>

Putting all this together the premium is now $12.70. A 37% gain over what we originally paid for the option. Also note that we have $10.00 of intrinsic value and $2.70 of time value remaining in this position; 75 cents above our break even.

If this is our scenario, we have some decisions to make. Do we stay in the trade or do we take profits? Taking profits is always a good decision and a 37% return in 17 days is very respectable. Remember, we don’t need to hit the ball out of the park every time, base hits add up fast. Taking profits at this point would be a sound, disciplined trade decision.

If we wanted to stay in the trade, we would want to reconfirm our bullish Strategic Mindset with an update of our fundamental and technical analysis. We have not reached our $160 high-end price target yet, and if we think we have a strong enough case for the move we could stay in. Staying in the trade is another reasonable business decision, so as long as we take the emotion out of the decision and look at the facts.

**OTM GS Strike**

Going two strikes OTM to the 155 strike, let’s see what we are getting for our money. The ask for the 155 Strike is $4.75 and the spread is 5 cents, so we will assume a market order.
for 1 contract and we would pay $475 dollars for the option contract. This option is almost 50% cheaper than the ATM strike, a good thing, in options though, you get what you pay for.
Looking at the PnL for the out of the money Call we see that our upside is unlimited. To keep ourselves grounded we can estimate a reasonable max profit based on expected volatility and on the upside this is a price move by GS up to $167. Our breakeven is much higher at $159.75 and a reasonable maximum profit expectation could be $725. Our maximum loss for this trade is the premium paid, $475.00.

The first drawback of this trade is if we hold this contract to expiration, we need a move up greater than 14.72 (from the current trade price of 145.03) to get any profit. The second drawback is if it reaches our upside target, we are not getting that great a return on our risk if we carry this to expiration. Our low price target for GS will not get us any profit. Lastly, the premium represents all time value, so we are losing money every day unless we get a big move up in GS.

Looking at the Greeks for the OTM it has a 36 Delta because Delta has a smaller effect on option premiums as we get further OTM. Delta is also telling us we 36% chance of expiring in the money. If GS expires above our strike but less than our breakeven, we still lose money, though we will get any intrinsic value in the option back.

Theta is a penny less than the ATM option because we are out of the money. This makes sense, because there is less of a chance that this position will be profitable, so the time is not as valuable as the ATM option.

Vega is slightly less than the ATM option but, not by much. Vega is still 20 cents, so moves in implied volatility can still have a big impact in this position. If we are right in our prediction and a big move up occurs. IV will likely drop as GS moves higher, hurting this position significantly.
We discard Rho for this analysis, as it will not likely have any impact on this position.

Let’s look at our scenarios and see how our OTM option performs as the market ebbs and flows. After 5 days of trading, GS is up by a dollar and we will make the same assumptions as we did for the ATM call.

From this one-dollar move, the value of the option will increase by its Delta of 36, so this adds 36 cents to the options value. But, five days have passed and Theta is racking up the effects of time decay. With a Theta of 8 cents, after five days our option has lost 40 cents due to time value, wiping out our entire Delta move in the premium.

Having an even bigger effect is the decrease in implied volatility, as confidence returns the IV has decreased as investors become more comfortable with GS. Leading to a 5% decrease in IV. With a Vega of 20, this will cause the value of our option to decrease by $1.00.

5 Days GS up $1

<table>
<thead>
<tr>
<th>Premium Paid</th>
<th>4.75</th>
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<tr>
<td>Delta</td>
<td>0.36</td>
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<tr>
<td>Theta = 5 X -0.08</td>
<td>-0.40</td>
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<tr>
<td>Vega: IV down 5% X 0.20</td>
<td>-1.00</td>
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<tr>
<td>New Premium</td>
<td>3.71</td>
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Adding this up, even with GS moving in our direction by a dollar, this position decreased by more than a dollar. This is because of our exposure to time and volatility and is also compounded by the weakness in Delta which cannot overpower the effects of time and volatility.

Next example: we get some good news for Goldman and we get a strong 10-dollar move in GS in our direction in 17 days. Even with this ten dollar move we are only at the money and still do not have any intrinsic value to the premium.

We get a little more help from Delta, which should be about 50, but we had an average Delta of about 43 on the way up. Giving us a $4.30 addition to the premium.

Theta has been working against us for 17 days in two ways. With time decay and as we get closer to the money, Theta gets bigger. Our average Theta over 17 days is about 9 cents per day, decreasing our premium by $1.53.

Implied volatility has decreased by 11% and Vega has actually increased as well. Vega is largest ATM and our premium gave up $1.65 due to the decrease in IV.
17 Days GS up $10

**Premium Paid**  
4.75

**Avg. Delta is 0.43**  
= 4.30

**Theta 17 X -0.09**  
= -1.53

**Vega: IV down 11% X 0.15**  
= -1.65

**New Premium**  
= 5.87

Putting all this together our estimated premium is $5.87. The premium for the option has actually increased by $1.12, a 23% return.

Again we are at a decision point. Is our Commit Criteria valid? Do we still see strength in the fundamentals and technical’s to support a still stronger move to the upside? If your risk tolerance and bullish mindset is strong enough you may want to let it ride for potentially more profit. Or, do we jump out with a 23% gain? Taking profits is always a good decision.

**Deep ITM GS Strike**

The $125 Strike is Deep ITM and is the most we can afford with our $2500 to invest. The market is asking $23.70 and the current bid is $22.70, making the spread $1.00. In this case we would place a limit order and offer the mark at $23.20. A limit order is just the way we tell the market maker what we are willing to pay for the option. It does not guarantee we will get filled like a market order does, but it allows us to have an opportunity to save some money on the transaction, in this case 50 bucks.

![Graph of Profit and Loss](image)

Paying so much more for this option we should expect to get something more out of it. Looking at the PnL for the in the money Call we see that our upside is unlimited, this is unlikely so keeping us grounded we reference expected volatility of GS over our trading period. This time our breakeven is much lower $148.20 and a run by GS to $167 gives us reasonable maximum profit expectation of $1880.

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The maximum loss for this trade is the premium $2320.00 which is about a $25.00 drop in GS share price. The breakeven is much lower than the ATM or OTM call at $148.20. This position only needs a move to the upside by $3.17 or more to be profitable. Putting our lower price target of $154 within reach, reaching this target would produce a nice 22% return.

Since this option is in the money, it has both time and intrinsic value; $3.17 time value and $20.03 of intrinsic. Intrinsic value is real value for the option and if GS does not move a penny and expires at $145, our option is still worth $20.03 and we will get this back. By either selling to close the position or exercising our right to buy GS at $125.

The Deep ITM (DITM) 125 strike has an 81 Delta. With an 81 Delta the option adjusts in value at 81% of the move in the stock, making this equivalent to owning 81 shares of Goldman Sachs. Many traders use Deep ITM calls as a stock replacement Tactic, 81 shares of GS just shy of $12,000, by purchasing an 81 Delta option we mimic the price performance of 81 shares for only $2320 for the time period of the contract. By looking at the Delta value we can see the equivalent number of shares our option represents.

Delta is also telling us that we have roughly an 81% chance of finishing in the money, in which case we will still recoup the intrinsic value of the option.

Theta is a penny less than the ATM option because we are deep in the money. Time value is also less than our ATM option, because there is higher probability that this position will be finish in the money. So the time is not as valuable as the ATM option.

Vega is 15 cents so moves in implied volatility can still have an impact in this position. If we are right in our analysis, IV will likely drop as GS moves higher. By going to a Deep ITM option, our exposure to volatility is lower.

Going Deep ITM has decreased our exposure to both Theta and Vega in both the value of their effect and the overall percentage effect on the position. Additionally, we have a very strong Delta that can overpower the effects of time and volatility with a bullish move in GS.
Let’s look at our scenarios and see what happens to our option premium as the market ebbs and flows. After 5 days of trading, GS is up by a dollar and we will make the same assumptions as our previous examples.

From this one dollar move the value of the option will increase by its Delta of 81, so this adds to the options value.

After five days our option has lost 40 cents due to time value, not as big an impact as with the ATM or the OTM call because we have decreased our exposure to time with the ITM option and because of our strength in Delta.

The change in implied volatility still has a big affect, but we are decreasing our exposure to IV because we are deep ITM. A 5% decrease in IV will cause the value of our deep ITM option to decrease by 75 cents.

### 5 Days GS up $1

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<th>Description</th>
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<tbody>
<tr>
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<tr>
<td>Delta</td>
<td>0.81</td>
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<tr>
<td>Theta = 5 X -0.08</td>
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<tr>
<td>Vega: IV down 5% X 0.15</td>
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<td>New Premium</td>
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</tbody>
</table>

Adding this up, even though the underlying moved in our direction by a dollar, the value of this position still decreased. The decrease was much less than the ATM or OTM call because of a couple of reasons: First, we have strength in our 81 Delta to counter time and volatility. Second, our exposure to time and volatility is decreased by being deep in the money and they have a smaller percentage effect on the position.

Next example: we get some good news for Goldman and we get a strong 10-dollar move in GS in our direction in 17 days. This ten-dollar move takes us very deep in the money and our Delta has averaged 89 in the climb so this will add 8.90 to our premium.

Our Theta value has actually decreased even though time decay accelerates as we get closer to expiration. This is because our time value component is shrinking the further in the money we go. While Theta gets smaller, the rate that time value is decaying is still accelerating as a percentage of the time value component. But this is all good news for us if we bought the deep in the money option. Our average Theta over the 17 days is about 5 cents so we lose 85 cents to time decay.

Implied volatility has decreased by 11% and Vega has actually decreased for the same reason as Theta. We are further in the money and our exposure to volatility is being reduced. The average Vega is about 9 cents so the 11% decrease in IV reduces the premium by 99 cents.
17 Days GS up $10

**Premium Paid**: 23.20
- Avg. Delta is 0.89 = 8.90
- Theta 17 X -0.05 = -0.85
- Vega: IV down 11% X 0.09 = -0.99
- **New Premium** = 30.26

Putting all this together our estimated premium is $30.26. This is almost all intrinsic value, real value in our option and just 26 cents of time value. This is a 30% gain in our investment in just 17 days.

Again, decision time, do we hold on to this position to try and get some more out of it or do we sell to close and take profits? Taking profits is always a good decision, but in this instance we do have some maneuvering room. If we decide to stay in, we have some downside protection, $6.80 worth. We could set a trailing stop around our low price target and lock in a 20% gain and see how GS performs. Since this option has the lowest breakeven and least exposure to volatility and time, we have some options if it is going our way.

**Which Strike to Choose?**

Options have lots of options! Having an understanding of the fundamentals we can make an educated choice as to the best option to suit our Strategic Mindset and research. Keep in mind, we just did a thorough analysis of three possibilities and it may have seemed time consuming to you. With practice and understanding of the tradeoffs, this will become second nature and you will be able to make these observations quickly. Breaking down our choices:

<table>
<thead>
<tr>
<th>GS @145</th>
<th>OTM</th>
<th>ATM</th>
<th>ITM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Premium</td>
<td>4.75</td>
<td>9.25</td>
<td>23.20</td>
</tr>
<tr>
<td>Intrinsic Value</td>
<td>0</td>
<td>0</td>
<td>20.00</td>
</tr>
<tr>
<td>Time Value</td>
<td>4.75</td>
<td>9.25</td>
<td>3.20</td>
</tr>
<tr>
<td>Break Even</td>
<td>159.75</td>
<td>154.25</td>
<td>148.20</td>
</tr>
<tr>
<td>Max Loss</td>
<td>475</td>
<td>925</td>
<td>2320</td>
</tr>
<tr>
<td>% Gain in GS to BE</td>
<td>10.1%</td>
<td>6.4%</td>
<td>2.2%</td>
</tr>
<tr>
<td>% Gain @ Low TGT (154)</td>
<td>-100%</td>
<td>-2.2%</td>
<td>25%</td>
</tr>
</tbody>
</table>
We have given ourselves three choices. Looking at the premiums it is clear that there are differences. The OTM is certainly the cheapest and the ITM is the most expensive, but we also know each have different strengths and weaknesses.

Neither the OTM or ATM has any intrinsic value, but the ITM option we chose has $20.03 of intrinsic value. If GS expires at 145, we will still get our intrinsic value out of the position.

Looking at the time value component, the ITM is the lowest so it has the least exposure to time and volatility. Time value is highest for the ATM position, so our exposure is the greatest.

As we look at the breakevens and consider our price targets, we have a low price target of 154 and a high price target for GS of 160 based on our technical analysis. The ITM option is the only choice that gives us profitable access to both targets. The tradeoff is that we have more capital at risk. The least risk is with the OTM option and the most risk is with the ITM option. But, GS has to gain in excess of 10.1% to be profitable with OTM option and the ITM option only needs 2.2% move to be profitable, while the ATM needs a 6.4% move to be profitable.

Considering our price targets and our ability to profit from what our research is telling us. It is clear that the ITM choice will give us a profit at both the high and the low targets. In fact we will have about a 25% gain if we reach our low price target of 154. Even though we have the most at risk, we can build in a max allowable loss in our Mid-Course Guidance to keep us from giving up our entire premium should things turn against us. This is where our success comes down to having the Discipline to execute our Risk Management plan.

It should be clear, at least in our view, that the only trade here is the ITM 125 strike. It is more expensive and we have more capital at risk, but it also allows us to profit sooner, reduces our exposure to time and volatility, is in our budget of 2500 dollars, puts our lower price target in play and, barring any unforeseen major events for GS and the macro economy, we can control our risk by building a max allowable loss into our trade plan. Once again, success coming down to disciplined execution.

GS 125 Strike Trade Plan

The trade plan is the foundation for maintaining our trade Discipline and memorializes our reason for getting into a trade. Sometimes we get caught up in the moment and forget our justification for getting in the trade.

Our objective is...Make Money, Don't Lose It! This is our only goal in trading. Our Strategic Mindset is bullish on GS and we are going to target GS with an options position. The trade plan looks like this:
**Strategic Mindset:**  
*BULLISH*

**Target:**  
*GS currently trading at 145.03*

**Commit Criteria:**  
*Think the pull back in GS is overdone. Price is attractive and the SEC case appears to be weakening. Fundamentals are good and technically it appears buyers are stepping in with bullish move in MACD and RSI.*

**Tactic:**  
*DITM 125 Strike Call*

**Tactical Employment:**
- **Leg Set up:**  
  *Buy JUL 125 Call at 23.20*
  *Net Debit: 23.20*

- **Max Profit:**  
  *Unlimited / 18.80, based on EV.*

- **Max Risk:**  
  *23.20*

- **Breakeven:**  
  *148.20*

- **Probabilities:**  
  *81% ITM / 47% of Profit*

**The Greeks:**
- **Theta (Time Value):** *Time is working against us.*
- **Vega (Volatility):** *A decrease in IV hurts this position. An increase is a somewhat positive, helps the premium and increases our chance of hitting price target, but also increases the chance of the stock dropping.*
Mid-Course Guidance:

**Profit Target:** Profit Target is 29.00, approximately the low price target of 154 (154.20 to be exact). If GS moves strong to low target will reset max allowable loss to retain some profit and look for more upside and high price target.

**Threats to Success:**
- Jobs Data is being reported Friday 4 Jun, could cause some Vol.
- SEC case strengthens or more filings
- We are calling a bottom in current price movement.

**Eject Criteria/Contingency Plan:**
- Max allowable loss 50%...Eject if the premium gets to **11.60**
- Commit Criteria no longer valid.

**Exit Plan**
1. **Profit target reached.**
2. **Eject criteria reached.**
3. **To close position,**
   - **Sell to close JUL 125 call**

---

**Planning Thoughts:**

Remember why we plan. The plan lays the foundation for Discipline; it lays out our risk parameters and tells us what to do when they are threatened. When we stick to our plan, we have Superior Execution. The bullet points below outline our Goldman Sach trade plan.

1. **Our Commit Criteria** is stated simply and summarizes our thoughts when entering the trade.
2. **Tactic** is simply the option position we are opening.
   a. Remember our objective...Make Money, Don’t Lose It!
   b. Our strategy is to use options to support our objective.
3. **The Tactic** is the options position.
4. **Our Tactical Employment** is simply the trade set up and the performance parameters for the trade.
   a. Since we took the time to calculate the expected volatility (EV), does this mean that we have a more reasonable expectation? Not necessarily, but it gives us good reference and if we happen to get a big move to the upside this number can help us make some smart decisions.
   b. Our Delta is 81, so we have an 81% chance of this trade finishing ITM by expiration.
5. **Mid-Course Guidance:**
   a. We define our price target in terms of the premium. If GS reaches our lower price target, it will be a 25% gain for us, so we just add a 25% pop to our premium and our lower price target in terms of premium is 29.
b. Our upper price target is a contingency, if the move up in price is strong and GS still shows bullish technicals and the fundamentals, we will reset our max loss above our breakeven and see if we can get some more out of this trade.

c. We define what we think are threats to success over the period of the trade, so we do not drop them out of our scan.

d. Eject Criteria / Contingency Plan:
   i. First we set our max allowable loss. At Fox3 Options, we never want to lose more than 50% of the premium, most of the time the stock will signal in some fashion that it is not going to cooperate before we reach this loss, so we may get out earlier. If it hits this number, we are out. If your risk tolerance is less than this then set a higher max allowable loss...25% is easily justifiable since we have $2320 dollars at risk and this would still give a bit of room for GS to roam in price.
   ii. Often market sentiment will change in the course of the trade, when this happens our Commit Criteria is no longer valid which negates the entire reason we got into the trade in the first place, so there is no reason to stay. Get your money out of the trade and save it for a better trade.


**GS Goes Against Us**

We aren’t going to win at every trade and we will not always achieve our objective, but we can always manage our losses. This is where Discipline is most critical! We have all said:

“There is no way my stock can go lower...”
“If I stay in I know it will come back...”
“I am right and the market is wrong!!...”

If you find yourself saying these types of things, just kick yourself. Then get back on the plan and execute with Discipline, these thoughts lead to big losses. Discipline takes courage and commitment, take your lessons learned from each trade, good and bad, go to the next trade and don’t worry about what could have been. Of course we all should have bought Apple at 3 bucks in 1997...GET OVER IT!

What could be in store for us if the market for GS goes against us? Again, we reference the Greeks to see the effect on our positions.

Assume we get a 5-dollar pullback in 5 days. Delta, will work strongly against us, but it will also decrease because of Gamma, so our average Delta is about 78 and will decrease in our premium by $3.90 cents.

Theta is still working against us and has actually increased, as we are getting closer to the money. Our average Theta works out to be around 9 cents, so we lose around 45 cents due to time passing.
Implied volatility is actually working for us. As the price decline is likely to increase, market uncertainty and investors will look for protection and create a higher demand for GS options, driving up IV. In this case we assume a 5% increase in IV will add 95 cents back to our position.

**5 Days GS Down $5**

<table>
<thead>
<tr>
<th>Premium Paid</th>
<th>23.20</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delta = .78 x 5</td>
<td>= -3.90</td>
</tr>
<tr>
<td>Theta = 5 X -0.09</td>
<td>= -0.45</td>
</tr>
<tr>
<td>Vega: IV up 5% X 0.19</td>
<td>= 0.95</td>
</tr>
<tr>
<td>New Premium</td>
<td>= 19.80</td>
</tr>
</tbody>
</table>

Adding all this up our estimated premium is $19.80. This has not reached our Eject Criteria, but our radar is certainly up and we will be examining our Commit Criteria to see if it is still valid or not. This is a volatile stock, so it may take some courage to stick to our guns here.

Let’s say we get some bad news on GS 17 days into trading that actually strengthens the SEC case and puts GS on its heels a bit and we are down 10 bucks by day 17.

Once again Delta is crushing us with an average Delta of 73 this knocks $7.30 off of our position. Theta is still eating away at our value and has taken $1.53 from us.

The news has created a spike in IV, which is going to help our position but will not overcome the other factors. The IV spike of 11% from when we got into the trade has added a $1.87 to our position.

**17 Days GS Down $10**

<table>
<thead>
<tr>
<th>Premium Paid</th>
<th>23.20</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delta = .73 x 10</td>
<td>= -7.30</td>
</tr>
<tr>
<td>Theta = 17 X -0.09</td>
<td>= -1.53</td>
</tr>
<tr>
<td>Vega: IV up 11% X 0.17</td>
<td>= 1.87</td>
</tr>
<tr>
<td>New Premium</td>
<td>= 16.24</td>
</tr>
</tbody>
</table>

Adding all this up, our estimated premium is $16.24. We still have not reached our max allowable loss of $11.60. BUT, our Commit Criteria made the assumption that the SEC case was weakening and this new news that the SEC has more evidence against GS invalidates our Commit Criteria. Sticking to our trade plan, we would make a disciplined business decision and get out of this trade. Yes it hurts to lose money, but there is no reason to stay in this trade if the reasons we got into it are no longer valid...HOPE does not equal Commit Criteria. We get out, lick our wounds and take our lessons learned to the next trade!

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Wrap Up

The long call is one of the easiest option trades to understand because it is a bullish directional tactic. If we are feeling bullish on a company we can leverage our trading capital for very nice profits. The key to successful call trading is understanding how the fundamentals will apply to your analysis and Strategic Mindset when picking the right strike to match your research and give you the best chance of profit.

We saw the characteristics of several different strikes for the same security. This applies to all options. Things that will change from stock to stock and option to option are: the HV of the stock, the IV of the option, the technical performance of a stock, where it is in its cycle, the fundamentals, how it performs in the current financial climate, the time to expiration, the Delta of the option and the price of an option. Obviously a lot of things to consider. But, having a solid grasp of the fundamentals will greatly assist you when picking the right strike for your trading dollar. Because, just like anything else, in options you get what you pay for.

Discipline is the key to long term option trading success. Do your very best to take the emotion out of your trading and treat it like a business. Because trading is a business and you would not start a business without a plan, so don’t trade without a plan.

Paper trade before you start with real money! Pick an underlying, do the same analysis we just went through. Pick a company with OTM, ITM and ATM strikes and run the trades and compare their performance. Build a plan for each and execute your plan!

Even in a paper account, apply the same Discipline to each trade as though it were real money. While we were training to be fighter pilots we had a saying, "Train like you fight, because in combat you will fight like you train!". This basically means that you need to take your paper accounts seriously before stepping into the real money accounts. Once you have put real money on the table, you will only be as good your practice.
Lesson 8 Quiz

1. As the holder of a call option you _________.
   a. Are obligated to buy at expiration.
   b. You have the right to sell until expiration.
   c. You have the right to buy until expiration.
   d. You receive a premium for your right.

2. What is the max loss of a long call?
   a. Unlimited.
   b. The premium paid.
   c. The premium received.
   d. The break-even minus the current stock price.

3. What is the max gain of a long call?
   a. Unlimited.
   b. The premium paid.
   c. The premium received.
   d. The break-even minus the current stock price.

Use the Wells Fargo (WFC) option chain above to answer the following questions.
Assumptions:
• Bullish on WFC
• Target Price $31.00
• Market Order
• Transaction costs excluded

4. What is the break-even of the October 26 Strike?
   a. $26.66
   b. $28.54
   c. $31.00
d. $28.51
5. What is the cost of 1 Oct 26 Call contract?
   a. $2.54
   b. $254.00
   c. $26.66
   d. $266.60

6. If WFC expires at $31.00, what is the profit per contract had we bought the 26 strike?
   a. $254.00
   b. $434.00
   c. $246.00
   d. $500.00

Reference the Greeks for the WFC 26 Strike above to answer the following questions.

7. If the underlying share price of WFC rises, what affect will the Delta have on the premium (excluding other factors)?
   a. The premium will increase dollar for dollar with the underlying stock.
   b. The Delta does not have an effect on option premiums.
   c. The premium will increase by a rate of 59 cents per $1 gain in underlying price.
   d. The premium will decrease by a rate of 59 cents per $1 gain in underlying price.

8. What is Theta telling us with reference to the premium for the WFC 26 Long Call (excluding other factors)?
   a. That the premium will decrease by 1 cent each day towards expiration.
   b. That the premium will increase by 1 cent each day towards expiration.
   c. Theta does not affect option's premiums.
   d. The premium will increase by 26 cents each day.

9. If our Eject Criteria is 50% of the premium paid, when do we close the trade?
   a. $1.50.
   b. $2.00
   c. $1.95
   d. $1.27

10. The ATM Implied Volatility is 40% and there are 100 trading days remaining, what is the expected volatility over the trading period?
    a. 33%
    b. 25%
c. 20%
d. 15%
11. What is the potential 1 standard deviation trading range of WFC?

a. $20.00 to $33.33
b. $25.00 to $35.00
c. $26.00 to $34.50
d. $20.00 to $30.00.
Lesson 9

Long Put

Like calls, puts are directional instruments, just in the opposite direction. Also the premiums gain and lose value is the opposite of the call. So it is fair to say that new option traders will make the same mistakes with puts as they do with calls. We will continue to drive home the fundamentals and also learn key execution and Mid-Course Guidance techniques for the long put.

In this lesson, we will review the long put basics. Then we will pick an underlying target, review several strikes then build a trade plan.

Strategic Mindset

The Strategic Mindset for a long put is bearish. The long put is a directional play and we want our targeted underlying to go down. Strategic Mindset is developed through fundamental, technical and volatility analysis supporting a bearish move. Generally, we take a big to small analysis approach, from the global picture down to individual sectors or stocks. We are always keeping the macroclimate in our scan so we can constantly analyze our current portfolio against the broader markets and spot turning points in the current market sentiment.

Long Put

Recall that the holder of a put option contract has the right, not the obligation, to sell the underlying equity at a fixed price, the strike price, by a certain pre-determined date, the expiration date. For this right the buyer of the option pays a premium.

In essence, we are simply paying somebody to allow us to sell a stock at a specific price before a certain deadline. Obviously we won’t execute this ‘right’ if it is not profitable. If, during the course of the trade, the option to sell the stock at the chosen strike price becomes more expensive, we can sell the option back to the market and make a profit. We pocket the difference between what we paid for the option and the price we sold it back to the market.
Long Put PnL

Long Put

Profit +
Breakeven
0
Loss -
Premium
Strike
Price

The Long Put is profitable anytime the underlying is lower than the breakeven point. If the stock goes to zero we will make the difference between the breakeven and zero. Breakeven is the strike price minus the premium. The max loss is limited to the premium we pay.

Breakeven = Strike - Premium Paid
Max Profit = Strike Price – Premium Paid
Max Loss = Premium Paid

Let's jump right into an actual trade example.

IBM Long Put Trade

So let’s assume our Strategic Mindset has just turned from neutral to a bearish on IBM. We think as IBM approaches earnings there will be some profit taking and it may challenge its support levels. We have $1000 to invest and we want to target IBM in some way with our 1000 bucks.

IBM is currently trading around $128.00 on 10 June and earnings are due 19 July. Giving us 25 trading days for the front month strikes.

We could short IBM, but this would incur some steep margin requirements and the risk is unlimited. So, we turn to the options market to leverage up our investment a bit and control our risk. By doing so, we will be able to control 100 or maybe more shares of IBM for the period of time we want to be in this trade and for less than our $1000.

Our Strategic Mindset is supported by the macroclimate turning neutral for IBM because demand in China and the Euro zone has subsided while they sort out their economic issues.
On the technical side, IBM has struggled to reach its 52-week high again creating a bearish double top and both RSI and MACD have been in a gradual decline. First support for IBM is at 121 and next support is around 115. With IBM trading around 128, we think there might be some money to be made here.

*Figure 18, IBM 1 Year Chart*

This is a twelve-month chart of IBM, we can see that IBM has had a nice run in the last 12 months. We have drawn our support lines at 121 and at 115, 121 is first support and around 115 is second support. We can also see that after IBM’s nice run through January, that IBM has given up its steam and traded sideways for several months, albeit kind of choppy.

If we look at the high in January we can see that the uptrend was solidly broken and this high was not challenged again until the end of May. However, the price never got to the high, this is the slightly bearish double top for us.
This supported by both a RSI and MACD.

**Figure 19, IBM Oscillators**

RSI is our stronger case for a bearish move, RSI has been on a decline since well before the high set in January and is showing us a bearish divergence over the period of time we are observing. Plus IBM’s most recent price increase has been on weak relative strength.

MACD has also been on a gradual decline over the same period telling us IBM is looking for a direction to go. We think the direction will be down and IBM is likely to test its recent support at 121, if it breaks through 121 the next support is around 115.

Although we think IBM is a terrific company, we are taking a contrarian’s view for the near term and think traders may be inclined to take some profits leading into July earnings. So, we are taking a bearish mindset on IBM and will Target IBM with a put option. Again we need to ask ourselves if IBM is capable given its current volatility of reaching support in our trading time frame of 25 trading days.

To answer this we will calculate the expected volatility. The current ATM implied volatility for IBM is 21 percent, applying our formula we divide the IV by the square root of 256, then multiply it by the square root of the number of trading days remaining and the square root of 25 is 5.

\[
\frac{0.21}{\sqrt{256}} \times \sqrt{25} = 0.013 \times 5 = 0.066 \text{ or } 6.6\%
\]

We end up with an expected volatility of 6.6%.

Telling us that over the time frame of the trade the IBM has a 68% chance of closing within 6.6% of its current price of $128.51, a potential trading range of $120.03 to $136.99. IBM clearly has the capability of reaching our support of 121 based on expected volatility.
We don’t have to do this math every time, as the chart will often give us the info we need. This is a good tool to analyze the capability of our target moving the amount we want it to move and as option traders we should be able to do this.

**Historical vs. Implied Volatility**

This is a 6-month comparison of HV and IV, the black line represents IV and the green line represents HV. We have a bit of a mixed bag with volatility; HV is actually higher than IV, which is not surprising given the price action in recent months. This certainly supports IBM’s price ability to reach our support level. IV remains elevated likely because of the macro economic situation. As we approach earnings in a month it may increase a bit but we are more concerned with the macroeconomic catalyst.
Looking at the July strikes for IBM we have some choices to make. Do we buy the ATM put or in this case the closest to the money put, do we buy an ITM put or do we buy an OTM put? We will need to consider our exposure to time decay, volatility and potential for profit when looking at each. We will consider the ATM strike first, in this case, the nearest to the money.

IBM ATM Put

The 130 Strike ATM put is selling at the ask for $4.05, the current offer is $3.95 cents. The spread is 10 cents, so we will assume we are filled with a limit order at $4.00, saving us 5 bucks per contract. Notice that this strike is actually slightly in the money, so we have both intrinsic and time value at this strike.
We see that our upside is substantial; however, IBM is not going out of business any time soon. Based on expected volatility a more reasonable maximum profit is most likely to be within our 1 standard deviation and on the downside this would be a price move by IBM down to $120. Looking at our breakeven of $126.00 a more reasonable maximum profit could be $600. Our maximum loss for this trade is the premium paid of $400 per contract. The drawback of this strike is that we are at our maximum exposure to both time decay and implied volatility.

Looking at the Greeks for the ATM put we have a negative fifty-seven Delta. Puts have a negative Delta and as stock prices go down we subtract the Delta, which gives us a net positive change in premiums.

This position is losing 5 cents a day to Theta. Time decay effect puts the same way as calls. Vega is 15 cents so moves in IV can have a substantial impact on premiums. This is the ATM strike so we are at our maximum exposure to time and volatility.

Let’s say that after 5 days of trading IBM is down by a dollar, using the Greeks we can estimate what the options premium will be. We will also assume that this mildly bearish behavior has caused a 1% increase in the option’s implied volatility.

From this one dollar move down, the value of the option will increase by it Delta of -0.57, so this adds to the options value. Five days have passed and with a Theta of 5 cents our option has lost 25 cents due to time decay. The increase in IV, this bearish move in IBM has led to some uncertainty so traders have upped the demand for protective puts. This increase in demand has increased IV by 1%, adding 15 cents to our premium.
When we add this all up, we can see that even though we are not at our breakeven price, we are still making money. This is because the effect of time has been overcome by the options Delta and Vega. A conservative investor might be tempted to step out with an 11% gain in 5 days, which is a good return and taking profits is always a good decision. But if you believe strongly in your reasons for being in the trade, you would be justified in letting it ride as well.

Let’s say the market turns bad and profit takers step in to capture their gains in IBM and IBM shares are pulled down by 5 dollars in 15 days of trading, this is good for us.

This option is now solidly in the money and our Delta will have increased to reflect this movement. Considering Gamma, we can estimate an average Delta over this move of about negative 69 which will add 3 dollars and 45 cents to our premium.

Theta will actually be increasing slightly as we are closer to expiration, but we are also well in the money so Theta will have a smaller effect. The average Theta over the 15 days is 7 cents, after 15 days, time decay has eroded our premium by $1.05.

Vega will also have a decreasing effect as this position goes into the money, but also, given the drop in IBM, IV will likely increase as investors look for protection. We will assume a 4% increase in IV and an average Vega of 10 cents, which will add 40 cents to our premium.

Putting all this together the premium is now $6.80, which is a 70% gain on our premium and we would have some decisions to make. Do we stay in the trade or do we take profits?

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If we wanted to stay in the trade, we would want to reconfirm our bearish Strategic Mindset with an update of our fundamental and technical analysis. On the other hand, a 70% gain in 15 days is excellent and at Fox3 Options, we would likely be taking our profits and running! We are not swinging for the bleachers on every trade! Don’t be greedy, balance your profit target, the time in the trade, time to expiration, profit in hand and other opportunities that may be out there in the market in making this decision.

**IBM OTM Put**

Going one strike out of the money we will look at the 125 strike. The ask for the 125 strike is $2.06 and the spread is 6 cents, not too much to be concerned with so let’s assume a market order. We are buying 1 contract and pay $206.00 for the option contract. This option is almost 50% cheaper than our ATM strike, but you get what you pay for in options.

Our upside is substantial but unlikely, to keep ourselves grounded we can estimate a reasonable target based on expected volatility to be a price move by IBM down to 120. This time our breakeven is lower at $122.96 and a reasonable maximum profit expectation could be $294, over 100%. Our maximum loss for this trade is the premium paid, $206 and with IBM trading around 128.50 we need a move down greater than $5.54 to get any profit at expiration.

The good thing about this trade is it’s cheaper than the 130 strike, but our breakeven is lower and we need a bigger move in IBM to see any profits.

The 125 strike has a negative 33 Delta. Recall that Delta has a smaller effect on option’s premiums as we get further out of the money. Theta is 5 cents, the same as the 130 strike. This strike is also close to the money, just not as close as the 130 strike. Vega is slightly less than the 130 strike at 14 cents, so moves in implied volatility still have a big effect. We will...
discard Rho for this analysis, as it will not likely have any impact on this position.

Let’s consider our scenarios and see what happens to our option. After 5 days of trading, IBM is down by a dollar. We will make the same assumptions as we did for the ATM put.

From this one-dollar move in IBM, the option’s premium will increase by its Delta of negative 33. Again, as stocks go down we subtract Delta and since Delta is negative this is a net positive for the premium.

Theta is 5 cents, after five days our option has lost 25 cents due to time decay, negating most of the Delta move. An increase in IV has helped this position by adding 14 cent due to the 1% increase in IV as IBM drops in price.

5 Days IBM Down $1

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>Premium Paid</td>
<td>2.06</td>
</tr>
<tr>
<td>Delta</td>
<td>0.33</td>
</tr>
<tr>
<td>Theta = 5 X -.05</td>
<td>-0.25</td>
</tr>
<tr>
<td>Vega: IV up 1% X 0.14</td>
<td>0.14</td>
</tr>
<tr>
<td><strong>New Premium</strong></td>
<td><strong>2.28</strong></td>
</tr>
</tbody>
</table>

Adding this up, even though we have not reached our breakeven we are still profitable because Delta and Vega are saving the day for us. A 10.6% gain in 5 days is good by any standard and taking profits is certainly acceptable.

Now let’s look at another example: Things turn south for IBM and it’s down 5 bucks in 15 days. With IBM currently trading at $128.50, we are now in the money by $1.50. But we still are not at our breakeven of $122.96. Looking at the Greeks the story is not all bad.

We get a little more help from Delta, which should average about negative 42 on the way down, adding $2.10 to the premium. Theta has been working against us for 15 days and the average Theta is 7 cents, so we can knock a $1.05 off the premium. Implied volatility has helped us out here with an average of 10 cents we can add 40 cents to the premium.

15 Days IBM Down $5

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<table>
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</thead>
<tbody>
<tr>
<td>Premium Paid</td>
<td>2.06</td>
</tr>
<tr>
<td>Delta</td>
<td>2.10</td>
</tr>
<tr>
<td>Theta = 15 X -.07</td>
<td>-1.05</td>
</tr>
<tr>
<td>Vega: IV up 4% X 0.10</td>
<td>0.40</td>
</tr>
<tr>
<td><strong>New Premium</strong></td>
<td><strong>3.51</strong></td>
</tr>
</tbody>
</table>

DISCIPLINE | RISK MANAGEMENT | SUPERIOR EXECUTION
Putting all this together our estimated premium is $3.51. A 70% increase in our premium. At this point we would be getting out of this trade. With only 10 days of trading left, time decay is going to accelerate and potentially rob of us our profit, so we would take the money and run!

**IBM ITM Strike**

Since we have $1000 to invest, let’s look at what we could get if we go in the money and invest most of our $1000. Choosing the 135 strike, the ask is $7.35 and the bid is $7.25, a 10 cent spread, so we will assume a limit order at $7.30, saving 5 bucks. We are paying more for this option, so we should get more for our money.

Maximum profit is unlikely, managing our expectations we look at the expected volatility and a down swing in IBM to $120. The breakeven is much higher at $127.70 and a reasonable maximum profit expectation could be $780, still over a 100%.

Maximum loss for this trade is the premium of $730 dollars which would require $6.50 increase in IBM. Possible, but based on our analysis seems pretty unlikely. With the higher breakeven at $127.70 so we only need a move down by 81 cents for this position to be profitable.

Since this option is ITM, it has time and intrinsic value, 81 cents of time value and $6.49 cents of intrinsic. This is also serving to reduce our exposure to time and volatility.

The Delta for the 135 strike put is negative 81, since we are deeper in the money our Delta is stronger and will work harder for us with a move in our direction. Delta is also telling us that we have an 81% chance of finishing in the money. This does not mean we have an 81% of making a profit, just that there is an 81% chance of IBM finishing with some remaining intrinsic value.
Theta is lower because time value is smaller the further in the money we go. Vega is also less, because Vega decreases as we get further away from ATM. We will discard Rho for this analysis.

Looking at our scenarios, after 5 days of trading, IBM is down by a dollar. From this one-dollar move the value of the option will increase by its Delta of negative 81, so this adds to the option's value. Theta is 3 cents, after five days our option has lost 15 cents due to time decay. Not as big an impact as with the ATM or the OTM put because we have decreased our exposure to time with the in the money option and because of our strength in Delta.

The change in implied volatility still has a big effect, but we are decreasing our exposure to IV because we are deeper in the money and the percentage effect on premium is much less. A 1% increase in IV will cause the value of our option to increase by 11 cents.

### 5 Days IBM Down $1

<table>
<thead>
<tr>
<th>Premium Paid</th>
<th>7.30</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delta</td>
<td>0.81</td>
</tr>
<tr>
<td>Theta = 5 X -0.03</td>
<td>-0.15</td>
</tr>
<tr>
<td>Vega: IV up 1% X 0.11</td>
<td>0.11</td>
</tr>
<tr>
<td><strong>New Premium</strong></td>
<td>8.07</td>
</tr>
</tbody>
</table>

When we add this all up, we can see that our strength in Delta easily overcomes the time decay component and we also get a pop from IV. We are profitable by about 10%, pretty good for 5 days work. But, with such a high breakeven it may be worth letting it ride for a while.

Again let's say the slide in IBM continues and is down by 5 bucks in 15 days. This five-dollar move takes us very deep in the money and our Delta has averaged negative 95 on the way down so this will add $4.75 to our premium. Theta is knocking 45 cents off of the premium after 15 days. IV is helping out to the tune of a 36 cent add to our premium.

### 15 Days IBM Down $5

<table>
<thead>
<tr>
<th>Premium Paid</th>
<th>7.30</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delta</td>
<td>4.75</td>
</tr>
<tr>
<td>Theta = 15 X -0.03</td>
<td>-0.45</td>
</tr>
<tr>
<td>Vega: IV up 4% X 0.09</td>
<td>0.36</td>
</tr>
<tr>
<td><strong>New Premium</strong></td>
<td>11.96</td>
</tr>
</tbody>
</table>
Putting all this together, our estimated premium is $11.86. This is almost all intrinsic value with just 36 cents of time value. This is a total of 6.5% percent gain in our investment in 15 days!

Again this would lead to decision time. Do we hold on this position to try and get some more out of it? Do we sell to close and take profits? Taking profits is always a good decision, though we have some maneuvering room in this case. If we decide to stay in we have some upside protection, $4.30 to be exact. So we could reset our Eject Criteria to more than our original premium to ensure a profit and see how IBM performs.

**Choices**

Having an understanding of the fundamentals we can make an educated choice on the best strike to suit our Strategic Mindset and research. Keep in mind, this analysis of the three strikes may have seemed time consuming to you, but with practice and understanding of the tradeoffs, this will become second nature and you will be able to make these decisions quickly.

<table>
<thead>
<tr>
<th>IBM@ 128.51</th>
<th>OTM</th>
<th>ATM</th>
<th>ITM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Premium</td>
<td>2.06</td>
<td>4.00</td>
<td>7.30</td>
</tr>
<tr>
<td>Intrinsic Value</td>
<td>0</td>
<td>1.49</td>
<td>6.49</td>
</tr>
<tr>
<td>Time Value</td>
<td>2.06</td>
<td>2.51</td>
<td>0.81</td>
</tr>
<tr>
<td>Break Even</td>
<td>122.94</td>
<td>126.00</td>
<td>127.70</td>
</tr>
<tr>
<td>Max Loss</td>
<td>206</td>
<td>400</td>
<td>730</td>
</tr>
<tr>
<td>% Loss in IBM to BE</td>
<td>4.3%</td>
<td>2%</td>
<td>0.6%</td>
</tr>
<tr>
<td>% Gain @ 1st Support</td>
<td>94%</td>
<td>125%</td>
<td>93%</td>
</tr>
</tbody>
</table>

*Table 11, IBM Put Choices*

We have given ourselves three choices; looking at the premiums it is clear that there are differences. The OTM is certainly the cheapest and the ITM is the most expensive, but we also know each have different properties and benefits. The OTM does not have any intrinsic value, but both the ATM (our 130 strike which is nearest the money) and the deeper ITM have intrinsic value, “real value”.

The time value component the deeper ITM is the lowest so it has the least exposure to time and volatility. With IV elevated this is good, but we are bearish and any decrease in IBM is likely to be accompanied with an increase in IV, so some exposure is ok.

As we look at the breakevens, consider our price targets, which we have based on our technical support of 121 in the short term. We need to balance our ability to profit from a downward move even if we do not reach support in the trade time frame. So, we look at
our breakevens, the move required to be profitable and capital at risk to find the balance. This is based on individual trader goals and risk tolerance.

We can see that IBM has to drop by over 4% for the OTM put to be profitable and for the deeper ITM put, IBM needs to drop less than 1%. The nearest the money put, the 130 strike put, is right in the middle and is a nice balance of risk vs. reward. If we do get all the way to our support level of 121, the middle strike put gives us the highest return by over 30%. Since we have 1000 bucks to invest, we can buy 2 contracts.

It is a tough choice between the Deeper ITM put and the near the money put. But, since we can afford to buy two 130 strike put contracts with our $1000 bucks and still have 200 dollars leftover. The middle strike seems like it might be a good course of action and reach a comfortable risk reward balance. Picking the 130 strike, let’s build a trade plan.

**IBM Long Put Trade Plan**

**OBJECTIVE:** Make Money, Don’t Lose It!

A trade plan is the foundation for maintaining our trade Discipline and it memorializes our reason for getting into a trade. Increased trade Discipline equals consistent Superior Execution and a trade is the toll for smart decision-making.

---

**IBM Trade Plan**
**June 9, 2010**

**Strategic Mindset:** BEARISH

**Target:** IBM currently trading at 128.51

**Commit Criteria:**
Thinking there is likely to be some profit taking going into earnings in July. A recent bearish double top and decreasing strength in RSI and MACD indicate that investors are beginning to take profits. This may accelerate into earnings.

**Tactic:** ATM 130 Strike Put
Tactical Employment:

Leg Set up:  *Buy 2 JUL 130 Puts at 4.00*
Net Debit:  4.00 / 800.00

Max Profit:  *Substantial / 6.00, based on EV.*
Max Risk:  4.00 / 800.00
Breakeven:  126.00
Probabilities:  57% ITM / 40% of Profit

The Greeks:

*Theta (Time Value):* Time is working against us.

*Vega (Volatility):* A decrease in IV hurts this position. An increase is a somewhat positive, helps the premium and increases our chance of hitting price target, but also increases the chance of the stock going up.
Mid-Course Guidance:

**Profit Target:** Profit Target is 6.00, approx. half way to support. If IBM moves strong toward support, reset max allowable loss to retain some profit and look for more upside.

**Threats to Success:**
- Jobs Data being reported Friday 2 July might not be what is expected.
- Earnings Monday after expiry. Positive news could lead to some buying into earnings.

**Eject Criteria/Contingency Plan:**
- Max allowable loss 50%...Eject if the premium gets to 2.00
- Commit Criteria no longer valid.

**Exit Plan**
1. Profit Target Reached.
2. Eject Criteria Reached.
3. To close position,
   - Sell to close JUL 130 Put

---

**Planning Thoughts:**

Remember why we plan. The plan lays the foundation for Discipline, it lays out our risk parameter and tells us what to do when they are threatened and when we stick to our plan we have Superior Execution. The bullet points below outline some of our thought with this trade plan.

1. We believe that IBM is going to test its support of 121 in the next 25 trading days, so our Strategic Mindset is bearish on IBM.
2. Our Commit Criteria are stated simply and summarize our thoughts when entering the trade.
3. Tactic is simply the option position we are opening.
   a. Remember our objective...Make Money, Don’t Lose It!
   b. Our strategy is to use options to support our objective.
   c. And our Tactic is the options position.
4. Our Tactical Employment is simply the trade set up and the performance parameters for the trade.
   a. The expected volatility that we calculated did not give us an iron clad prediction but if we happen to get a big move this number can help us make some smart decisions.
   b. Our Delta is -57, so we have a 57% chance of this trade finishing ITM by expiration.
5. Mid-Course Guidance:
a. We define our price target in terms of the premium. In this case we would be happy with a 50% gain and this would occur about half way to our support. So we set our profit target at a premium of 6 dollars.

b. If we happen to like the momentum of the decrease based on technicals, we may reset our max loss so that we ensure a profit. (i.e., if IBM drops strongly to the 123-125 range and our premium jumps around 6 dollars, then we reset our Eject Criteria to 4.50, thus ensuring a 10ish% gain, while we wait and see if IBM has more downside to it. If it flinches to the upside, we would likely get out and take profits.)

c. We define what we think threats to success over the period of the trade so we do not drop them out of our scan.

d. Eject Criteria/Contingency Plan:
   i. First we set our max allowable loss. At Top Gun Options we never want to lose more than 50% of the premium. Most of the time the stock will signal in some fashion that it is not going to cooperate before we reach this loss, so we may get out earlier, but if it hits this number we are out.
   
   ii. Often market sentiment will change in the course of the trade, when this happens our Commit Criteria is no longer valid which negates the entire reason we got into the trade in the first place. So there is no reason to stay in the trade. Get your money out of the trade and save it for a better trade.


We aren’t going to win at every trade and we will not always achieve our objective, but we can always manage our losses. This is where Discipline is most critical; don’t get sucked into loving your trade so much that you can’t see the forest for the trees. Stay focused, stay on plan and execute with Discipline!

**IBM Goes Against Us**

We already looked at the profit potential of our trade while researching them. Let’s take a look at the downside and see what could be in store for us if this trade goes against us.

Assuming we get a 1-dollar climb in 5 days: Delta will work against us, remember when stocks go up we add Delta and since deltas for put are negative, this is a net decrease in our premium of 57% of the move which is 57 cents. Theta is still working against us at 5 cents per day and after 5 days we have lost 25 cents to time decay.
Implied volatility is working against too. The increase is likely to ease market uncertainty, less fear, so the demand for protection will be less and IV will likely drop. A 1% drop in IV this will take 15 cents from our premium.
5 Days IBM Up $1

<table>
<thead>
<tr>
<th>Premium Paid</th>
<th>4.00</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delta</td>
<td>-0.57</td>
</tr>
<tr>
<td>Theta = 5 X -0.05</td>
<td>-0.25</td>
</tr>
<tr>
<td>Vega: IV down 1% X 0.15</td>
<td>-0.15</td>
</tr>
<tr>
<td>New Premium</td>
<td>3.03</td>
</tr>
</tbody>
</table>

Adding all this up our estimated premium is $3.03. This has not reached our Eject Criteria, and at this point we are mildly concerned as IBM is likely going to test its resistance on the upside before testing support, but our radar is up and we are continuously verifying our Commit Criteria.

Let’s say IBM gets some great news, which is bad news for our trade, and climbs 5 bucks in 15 days. We are out of the money and our position has no intrinsic value. Once again Delta is crushing us, but is decreasing the further out of the money our strike goes. An average Delta of negative 40 knocks $2.00 off our position. The Delta move alone gets us to our Eject Criteria of a $2.00 premium. But that’s not all that is hurting us:

Theta is still eating away at our value and has taken $0.75 from our position and this good news has increased investor confidence clipping 4% from IV and 60 cents from our premium.

15 Days IBM Up $5

<table>
<thead>
<tr>
<th>Premium Paid</th>
<th>4.00</th>
</tr>
</thead>
<tbody>
<tr>
<td>Avg. Delta -.40 X 5</td>
<td>-2.00</td>
</tr>
<tr>
<td>Theta = 15 X -0.05</td>
<td>-0.75</td>
</tr>
<tr>
<td>Vega: IV up 4% X 0.15</td>
<td>-0.60</td>
</tr>
<tr>
<td>New Premium</td>
<td>0.65</td>
</tr>
</tbody>
</table>

Adding all this up our estimated premium is 65 cents, well past our Eject Criteria. Unless we were slapped in the face with a gap up in IBM, we would have been out of this position at 2 bucks or sooner. Yes it hurts to lose money, but there is no reason to stay in this trade if the reasons we got into it are no longer valid: hope does not equal Commit Criteria. We get out, lick our wounds and take our lessons learned to the next trade!
Wrap Up

The long put is a bearish directional Tactic. If we are bearish on a company we can leverage our trading capital for very nice profits and actively manage our risk with a long put position. The key to successful put trading is an understanding of how the fundamentals will apply to your analysis and Strategic Mindset when picking the right strike to match your research and give you the best chance of profit. Double check your math carefully, because puts can turn you around if you are not careful.

Paper trade before you start with real money! Pick an underlying, do the same analysis we just went through, build a plan and trade. In your paper account practice with the three strikes we looked at in this lesson on any underlying. Pick an ITM, OTM and ATM strike and compare their performance, build a plan for each and execute your plan!

Remember, ‘Train like you fight because you will fight like you train!’
Lesson 9 Quiz

1. As the holder of a put option you ________.
   a. Are obligated to sell at expiration.
   b. You have the right to sell until expiration.
   c. You have the right to buy until expiration.
   d. You receive a premium for your right.

2. What is the max loss of a long put?
   a. Unlimited.
   b. The premium paid.
   c. The premium received.
   d. The breakeven minus the current stock price.

3. What is the max gain of a long put?
   a. Unlimited.
   b. The premium paid.
   c. The premium received.
   d. The strike price minus the premium paid.

Use the Waste Management (WM) option chain above to answer the following questions.
Assumptions:
- Bearish on WM
- Target Price $28.00
- Market Order for one contract of the 32.5 Strike
- Transaction costs excluded

4. What is the breakeven of the October 32.5 Strike?
   a. $28.00
   b. $28.54
c. $30.65
d. $32.50
5. What is market order cost, per share, of the Oct 32.5 Put?
   a. $1.75
   b. $175.00
   c. $1.85
   d. $185.00

6. If WM expires at $28.00, what is the profit per contract?
   a. $265.00
   b. $234.00
   c. $246.00
   d. $450.00

Reference the Greeks for the WM 32.5 Strike above to answer the following questions.

7. If the underlying share price of WM rises, what affect will the Delta have on the
   premium (excluding other factors)?
   a. The premium will increase dollar for dollar with the underlying stock.
   b. The Delta does not have an effect on option premiums
   c. The premium will increase by a rate of 48 cents per $1 gain in underlying
      price.
   d. The premium will decrease by a rate of 48 cents per $1 gain in underlying
      price.

8. What is Theta telling us with reference to the premium for the WM 32.5 Long Put
   (excluding other factors)?
   a. That the premium will decrease by 1 cent each day towards expiration.
   b. That the premium will increase by 1 cent each day towards expiration.
   c. Theta does not affect option’s premiums
   d. The premium will increase by 26 cents each day.

9. If our Eject Criteria is 50% of the premium paid, when do we close the trade?
   a. $1.50.
   b. $1.00
   c. $0.93
   d. $1.27

10. The ATM Implied Volatility is 24% and there are 100 trading days remaining, what
    is the expected volatility over the trading period?
    a. 33%
    b. 25%
    c. 20%
d. 15%
11. What is the potential 1 standard deviation trading range of WFC?
   a. $27.61 to $37.35  
   b. $25.41 to $35.21  
   c. $26.62 to $34.50  
   d. $30.00 to $40.00.
Lesson 10

Protective Put

The put and call options in the context that we have discussed are speculative tactics. For a call we are speculating that the targeted underlying will go up and for a put we are speculating that the targeted underlying will go down. Options have many different uses. They can be used as speculative, income or as protection tools. In Top Gun Options Primary we want to introduce you to each of these techniques. We have covered speculative, so we will talk about how to protect stocks in our portfolio using options, more specifically protecting our stocks with a protective put.

Think about a protective put as an insurance policy. Any responsible person out there has insurance on their assets. We buy these policies to protect our cars, houses, boats, health and many other valuable items in our life...including our life! You never know when ‘lightning might strike’ and when things go bad, it always feels good to know you were protected. How many people are insured to the hilt, but when it comes to their investment or retirement portfolio, they are wide open to the market? In financial speak, this is unhedged.

Think of the market volatility over the last ten years. Many of us are still trying to get back to where we were in 2000! One thing we know for sure, markets go up and go down, and most of the time markets go down much faster than they go up! Smart investors hedge and the most widely used hedge for informed investors are protective puts.

Protective puts are an insurance policy for our investment portfolio. I would bet that most of you reading this have a portfolio that is worth more than the car you drive and your car is insured! So why is your portfolio not insured? A put option makes money if the underlying stock goes down, so it stands to reason that if we own a stock, that is long a stock and we are long the corresponding put, we should be able to protect our stock if it goes down. Given the craziness in the market these days, why would anyone drive around the financial arena without a hedge!

In this lesson we will define a protective put then we will examine when and why we use a protective put. We will look at a couple of example trades and then build a trade plan. We will also look at some of the gotchas with protective puts with a look at how the IRS deals with them.

Review

Before we proceed let’s review some of the basics. A single put option contract gives the owner of the put the right, but not the obligation to sell 100 shares of the underlying asset. No matter how low the stock price falls, you still can sell the stock for the strike price until the option expires. And your maximum risk is only the premium paid.
Looking at the profit profile of a long stock, which means we own the stock. We see that our upside is unlimited, but so is our downside. Our breakeven is the price paid for the stock. Clearly, if we buy a stock we want it to increase in value, so we only buy a stock when our Strategic Mindset is bullish. The added benefit of owning a stock is that we retain all the shareholder rights, we can vote on company issues and we can participate in company profits through dividends. But, we are also exposed to company losses, if a highly anticipated product launch fails, or demand for a current product is cut in half because of world events or management gets caught with their hand in the cookie jar, we are exposed to all of this. One only has to think about Enron to understand how fast a company can go in the toilet, thank you Mr. Skilling.

**Protective Put**

A protective put is a position that caps the losses of a stock that you own for as long as the put contract is open. It is created by first owning the stock, then buying 1 put contract for every 100 shares of stock that you own, if you own a 1000 shares you would buy 10 put contacts to protect you position. The resulting profit profile looks exactly like a long call.
This is also known as a synthetic long call, because the profit profile matches the long call. You will find as we go through Top Gun Options that there are many ways we can manipulate put, call and stock positions to create what are known as synthetics and they can be quite useful for us. The position has limited downside risk during the life of the put when combining the ownership of common stock and a put option on the same stock.

The breakeven for the position is the purchase price of your underlying stock plus the premium paid to buy the put. The maximum gain is unlimited if the stock goes to the moon and our maximum loss is limited to the premium paid for the put, plus the price of the underlying minus the put strike. For Example:

If we bought 100 shares of ABC company at 75 bucks a share, we could buy a 75 strike put at 2 dollars a share and limit our losses while maintaining the maximum upside potential of the stock.

100 Shares ABC at $75
One 75 Put contract at $2
BE = $77
Max Loss = $2
Max Gain is unlimited
Our new breakeven would be 77 dollars, the stock purchase price plus the premium for the put. Our maximum loss is 2 dollars, which is the premium of the put plus the stock price minus the strike price or the breakeven minus the strike.

A protective put is a good move if we had just run up 10 or 15 dollars or we just wanted to buy a stock and protect ourselves to the downside for a period of time. When you buy a stock and the corresponding put, simultaneously as one position, it is called a married put.

**Strategic Mindset**

The Strategic Mindset for buying a protective put is a mixed bag. We can be bullish, bearish, neutral or volatile. We may be bullish on a stock but worried that some other macroeconomic event may put some pressure on the stock for a while and to cover ourselves we buy a protective put until the uncertainty passes. Or we may own a stock with a nice dividend yield, but turn bearish on it for some reason and want to protect our downside with a protective put, so we can limit our losses and still hold the stock and collect our dividends.

We could be neutral on the stock or the overall market, but unsure which way it may break and to cover a downside breakout we buy a put for protection. Or we are in a volatile market, which seems the norm these days, and we want to hold onto our portfolio so we cover our holdings with protective puts.

In the crazy markets there are any number of reasons we may want to protect or insure our portfolio. With the volatility we are seeing on a routine basis, protective puts let us remove much of the uncertainty in our portfolio, which means we get to sleep better at night.

But, why should I pay for protection when I can just set a stop loss?

**Protective Put vs. Stop Loss**

In the markets you get what you pay for. If you have a stop loss on your stock option, which is a smart thing to do, you are protected if your stock falls to your stop loss. The problem with stop losses is that they are only active when the market is open. When does the bad news come out? After the day's trading has closed. Depending on the news this could cause a large gap down in your stock, well past your stop loss.

Let’s say you own shares in a company and your shares have climbed from 50 to 75 in the past year. A pretty nice gain and you have been setting trailing stops on the way up and your current stop is at 70 bucks to protect your profits. After the close the company announces earnings that are far below what the market expected and that there are some issues with a product and they are likely to issue product - bad news! What happens the next day? Well your stock that closed at 75 the day before, gaps down and opens at 55, ouch!
Your stop loss gets triggered at the open, but not at your stop loss of 70. It gets triggered at the current market price of 55 and you end up selling your shares at 55 dollars. You're still making a profit, but most of your gains were wiped out.

Stop losses are generally a good thing because they are free, but remember, you get what you pay for. On the other hand, if you had bought the 70 strike put for $2.00 as insurance for your stock, you would've been insured. You could choose to exercise the option or sell it back to the market, you are in control.

If your 75-dollar stock had gapped down by $20 to $55, your put is ITM $15 and you have only lost five dollars plus the premium paid for the put of $2.00. So instead of losing 20 dollars you are only out 7 bucks and still have a nice profit in the position. Plus, depending on how much time is left to expiry, you will retain a bit of time value as well. This is a much nicer scenario!

The nice thing about a protective put is that as long as the position is open, it is working for you and you are in control of the position. A stop loss is only working for you during market hours.

Let’s look at a few examples of buying a protective put.

**Protective Put Example**

SanDisk (SNDK) is company that designs, develops and manufactures data storage solutions, from flash memory to various memory components that are in cell phones, navigation devices, gaming systems and computers. SanDisk is considered a best in class company.

*Figure 22, SNDK 6-Month Chart*
Toward the end of January we decided we wanted to own some SanDisk. So we took advantage of the gap down on what seemed to be some unfounded fears in the overall market and bought 500 shares SanDisk at 25 dollars. As we can see in Figure 22, this was an outstanding stock pick and our arms are tired from patting ourselves on the back. As we approach a near 100% return, we are getting a little nervous with our profits and want to protect them. We can see that there has been an increase in the volatility of SanDisk over the last month. Being a tech stock, we know these can be highly volatile with any bad news. So we want to buy a protective put for few months while ride this uptrend as far as we can.

This is the put option chain for SanDisk, we want to buy insurance for a few months. June expiration has just past and we want to look at Aug and October puts for insurance.

![Figure 23, SNDK Put Options](image)

Again we have some choices here with the strike price and time frame. Comparing prices for August and October, the 49 strikes for both months, August is selling for $4.30 cents and October is selling for $5.75. We can see that we can get an extra 2 months of protection for only a $1.45. October seems like a better deal so let’s choose the October strike to buy insurance.

When picking strikes for a protective put all the same fundamentals we learned about buying a put apply, but our reason for buying it is different. Remember, we are not necessarily anticipating a downward move in the stock, we just want to protect a position we have in a stock.
We paid 25 bucks a share, for 500 shares and committed $12,500 to SanDisk. Now our position is worth almost $25,000 in less than six months! So consider this a wealth preservation tactic. We would be more than justified with taking profits in SNDK, but let’s assume we think there is significant more upside and we want to protect our gains with a protective put, continuing our exposure to the upside.

The question, which strike to buy? The answer just depends on how much protection you want. We will look at two strikes, the 49 strike, which is essentially at the money and the 45 strike which is four dollars out of the money. And some of the considerations that go into buying a protective put. But first, if you have been thinking about fundamentals, the first thing you thought of was implied volatility and you would have noticed it looks elevated. Meaning options prices are high. So, let’s look at the chart and see where IV stands.
This is the six month comparison of HV and IV and we can see right away that SNDK has had its share of volatility. HV, the green line, is elevated, which should be no surprise given the large rise in the stock price. IV has been pretty rocky as well and it is no surprise that in May it saw its highs because of the macroeconomic concerns regarding the European debt crisis. Most stocks have had the same response to this. The average IV has been right around 50 over the last six months and that is exactly where it is at the moment, so it looks like we might be paying a fair price for SNDK options. Plus this reversion to the norm is good news for our continued bullish outlook.

So let’s look at our strikes, first the 49 strike put...

We have 500 shares of SNDK trading at 49 dollars and 16 cents. The 49 strike put is selling for $5.75 and the bid is $5.65 making the spread is 10 cents, so we will offer $5.70. Since we have 500 shares of SNDK we need to buy five contracts and this will save us 25 bucks, more than covering any transaction cost. Breaking this trade down it will cost us $2850 for four months of protection and our profit profile looks like this.

Our breakeven is the stock price at purchase plus the premium paid which equals $30.70 and we have four months to reach our breakeven. Maximum loss is equal to the premium paid plus the purchase price of the stock minus the strike price.

If SNDK retreats below our strike of 49 we are gaining intrinsic value as the price declines, directly offsetting our loss of profit from the holding the stock. And if some bad news for SNDK comes out and the stock gaps down, our max loss is still capped at $5.86. Also, if this happens while there is still some time value left in the option, we can likely get out of the stock and option position and reduce our losses a little more.

Now let’s look at another scenario: The 45 strike put is selling for $4.00 and the bid is $3.90 making the spread 10 cents, so we will offer 3.95. The decision to buy an OTM put means you are willing to accept more downside in order to pay less for the protection.

Breaking this trade down it will cost us $1,975.00 for four months of protection, $875.00 less than the ATM put. Just like a normal insurance policy, if we pay less for a policy, our deductible is usually higher. Our breakeven is the stock price at purchase plus the premium paid which equals $28.95 and we have four months to reach our breakeven. Max loss is equal to the premium paid plus the purchase price of the stock minus the strike price.

But as you can see our maximum loss is higher than the ATM strike and in essence this is the deductible we pay for lower priced insurance, but we do have a lower breakeven. So, as SNDK retreats below our strike of 45 we are gaining intrinsic value as the price declines, directly offsetting our loss of profit from the holding the stock.
SNDK Protective Put Trade Plan

Even for a protective put we build a trade plan, although this may seem like a fire and forget tactic, we stick to our habit pattern of building a sound trade plan. Our objective is still, Make Money, Don’t Lose It! Buying a protective put achieves this objective as we are preserving the profits already gained in SNDK.
SNDK Trade Plan
June 9, 2010

Strategic Mindset: **BULLISH**
Target: **SNDK currently trading at 49.16**

**Commit Criteria:**
Remaining bullish on SNDK and want to protect profits.

**Tactic:** Buy 5 ATM 49 Strike Puts

![Graph showing profit and loss]

**Tactical Employment:**
- **Leg Set up:** Bought 500 shares of SNDK at 25
  - Buy 5 OCT 49 Puts at 5.70
  - Net Debit: $15,350.00
- **Max Profit:** Unlimited
- **Max Risk:** $5.86 per share / $2930.00 total
- **Breakeven:** 30.86

**The Greeks:**
- **Theta (Time Value):** Time is working against us.
- **Vega (Volatility):** A decrease in IV hurts this position. An increase is a somewhat positive, helps the premium and increases our chances of SNDK climbing above our breakeven.
Mid-Course Guidance:

**Profit Target:** Based on stock performance. Close all positions with SanDisk at 60 dollars.

**Eject Criteria/Contingency Plan:**
- Commit Criteria no longer valid.

**Contingency Plan**
- If stock climbs above 60, sell put and buy higher strike put.
- If stock craters, sell the stock and buy higher strike put. Close both positions and retain profits.
- If stock craters, sell the stock and hold onto option for more downside profit.
- If stock craters, sell the put and buy more SNKG with proceeds and buy more protective puts as needed.
- If option expires worthless, buy another protective put.

**Exit Plan**

1. Profit target reached.
   - Sell stock and put option.
2. Eject criteria reached.
   - See contingency plan.
3. To close position,
   - Sell to close 5 Oct 49 puts.

________________________________________________________

**Planning Thoughts:**

Remember why we plan. The plan lays the foundation for Discipline, it lays out our risk parameter and tells us what to do when they are threatened and when we stick to our plan we have Superior Execution. The bullet points below outline some of our thoughts with this trade plan.

1. Even though we are buying a put, our reasons for buying are bullish and don’t want to risk the majority of our profits we hold in our stock position.
2. Our Commit Criteria is stated simply and summarizes our thoughts when entering the trade.
3. Tactic is simply the option position we are opening.
   a. Remember our objective...Make Money, Don’t Lose It!
   b. Our strategy is to use options to support our objective.
   c. And our Tactic is the options position.
4. Our Tactical Employment is simply the trade set up and the performance parameters for the trade.
   a. This is a protective put, so we own the shares and are protecting with one contract per 100 shares owned.
   b. Profit is dependent on SNKG.
c. Max risk is the current stock price plus the premium minus the strike price.

5. Mid-Course Guidance:
   a. We define our price target in terms of the stock. In this case we would be happy with SNDK getting to $60.00. This is based on independent trader goals and risk tolerance.
   b. Eject Criteria:
      i. If our bullishness on SNDK can no longer be supported, we would exit SNDK and likely hold the put. This is addressed in the contingencies.

   a. Though the profit target is $60, if SNDK climbs strongly, we could sell the put and buy a higher strike put.
   b. If SNDK craters, we can close both positions or just sell SNDK and try to profit by holding onto the option.
   c. If the stock craters due to a broader market meltdown and SNDK fundamentals are good, we can sell the put and buy more SNDK and another protective put with the proceeds.
   d. If the put expires and we still want protection, we can buy another put.


More on Protection

We have covered a protective position for an individual stock. However, you can establish a broader, but less focused protective option position. For instance if your portfolio is weighted heavily in one particular sector, you can buy put options on sector ETFs to give you some blanket protection within a sector. Although these can be very good, they are not as focused or effective as buying the put on a specific stock that you own, but they will provide some protection.

The same applies to a well-diversified portfolio; you can buy puts on a particular index like the SPX and get some modest coverage for your entire portfolio. Each investor is different in the type of protection he or she needs, so it pays to do your research in this area and find an optionable index or ETF that can optimize your protection. The same buying and strike price considerations will apply to these options as well.

The Dreaded IRS...

There is one big gotcha with buying protective puts: our ‘friends’ at the Internal Revenue Service. We are not tax accountants at Fox3 Options, nor do we want to be, so what follows is not advice. It is a “buyer beware notice”. Please consult your tax professional for accurate tax advice.

If you are a short term trader this won’t matter much, but if you combine short term with some long term trades or if you are a buy and hold stock investor, you need to be aware that the IRS has specific rules regarding protective puts. For instance, in our trade example with SNDK: If we had bought the put as protection, the IRS would call this a protective put, just as we do. But the IRS, in their effort to be customer friendly, would force you to reset your
holding period of the stock back to zero days. You would not be able to start your new holding period until the protective put expired. So, you need to consider what your stock holding goals are before executing this tactic. If it so happens that you have already sweated out the appropriate holding period for tax reasons then you will be okay with a protective put.

The IRS allows something called a Married Put. A married put is a put that is purchased on a share at the same time the share is purchased. The investor identifies it as a married put, and the “package deal” of put plus share is regarded as a single investment. In particular the price of the put is added to the price of the share as the cost basis of the share. The holding period of the package is the same as the holding period of the share itself. So if the put is a long-term put, say more than a year or more to expiration, the stock can be hedged and still be considered a long-term investment.

Again, talk to your accountant as tax rules in this area do change and with the current administration looking for more revenue as aggressively as they are, it pays to talk to your accountant and keep up with the tax rules around protective and married puts.

**Wrap Up**

A protective put is all about asset protection and allows you to buy insurance for individual stocks and or your entire portfolio. Just like any option, pick the right strike that suits your budget and risk tolerance and build your plan. Beware of the Tax Man, check with your accountant for the most up to date rules affecting the protective and married puts.

As always, paper trade for practice. Pick a stock and buy it with your paper account then buy the protective put and see how it behaves and how your plan works in the trade.
Lesson 10 Quiz

1. What is the set up for a protective put?
   a. Buy 100 put contracts per 100 Share of stock owned.
   b. Sell 100 put contracts per 100 shares of stock owned.
   c. Buy 1 put contract per 100 shares of stock owned.
   d. Sell 1 put contract per 100 shares of stock owned.

2. What is the max loss of a protective put?
   a. Unlimited.
   b. The premium paid.
   c. The premium received.
   d. The stock price minus the put strike plus the premium paid.

3. What is the max gain of a protective put?
   a. Unlimited.
   b. The premium paid.
   c. The premium received.
   d. The strike price minus the premium paid.

Use the Goldman Sachs (GS) option chain above to answer the following questions.
Assumptions:
- Neutral to Bullish but want to protect
- Bought 200 shares at $132.50 per share
- Market order and transaction costs excluded
- Think we are buying on the bottom, but want to ensure we don’t get crushed by news.
4. What is the breakeven for a protective put with the August 130 strike?
   a. $125.40
   b. $137.10
   c. $135.46
   d. $130.00

5. What will be the total cost to protect our position with the August 130 strike put?
   a. $565.00
   b. $875.00
   c. $920.00
   d. $885.00

6. If GS closes at 139.50 at expiration, what is our total profit if we bought two August 130 strike contracts to protect our stock position?
   a. 56 cents
   b. $560.00
   c. $480.00
   d. $56.00

7. If GS crashes to $115.00, what is the total loss if we hold the Aug 130 strike puts protecting our shares?
   a. $1500.00
   b. $0
   c. $4,092.00
   d. $1420.00

8. If GS crashes to $115.00 per share what is the total loss (from your original investment) if we do not hold the Aug 130 strike put?
   a. $1500.00
   b. $0
   c. $3,500.00
   d. $2,012.00

9. What is a Married Put?
   a. A put bought a day or two after a stock is purchased.
   b. A stock purchased simultaneously with a protective put.
   c. Selling a put and buying a stock.
   d. Shorting a stock and buying a put.

10. What determines which strike price to purchase for a protective put?
    a. Budget and risk tolerance.
    b. The current stock price.
    c. The premium of the strike.
    d. All of the above.
Lesson 11

Cash Secured Put

In the case of a short call, unlimited losses would result if the underlying went to the moon. Even with these risks known, option selling is an integral part of being a successful option trader. In Intermediate and Advanced Top Gun Options, selling options is part of many of the tactics we will cover but we will normally be hedged in some fashion. So, you will need to become just as comfortable selling options as buying them.

Here in Primary, we want to introduce you to two of the most useful option selling tactics: The cash secured put and the covered call. These tactics allow you to produce income and to add stocks at an attractive price into your portfolio. By integrating these basic option skills into your trading arsenal, you are adding a level of sophistication to your portfolio that novice traders do not enjoy. In finance, knowledge equals profits and these tools can add substantial profits when executed correctly.

This lesson will cover the cash secured put. A cash secured put allows you to earn income on cash in your portfolio and set yourself up to own a stock that you want at a price that would be desirable. In short, you can get paid to buy a stock or just get paid for the cash you have in your account.

We will define a cash secured put, and when and why we use a cash secured put. We will go over an example trade and build a trade plan. This lesson will get you on your way to sophisticated trading.

Review

When we sell a put we are said to be short in the position and the seller of option contract is said to be the ‘writer’ of the options contract. The writer of a put option is obligated to buy the underlying at a fixed price, the strike price, until expiration date. If the writer is exercised, the writer of the contract will be assigned the shares of the underlying and have to pay the strike price for the number of shares on the contract.

For this obligation, the writer of the contract receives a premium. The premium is deposited in the brokerage account of the writer and is applied to any margin requirement.
From the PnL, the maximum profit for the writer is limited to the premium received. The breakeven is equal to the strike price minus the premium received. But, we are open to a substantial loss if we are not hedged. The max loss is the strike price minus the premium received or another way to look at it is that we are at risk of the dollar value of our breakeven on a per share basis. So if our breakeven is 25 bucks, we are open to a $2500.00 dollar loss per contract open if the company goes under.

So why would anyone write an option if they risk such a substantial loss? Rarely does a trader write puts without a hedge or without being part of another tactic. Writing a put contract may be part of an option spread tactic intended to collect premium or hedge a position. You will learn more about this throughout Intermediate and Advanced Top Gun Options.

A trader may justify writing a “Naked Put”, which means that the writer is not hedged other than margin account requirements, if he/she can back it up with very tight fundamental or technical analysis. This is not a tactic we recommend at Fox3 Options, because there are less risky and safer ways to earn money. We will look at it in Intermediate Options to build your familiarity; ultimately it is up to the trader if they are willing to shoulder the risk.

The only time we recommend selling a put is if it is part of an option spread. Or the writer is looking to buy a stock at a specific price and instead of setting a limit order, the investor decides to write a put option and collect some premium while they wait for the stock to get to a more attractive price. This allows an investor to collect some income on the cash standing by in their account to buy the stock while they wait for their target price.
This leads to rule number one when selling puts:

**DO NOT**

**Write a Put on a Stock You Do Not Want to OWN!**

So if you get assigned, you will not be unhappy with the outcome and in fact, our reason for writing a cash secured put is because we do want to own the stock. By doing so, we can collect premium while we wait for our target price.

**Ways to Buy a Stock**

We can buy stock through a market order, which means we pay the current market price for the stock, which would be the ask. However, if the stock has just run up on us and is overbought, the stock may be a little ahead of itself. Meaning it will likely go down a bit until it reaches a point where the buyers again outnumber the sellers, likely its most recent or strongest technical support level. If we completed a market order, we could end up participating in this pullback and lose money in the short term.

If we are smart enough to realize this, we may set a limit order, which means we put an order in at a price that we would be willing to buy the stock. This is probably done with a good till cancelled order, meaning that as soon as it hits our price the order will be executed. But, our money remains stagnant in our account and is not working for us.

A more sophisticated investor, who understands the option market, will put their money to work and sell a put at the strike price they are willing to buy the stock and collect premium on the cash standing buy in their account. This is a cash secured put and if the stock does not reach the strike price, they will sell another put and continue to collect premium until they own the stock or determine they no longer want to own it. In our view at Fox3 Options, there is no other way to buy a stock.
Cash Secured Put PnL

It should be no surprise that the PnL looks the same as the short put. The breakeven point and maximum loss are the same.

The set up for the cash secured put is to first have the cash to buy the stock at the strike price you would be comfortable owning the stock, then selling one put for every 100 shares you desire to own. If we want to buy 1000 shares of a company we would sell 10 puts at a strike price we would be happy paying for the stock and collect premium as we wait for the stock to come back to our price.

The only thing that changes in the PnL is that if we are assigned the stock as desired, the profit potential becomes unlimited and is based on the stock's performance. For that matter our downside is also tied to the performance of the stock. So, we need to know the stock and have defined our Strategic Mindset for the stock.

Strategic Mindset

Since we want to own the stock, our Strategic Mindset is clearly Bullish. But at the same time we think that the stock has run up a bit too fast and may give some back before continuing its trend upwards. We need to have done our homework on the stock we want to own. This entails looking at the macro and micro financial climate and this has led us to be bullish on the stock.
SBUX Cash Secured Put

I’m not sure what you did this morning, but I enjoyed a venti non-fat latte and met with a buddy of mine. This is something we do a couple of times a week and we talk business, politics, women…standard stuff. Where do you get a non-fat latte? Starbucks (SBUX).

Every time I go to SBUX I have to wait in line about 5 minutes to order, then I sit outside and it is a non-stop parade of cars going through the drive through. Plus, they have started serving some decent healthy food for a light breakfast or lunch. I think we all realize that Starbucks is worldwide and continues to grow. I still kick myself for not buying the stock when I sipped my first Starbucks latte!

So, let’s say we are now feeling bullish again on SBUX because of some of the new additions to the menu and their continued aggressive expansion. We do our research and we feel this is a reasonable buy, if we can get it for the right price. Looking at the basic fundamentals, we know the business and the product. We know it is making money; its PE is around 25. Seems like it may be a bit high but, it is in line among some of its peers and it is the 1000-pound gorilla in the room. We know it can pay its bills, they have a current ratio of around 1.5, which means that current assets are greater than current liabilities, plus they have 1.3 billion in cash. They even pay a modest dividend of 10 cents a share. Market sentiment seems pretty good and SBUX has done a nice job managing their brand.

Let’s assume we have $27,000 sitting in our brokerage account, a nice problem to have, but it is not working for us. We think that there is more upside to SBUX and we want 1000 shares in our portfolio. We want to put our money to work and use a cash secured put to generate some income with our cash and if we end up owning SBUX at a good price, we are ok with that.
This is the one-year chart of SBUX and we can see that it has had a pretty nice ride. In fact, this might normally scare us off a stock, but the growth has been very good in the balance sheet and SBUX has found a nice balance in brand and service going forward. We still feel there is more upside if we can get it at the right price.

Let’s look at the six-month chart.

Looking at the six-month chart we can see that all the turmoil in the European market created some interesting price action over the last 90 days. This bodes well for us and we
may get a decent price swing and trigger our put. Also, SBUX is coming off of its 52 week high on a little weakness. Looking at its recent support levels, it looks like the strongest support is just above 24 dollars and we would be satisfied if we got in around 25 or 26 bucks.

Now if you are thinking about fundamentals, you should be asking yourself where the current implied volatility is and where it has been for Starbucks. Refer to Figure 27 below.

![Figure 27, SBUX Volatility](image)

This is the comparison of HV and IV over the last six months. Again we can see the increase in volatility reflected in the price chart due to the macroeconomic concerns. But the important number here is what the IV is today, because that is what we are selling.

Barring the recent spike in volatility, IV has averaged around 30% and that is where it is right now. This is okay, ideally, we would like to sell an option when IV is higher than average, but on the other hand, if we are bullish on a stock, we are likely not alone, so IV might not be that elevated. So we are good selling at this level.
Figure 27, SBUX Option Chain

With SBUX trading at $27.32 we can’t buy 1000 shares of SBUX with the cash we have on hand. But having looked at the chart, we know that SBUX just hit its 52-week high and appears poised to give a few bucks back and we would like to get in at $25.

Looking at the 25 strikes for July and August, the July 25 strike is selling for 22 cents. If we were to sell 10 contracts we would receive $220 dollars in our brokerage account. This is a 0.8% return on our cash in less than a month. Looking at the August 25 strike, we can collect $680.00. This is 2.5% return on our cash and a slightly lower cost basis should we be assigned. It is the end of May and we want a little time for our trade to work out. So, let’s look at our options for August.
Even though we think we would be happy getting in at 25, we think it could test its support of 24 by August expiration and we have some options choosing a strike. It just depends on how strongly we want to own SBUX. If we wanted to get in SBUX as soon as possible we could sell the ATM strike, collect $1350.00 and hope to get assigned at 27, in which case our cost basis is $25.65. Still within our budget and if we don’t get assigned, an easy 5% return on our money. Also, we can sell another put after the August expiration if SBUX is within reach and continue to get some work out of our money.

But we think there is a little downside as some profit taking steps in and we retest our support level. So we would be happy with getting into SBUX below 25 so we will pick the 25 strike put.

Let’s break this trade down and then build a trade plan. Two things can happen to us, we are either assigned the stock or not. If we are not assigned, we keep our $680.00, which is a 2.5 percent return in 1.5 months. Annualized that is a 20% return, respectable by any standards. If we are not assigned and SBUX is still within reach, we can sell another put in hopes of getting SBUX at a price we are happy with and keep collecting income until it hits our price or until our Strategic Mindset changes.

But we still have to manage the trade. We are not only managing the option, but we also have to keep our eye on the stock and ensure our reasons for being bullish remain intact and we will build this into our trade plan.

If we are assigned the stock, we will now own SBUX, we still keep our $680.00 dollars, which will give us a cost basis of $24.32, and this is an 11% discount to the current price of SBUX. Again we will need to manage the trade. If it does test its support and we are assigned we will need to make sure it is not part of a longer term bearish move and may

**Figure 28, SBUX Option Chain**

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<th>STRIKES</th>
<th>Bid</th>
<th>Ask</th>
<th>Mark</th>
<th>Open Interest</th>
<th>Ask Size</th>
<th>Bid Size</th>
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**DISCIPLINE | RISK MANAGEMENT | SUPERIOR EXECUTION**
consider a protective put on SBUX or even a stop loss as a company like SBUX does not tend to have large gaps down, but nothing is impossible.

Let’s compare this to setting a limit order to buy SBUX at 25. Limit orders are a fine way to get the stock you want at your price, but there are key differences. If we never get to 25, we will never own SBUX. But if it does get to 25 we will automatically buy the shares that we want. However, while you are waiting for this decline your money is sleeping in your account and not working for you.

By selling the put, if SBUX never gets to 25 we are guaranteed a 2.5% return on our money. If it does get to 25 by August expiration and we are assigned, our cost basis is actually $24.32, not the 25 bucks of the limit order. Because assignment is not guaranteed, it may actually get all the way down and below 25 then go back up above 25 before Aug expiration and we may not be assigned. In which case we can sell another put, perhaps make another 2.5% on SBUX and we don’t even own the stock yet. But the whole time our money is in play and doing what it supposed to, grow. On the other hand, with a limit order we will own the stock and it is still a good thing if our Strategic Mindset is correct.

**SBUX Cash Secured Put Trade Plan**

As you are discovering, we build a trade plan for every trade. Because no plan equals poor Discipline, which equals poor Risk Management, which equals poor Execution. Your plans don’t have to be perfect, as we can massage them throughout a trade to account for something we may have forgotten, but you have to have a plan!

Our objective is to Make Money, Not Lose It!! And the cash secured put is putting our money to work!
SBUX Trade Plan  
June 9, 2010

Strategic Mindset:  **BULLISH**  
Target:  *SBUX currently trading at 27.32*

**Commit Criteria:**  
Bullish on SBUX and want to buy the stock. Fundamentals and Technical's support further upside and we like what SBUX has done with its menus. SBUX recently reached a new high and we are willing to pay 25 dollars a share.

**Tactic:**  *AUG 25 Strike Cash Secured Put*

**Tactical Employment:**  
Leg Set up:  $25,000 Cash in account  
Sell 10 AUG 25 Puts at 0.68  
Net Credit: $680

Max Profit:  $680 unassigned / Unlimited if assigned  
Max Risk:  24.32 per share  
Breakeven:  24.32  
Probabilities:  75% for retaining premium.

**The Greeks:**  
*Theta (Time Value):* Time is working for us.  
*Vega (Volatility):* An increase in IV increases the premium and a decrease in IV decreases premium. An increase in volatility increases our chance of getting assigned.
Mid-Course Guidance:

**Profit Target:**
1. Premium of .68 and own the stock with cost basis of $24.32.
2. Premium of 0.17. 75% RTN on premium: see contingencies.

**Eject Criteria:**
- Commit Criteria no longer valid.

**Contingency Plan**
- If stock climbs and premium decreases to 0.17, buy back put and then sell cash secured put at 26 or 27.
- If option expires and we are not assigned, sell another cash secured put if still bullish on SBUX.
- If assigned, consider a protective put. Plus build trade management plan for SBUX.

**Exit Plan**
1. Profit Target Reached.
   - See contingencies
2. Eject Criteria Reached.
3. To Close Position,
   - Buy to close 10 Aug 25 puts

**Planning Thoughts:**

Remember why we plan. The plan lays the foundation for Discipline, it lays out our risk parameter and tells us what to do when they are threatened and when we stick to our plan we have Superior Execution. The bullet points below outline some of our thought with this trade plan.

1. In this case, our reason for selling a cash secured put is because we have a bullish Strategic Mindset on SBUX and we want to own the stock.
2. Our Commit Criteria is stated simply and summarize our thoughts when entering the trade.
3. Tactic is simply the option position we are opening.
   a. Remember our objective...Make Money, Don’t Lose It!
   b. Our strategy is to use options to support our objective.
   c. And our Tactic is the options position.
4. Our Tactical Employment is simply the trade set up and the performance parameters for the trade.
   a. This is a cash secured put. We want to own SBUX shares and are selling 10 contracts in the hopes of owning 1000 shares.
   b. Our maximum profit is two-fold, regardless of what happens we keep the premium we received and if we are assigned our profit is based on the performance of SBUX.
   c. Maximum risk is the cost basis if we are assigned and is also our breakeven, so our risk is simply the same as owning the stock.
d. Since our goal is to own the stock, we are not too concerned with the Greeks.

5. Mid-Course Guidance:
   a. We have 2 Profit Targets, both based on a desirable outcome. The first is based on getting assigned the stock, in which case we keep the entire premium and our cost basis for the stock is $24.32.
   b. The second is in place in case SBUX has only a small correction then continues up. We set this at 75% of the premium received. So, if the premium decreases to 17 cents, we will buy it back, pocket the difference and then look at our contingency plans.
   c. Eject Criteria:
      i. If our bullishness on SBUX can no longer be supported, we would exit the trade.

   a. If SBUX continues to climb, we buy back the option at our profit target and consider selling another put around 26 or 27, a price we can afford given the cash in our account.
   b. If not assigned, we will sell another put if we are still bullish on SBUX and the price is within reach.
   c. If assigned, we will consider a protective put and build a trade plan for owning SBUX.

Note: We have covered a number of bases with our contingencies because there are several things that can happen during the course of a trade and we want to have an idea which direction we may go in the event that something may come up that is not covered here. In which case we consider our Commit Criteria, Profit Target and Eject Criteria when considering alternate courses of action.


Wrap Up

The cash secured put is a potent way to buy stocks you want to own in your portfolio. It is also an effective way to put the money in your account to work. Picking the strike to sell depends on your Price Target. Once you have opened the position you have to monitor both the option and the stock, ensuring your Commit Criteria stays intact.

Build your plan and trade with Discipline! Remember; don’t sell a put on a stock you do not want to own! As always, paper trade for practice. Pick a stock and write a cash secured put on it and see how it behaves. Execute your plan, stay disciplined and treat you paper money like real money. Because....we fight like we train...so train like you fight!
Lesson 11 Quiz

1. What is the number 1 rule for selling a Cash Secured Put?
   a. Don’t sell a put on a stock you do not want to own!
   b. Don’t sell a put on a stock you do not want to own!
   c. Don’t sell a put on a stock you do not want to own!
   d. All of the above!

2. What is the set up for a Cash Secured Put?
   a. Buy 100 put contracts per 100 share of stock desired.
   b. Sell 100 put contracts per 100 shares of stock desired.
   c. Buy 1 put contract per 100 shares of stock desired.
   d. Sell 1 put contract per 100 shares of stock desired.

3. What is the Strategic Mindset for a Cash Secured Put?
   a. Bullish.
   b. Bearish.
   c. Neutral.
   d. Volatile.

4. What is the max gain of a Cash Secured Put, unassigned?
   a. The premium received.
   b. The premium paid.
   c. Unlimited.
   d. The strike price minus the premium paid.

5. What is the maximum loss of a Cash Secured Put based on?
   a. The performance of the market.
   b. The performance of the underlying stock.
   c. The performance of the corresponding call.
   d. None of the above.

6. What is the breakeven of a Cash Secured Put?
   a. Strike price plus the premium paid.
   b. Current underlying stock price.
   c. Strike price minus the premium received.
   d. Stock price minus the premium paid.
Use the Qualcomm (QCOM) option chain above to answer the following questions.

Assumptions:
- Bullish long term.
- Willing to buy 500 shares at $32.00.
- Market order and transaction costs excluded.
- Think that QCOM is overbought and will give some back in the coming month.
- $17,000.00 dormant in brokerage account

7. What is the breakeven of the August 32 strike?
   a. $32.00
   b. $31.13
   c. $33.93
   d. $33.06

8. How much premium will we collect if we sell 5 contracts at the market price?
   a. $87.00
   b. $870.00
   c. $435.00
   d. $43.50

9. If we sell the August 32 strike put, when can we be assigned?
   a. Anytime
   b. At expiration only
   c. Only if QCOM drops to $32.00
   d. Whenever we choose.

10. If QCOM climbs to $40.00, do we have to give our premium back?
   a. No.
   b. Yes.
   c. Part of it.
   d. If assigned.
11. What is the number 1 rule for selling a Cash Secured Put?
   a. Don’t sell a put on a stock you do not want to own!
   b. Don’t sell a put on a stock you do not want to own!
   c. Don’t sell a put on a stock you do not want to own!
   d. All of the above!
Lesson 12

Covered Call

We have gone over quite a bit of information in Options Primary, by now you should be getting comfortable with your paper account and are beginning to get the feel for how the fundamentals and market action affects the value of options. Also, you should have a feel for completing a trade plan, they take practice and with some experience they will become more effective and quicker to complete.

In the previous lesson we learned how to buy a stock at a discount with a cash-secured put. In this lesson we are going to learn how we can then turnaround and earn income on that stock or other stocks in our portfolio using options. Specifically, we will learn the Covered Call.

Selling options could be a risky business unless you are hedged in some manner, whether it is with cash, another option position or with stock in your portfolio. A Covered Call is a Tactic that involves selling a call option on stocks that we already own.

I am sure everyone has heard that a Covered Call is a risk free way to make money on stocks in your portfolio. Well, this simply is not true and folks that say this are manipulating their interpretation of risk. There is no free lunch in investing and covered calls have their own unique risks.

Covered Calls are an excellent tool for savvy investors juicing up their portfolio and are considered relatively low risk if you do your homework. As always, disciplined execution is the best way to manage your risk. In this lesson we will define a Covered Call and go over some reasons why and when to use a covered call. We will go over two example trades and of course, we will build a trade plan.

Review

Let’s us review some of the basics. Just like selling a put, when we sell a call option we are said to be short in the position and the seller of an option contract is said to be the writer of the options contract. The writer of a call option is obligated to sell the underlying at a fixed price, the strike price, until a certain expiration date. If they are asked to do so, the writer of the call contract will be assigned their obligation to sell the number of shares of the underlying under contract at the strike price.

For this obligation, the writer of the contract receives a premium. The premium is deposited in the brokerage account of the writer and is applied to any margin requirements.
The maximum profit for the writer of a call is limited to the premium received. The breakeven is equal to the strike price plus the premium received. But, we are open to an unlimited loss if we are not hedged. If we sell a call and the underlying blows through our breakeven and keeps going, we are losing dollar for dollar as the stock keeps going. Theoretically there is no limit to where a stock can go. At Fox 3 Options, we do not recommend that you sell naked calls, we always want to hedge them in some fashion. In Intermediate Top Gun Options we will go over the naked call again to build your familiarity.

So why would anyone write an option if they risk everything? There are numerous reasons for writing a call contract. It may be part of an option spread tactic intended to collect premium or hedge another option position. You will learn about these throughout Intermediate and Advanced Top Gun Options.
Covered Call

The covered call strategy combines a long stock position with a short call option position. The investor can already own the underlying stock and then sell one call option for every 100 shares owned OR they can buy the shares and simultaneously sell the call option for every 100 share purchased. When a trader simultaneously executes both trades the tactic is called a Buy-Write, because they buy the stock and write the call option simultaneously.

Covered Call PnL

The resulting PnL looks the same as a short put, but it plays out a little different.

The breakeven for a covered call is the stock price at the time of purchase minus the premium received, which will give some limited downside protection. The maximum loss is based on the performance of the stock. We will assume in this lesson, that we conducted our due diligence on the stock and it is a quality stock.

The maximum profit is twofold, first if the stock does not get above our strike price by expiration, we will likely not have our stock called away and we will keep the entire

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premium. Secondly, if the stock gets called away on us, our profit is the premium collected plus the difference in the stock price and strike price.

The setup for this trade is to own the stock then sell 1 call per 100 shares owned that you want to cover. So, if you have 1000 shares you would like to cover you would sell 10 contracts.

**Risk of a Covered Call**

The risk of the covered call is all based on stock performance. Downside risk is dependent on the performance of the stock and we are actually hedged slightly to the breakeven by the premium received. So, a covered call not only can give us some extra return on our stock, but also gives us limited downside protection.

We also have some **opportunity risk** with a covered call. If we write a call on a stock our profits are capped for the duration of the call contract. If the stock rallies we can miss out on future upside if the stock is called away on us. We do not assume unlimited risk if the stock rallies because with a covered call we are covered dollar for dollar by our stock position.

**Strategic Mindset**

Our Strategic Mindset for writing a covered call is neutral to bullish and fits the two most likely reasons we enter the position.

We are bullish when we have a price target we think our stock will reach. We decide to sell a covered call at the target and collect some premium while we wait for our stock to reach our price target. We would be happy if the price target is reached and the stock is called away.

We can be neutral and think our stock will trade sideways for a while and we would like to collect some premium by selling covered calls to juice up our returns a bit. Although we can gain a slight hedge with a covered call, if we turn bearish on our stock there are better avenues with options to protect the downside than a covered call.

We will look at a couple of trade examples to get a feel for how we can apply the covered call Tactic.

**Apple Covered Call**

First let's look at selling a covered call on a stock in which we want to take some profits.

Let's say back in January 2009 we went to the AT&T store to buy an iPhone, the place was a mad house and everyone was there to buy an iPhone. We get our iPhone after 2 hours of waiting and while driving home listening to songs, we say to ourselves, “You better get some Apple stock.” We get home and do our research to confirm our
inclination, and adjust our portfolio so we can buy 1000 shares of Apple at 85 dollars. Just in case you have had your head in the sand, Apple has more than tripled since then and even though the price targets are currently over 300 dollars, we think a prudent move would be to exit with our profits. Especially before any changes in the capital gains tax laws take effect. So we decide to sell and to accomplish this we turn to the option market to sell covered calls at a price we would be happy parting with Apple.

First we look at the current volatility and see if we are getting a good price for the options.

Comparing the HV, the green line and the IV, the black line, we can see that Apple's IV was elevated during the market volatility over concerns in Europe. But like the rest of the market, the IV appears to reverting to around its average, but remains slightly elevated. So we can expect some fair pricing for our call options.

We are in the enviable position of owning a 1000 Shares of Apple after a 300+% run up in about 18 months. Clearly we are more than happy with our profit and we want sell our stock before the capital gains tax structure changes. So, we elect to sell covered calls to get the price we want for Apple and we would be happy to sell at around 270 – 280 per share. We are still bullish so we will explore a couple of strikes. We also have a little time to let this work out and we want to see if we can earn some premium to increase our returns and eventually exit before year-end.

Selling calls can give us a nice return and if we get assigned, no problem. If we don’t get assigned we will continue to sell calls until we do, which means we are driving our cost basis down. This also means we are increasing or preserving our overall return. It is the end of June so we look at the two front month strikes, July and August. We notice that we can get more attractive pricing for August, so we choose the August strikes.
With Apple currently selling $266.70 we have a few choices when looking at the strikes. Our eventual desire is to sell Apple for a price we would be happy with and we would be happy to get 270 for our stock. Even though it is still in a bullish trend, we are little nervous with all the market uncertainty around the macroeconomic climate. But we might be able to squeak some more out of our position.

Picking a strike ultimately depends on our desire to sell. If we were happy with 270 and wanted to sell immediately, obviously we could just sell the stock. Using options we can sell a deep ITM call where our likelihood of having the share called away is high and perhaps squeak a little more out of our position.

For instance, if we sold the 250 strike call, we would collect $27,000 on the premium alone. Remember that the original purchase of the stock was $85 a share or $58,000 overall! We have lowered our cost basis to $31 a share! We would be ITM by $16.70 and could be assigned the call anytime until expiration. If Apple drops below 250 before we are assigned and the option expires, we will likely not be assigned and we are hedged down to our breakeven of $58 (stock purchase price minus premium received). If this is the case, we keep our $27,000 and can turn around and sell another call. We would have to do some math to see what strike we are now happy selling the stock at, but we have cushioned any loss in Apple by $27,000.

If Apple stays at the current stock price of $266.70 all the way to expiration, we will likely be assigned and we will keep the premium collected as well as the stock sale profit over our original position for a total of $192,000 in profit. The same as if we sold the stock for 277!

If we are not in too big a hurry to sell we could pick the ATM strike and give ourselves a 50/50 chance of getting called away, meanwhile we collect the premium on the ATM call.
Doing this, we could sell the 270 call and collect $15,500 and we then are protected all the way down to our breakeven of $69.50. Even though we can be assigned anytime, we will likely not be assigned if the call is OTM. In which case we keep the premium of $15,500, retain our shares and we can sell another call if desired, collecting more premium.

Should Apple climb above and expire above 270 we will likely be assigned, but we still keep our premium and the difference between strike price and the stock price when it was purchased. So our profit would be $200,500, the same as if we had sold Apple at $285.50. Again, if Apple shot up through $285.50 we would not benefit from the additional gain.

If we were not in a hurry to sell, but are still happy with any price above 270, we can go a strike or two out of the money. Picking the 280 strike gives us some more upside and less of a chance of having our shares called away.

Selling the 280 strike, we would collect $11,200 and we still get some protection down to $73.8 for our current position, just not as much as the ITM or ATM strikes. If Apple dives below our breakeven we begin losing, we will likely not be assigned and will keep our premium to help soften the blow. Also as Apple drops, the premium for the 280 strike will drop, so we could buy the call back for less than we sold it and sell another call closer to the money and collect more premium. It just depends on how you want to play the calls.

So if Apple stays below 280, we probably will not be assigned and our max profit is the premium collected of $11,200 (which lowers our cost basis on the original purchase). If Apple climbs above 280 and we are assigned, we get to participate in the run up to 280, but nothing more and we still keep the premium of $11,200 making our total profit $206,200, the same as selling the stock at $291.20.

Again, lots of choices with options, this would be a nice problem to have, and I hope some of you out there are in this enviable position.

Let’s look at an example of how we could boost the dividend of a stock in our portfolio.

**Bristol Meyer Squib Covered Call**

Let’s assume we want to execute a “Buy-Write” with 2000 shares of Bristol Meyers Squibb, a company that develops pharmaceutical products worldwide. We want to buy this stock because we like the company and they have a nice dividend yield of around 5%, which works out to be about $1.26 a share. BMY recently hit a two-year high of $27.05 and we think this might be a good opportunity to boost our dividend by selling a covered call.

Looking at the 6-month chart we can see that the 52-week high was in early April and was followed by a strong selloff. Plus, we see that the stock is having a little trouble recently getting back up to its highs even with some bullish gaps up in price.
Figure 31, BMY 6-Month Chart

We think this could be a nice opportunity to sell a covered call to boost our dividend. If we can pick a decent strike, we will not be upset if it gets called away. The 27 strike is the first that comes to mind.

First let’s see how IV is stacking up before we look at the strikes.
Volatility is about what we expected. We had the spike in volatility from all the macro-economic activity in May for the European debt crisis. But we have had a reversion back to about the norm of around 25% IV and we are getting a fair price for the options.

June expiration has already passed so we will look at the two front months of July and August.

When selling covered call to generate extra income it is usually best to pick OTM strikes to decrease our chances of getting assigned. The closer we are to the money, the higher the risk of getting assigned. If you are not concerned with getting assigned then you have more flexibility.
The stock's recent 52-week high was $27.05 and the stock is having some trouble revisiting the high, so we will look at the 27 strikes. The July 27 calls are selling for 6 cents and August 27 calls are selling for 29 cents. Clearly we do better with the August strikes, but we have to consider the time to expiration. The farther out we go in time the more opportunity we have of getting our stock called away. So, you have to balance the desire to hold onto the stock with the income desired. Let's assume that we think it will be a while until this high is tested and likely not before August expiration and we would be comfortable selling August options.

We would rather not be assigned, but if it happens, we would be okay getting out at 27. So we sell the August 27 call at the bid for 29 cents. This plays out the same way as our Apple example.

To set up the Buy-Write, we buy 2000 shares at $25.57 and sell 20 contracts, collecting 29 cents per share for a total of $580 dollars. We are now slightly hedged down to $25.28 (our new cost basis).

If we stay below 27 dollars we will most likely avoid being assigned and keep the $580. If Bristol Meyers breaks into new highs and we do get assigned, then we will make $3440 over our current position. But, we will miss out on future gains. If this happens, we could turn around and sell a 27 put, collect more premium and possibly get our stock back.

Ideally, we do not get assigned and we keep our premium and continue receiving dividends, in which case we can continue to sell covered calls on our position. The sale of this one covered call boosted our dividend by 1% to a 6% yield in just seven weeks. If we are able to do this five or six times a year, we can more than double our dividend yield.

You can see if we accepted a bit more risk and chose the 26-strike call, we could collect 63 cents a share. However, our chance of being assigned goes up, it is all a bit of a balancing act and depends on your personal investment goals and risk tolerance.

We can earn income on any optionable stock and sometimes the more volatile stocks can produce an impressive return, but with volatility comes risk, so know your stock and have a plan.

Let's build a trade pan on our Bristol Meyer Squibb trade.

**27 Strike – 20 Contracts @ 29 cents**
- **Collect:** $580
- **Breakeven:** $25.28
- **Max Profit:** $580 if not assigned, $3440 if assigned.
- **Dividend Performance:**
  - **Current:** $1.26 Yield: 5%
  - **Boost:** $1.55 Yield: 6%

DISCIPLINE | RISK MANAGEMENT | SUPERIOR EXECUTION
BMY Covered Call Trade Plan

Not having a plan equals poor Discipline, which equals poor Risk Management, which equals poor Execution. Your plans don’t have to be perfect, as we can adjust them throughout a trade to account for something we may have forgotten, but you have to have a plan!

Our objective is to Make Money, Not Lose It! And the covered call is a versatile way to spice up returns.

BMY Trade Plan
June 9, 2010

Strategic Mindset: NEUTRAL
Target: BMY currently trading at 25.57

Commit Criteria:
We want to collect premium on BMY. It recently sold hard off of its 52 week high of 27 and is stalling in re-challenging this level. We are expecting strong resistance at 27.

Tactic: AUG 27 Strike Covered Call

Tactical Employment:
Leg Set up: Buy 2000 shares of BMY
Sell 20 Aug 27 Strike Calls @ 0.29
Net Credit: $580

Max Profit: $580 unassigned / $3440 if assigned
Max Risk: 25.28 per share
Breakeven: 25.28
Probabilities: 76% for retaining premium

The Greeks:

**Theta (Time Value):** Time is working for us.

**Vega (Volatility):** An increase in IV increases the premium and a decrease in IV decreases premium. An increase is a concern as it increases the chance of BMY dropping below our BE.

Mid-Course Guidance:

**Profit Target:**
1. Premium of .29 OR
2. Premium decreases to 0.07 and we buy back the option and make 75%.

**Eject Criteria/Contingency Plan:**
- Commit Criteria no longer valid on BMY.
- Applies to both stock and option.

**Contingency Plan**
- If assigned call, consider selling cash secured put.
- If 7-cent profit target reached buy back call and sell another front month call 1 or 2 strikes out of the money.
- If option expires and we are not assigned, sell another covered call.
- If bad news on stock, consider selling stock, but keep option.

**Exit Plan**
1. Profit Target Reached.
   - See contingencies
2. Eject Criteria Reached.
3. To Close Position,
   - Buy to close 20 Aug 27 calls

**Planning Thoughts:**

Remember why we plan. The plan lays the foundation for Discipline, it lays out our risk parameter and tells us what to do when they are threatened and when we stick to our plan we have Superior Execution. The bullet points below outline some of our thought with this trade plan.

1. In this case our reason for buying a covered call is because we have a Neutral Strategic Mindset on BMY and we want boost our dividend by collecting premium.
2. Our Commit Criteria is stated simply and summarize our thoughts when entering the trade.
3. Tactic is simply the option position we are opening.
   a. Remember our objective...Make Money, Don't Lose It!
   b. Our strategy is to use options to support our objective.
c. And our Tactic is the options position.

4. Our Tactical Employment is simply the trade set up and the performance parameters for the trade.
   a. We buy 2000 shares of BMY so we need to sell 20 contracts to cover.
   b. Our maximum profit is twofold, regardless of what happens we keep the premium we received of $580 and if we are assigned our profit is $3440.00. In either case we do well, in essence we have 2 ways to win and only one way to lose.
   c. Maximum risk is based on the stock, we are happy with the fundamentals so we don’t expect much of a drop and we are actually hedged by 29 cents to our breakeven of $25.28.
   d. Our probability is based on retaining the premium and not being assigned. We have a very good chance of making a profit and an outside chance of getting assigned, we will be happy either way.
   e. Since we would like to own the stock and just want to collect the premium we are not too concerned with the Greeks. An increase in IV could mean some uncertainty in the stock, so we will keep this in our scan.

5. Mid-Course Guidance:
   a. We have 2 profit targets, the first is based on the option expiring worthless, which means we keep the premium of 29 cents.
   b. The second is in case BMY stock decreases, as the stock decreases so will the option value, this may give us an opportunity to buy back our option and sell another strike at a better premium. We set this target at a 75% return on premium and end up with 7-cent profit goal.
   c. Eject Criteria:
      i. If our Commit Criteria can no longer be supported, we would exit the trade. Applies to both stock and option.

   a. If we are assigned and want the stock back, we may consider selling a cash-secured put at 27 and continue to play BMY.
   b. If we reach our second profit target, we will buy back the put and sell another front month call to continue to collect premium.
   c. If not assigned, we will sell another call and continue to collect premium.
   d. If we get bad news on BMY and stock dives, we will consider selling stock and keeping the call to expiry.

Note: We have covered a number of bases here, but there are several things that can happen during the course of the trade and we want to have an idea which direction we may go something may come up in the course of the trade that is not covered here, in which case we consider our Commit Criteria, profit goals and Eject Criteria when considering alternate courses of action.


Planning
We plan because we want to be disciplined traders who risk manage with skill and finesse to attain consistent Superior Execution. Discipline is the key to success, our plan may not be perfect and we can adjust to account for occurrences we did not consider at any time or for changing conditions in the market. But, we immediately update the plan and execute accordingly.

Don’t fall in love with your trade, because your trade does not love you! Limit your losses and know when to get out before you push the execute button. Ride your gains by setting realistic profit targets, and control your losses. Our objective is to Make Money, Not Lose It! And we have just reviewed a terrific way to boost our returns!

Wrap Up

The covered call is a potent way to sell stocks in your portfolio and it is an effective way to earn income on stocks in your account. Earning income on your dividend paying stocks is a terrific way to boost your dividends. Pick the right strike, build your plan and trade with Discipline!

As always, paper trade for practice. Buy a stock that you like in your paper account and write some calls on it. Execute your plan and see how the trade behaves in the market. Practice, practice, practice and treat your paper money like real money. Because, we fight like we train...so train like you fight!
Lesson 12 Quiz

1. What is the set up for a Covered Call?
   a. Buy 100 call contracts per 100 Share of stock owned.
   b. Sell 100 call contracts per 100 shares of stock owned.
   c. Buy 1 call contract per 100 shares of stock owned.
   d. Sell 1 call contract per 100 shares of stock owned.

2. What is the Strategic Mindset for a Covered Call?
   a. Neutral to Bullish.
   b. Bearish to Bullish.
   c. Neutral to Bearish
   d. Volatile

3. What is the max gain of a Covered Call?
   a. Unlimited.
   b. Strike price minus stock price plus premium received.
   c. The premium received.
   d. The premium paid.

4. What is the maximum loss of a Covered Call based on?
   a. The performance of the market.
   b. The performance of the underlying stock.
   c. The performance of the corresponding call.
   d. None of the above.

5. What is the breakeven of a Covered Call?
   a. Strike price plus the premium paid.
   b. Current underlying stock price.
   c. Strike price minus the premium received.
   d. Stock price at time of sale minus premium received.

6. What is Opportunity Risk?
   a. Missed downside profit of the stock.
   b. Missed upside profit of the stock.
   c. Missed upside profit of the option.
   d. Missed downside profit of the option.

7. T / F: Covered Calls provide some downside protection for a stock.

8. What is a Buy-Write?
   a. A call option and a put purchased simultaneously.
   b. Selling a call option and a stock simultaneously.
   c. Buying a stock and selling a call simultaneously.
   d. Shorting a stock.
Use the Cisco Systems (CSCO) option chain above to answer the following questions.
Assumptions:
- Bullish.
- Bought 300 shares at $21.00.
- Market order and transaction costs excluded.
- Target price is $23.00.
- Want to collect premium while waiting for target price.

9. How much will we receive to cover our 300 shares of CSCO with the August 23 strike call?
   a. $70.00
   b. $310.00
   c. $700.00
   d. $210.00

10. What is the breakeven of the CSCO August 23 Strike?
    a. $22.55
    b. $20.30
    c. $22.70
    d. $23.70

11. What is the total profit if the stock is called away at $23.00?
    a. $700.00
    b. $2255.00
    c. $435.00
    d. $810.00

12. What is our max loss per share if CSCO goes out of business?
    a. $22.55
    b. $20.30
    c. $22.70
    d. $23.70

DISCIPLINE | RISK MANAGEMENT | SUPERIOR EXECUTION
Out Brief

Congratulations! You have completed the primary phase of Top Gun Options! You are well on your way to becoming a steely-eyed options trader.

Throughout Primary we have focused on the fundamentals. Understanding the fundamentals is the key that opens the door to option profits. With every trade you will become more and more comfortable with how options behave in varying markets. You will learn where to squeeze out more profits and avoid making errors that lead to unnecessary losses. As we move forward into Intermediate Options your knowledge of the fundamentals will continue to grow and as we will be applying them to more complex trading tactics in order to reach your profit goals.

The tactics we learned in Primary are only the beginning of what can be done with options. You have learned how to speculate while at the same time substantially limit your risk as compared to actually owning the stock. We have also learned how to protect our stock positions using options, allowing us to sleep much better at night in these crazy markets. And perhaps most importantly we have learned to produce income while waiting to buy a stock at a good price and then turn around and make money by owning the stock. All of this we learned through understanding how to use a few option tactics, while at the same time keeping our risk in control.

Moving forward into Intermediate and Advanced Top Gun Options you will learn ways to enter option positions for less money by employing multiple leg tactics. Intermediate and Advanced Top Gun Options will walk you through a myriad of option tactics giving you numerous choices to play during up, down and sideways markets.

The most important lesson to take away from Primary, is how to build a quality trade plan. The trade plan is the foundation for disciplined trading; it encompasses all the element of our trade while keeping us focused on achieving realistic profits and our Risk Management in check. Staying Disciplined and using Risk Management guidelines will lead to consistent Superior Execution, and ultimately more profits.

Congratulations again on completing the first step on your journey!

See you in Intermediate,

The Top Gun Options Team.
Fox3 Terms Glossary

**Big Picture:** The “Big Picture” is our analysis of the current investing landscape. Having the “Big Picture” means we have a solid understanding of both the global and domestic financial situation.

**Commit Criteria:** “Commit Criteria” is the justification for engaging a target in a trade. “Commit Criteria” should be easily understood and explained in 1–3 sentences and be supported by the “Big Picture” and our fundamental, technical analysis and volatility of the Target.

**Contingency Plan:** Pre-planned actions within a Trade Plan if our trading target becomes “non-cooperative”.

**Cooperative/Non-Cooperative:** If a target is “Cooperative” it is performing as expected with our “Commit Criteria”. If not, then the target in “non-cooperative”.

**Discipline:** The art of executing according to plan, leaving emotion and irrational thought of our profit or cash preservation goals out of our decision making. For instance, if a trade triggers a trade plans Eject Criteria we get out, we do not ask questions or let the irrational thought of, “it might come back tomorrow”, affect are decision making. Without sound justification for change, we stick to the plan.

**Eject Criteria:** Pre-determined parameters within a Trade Plan us to get out of the trade immediately and preserve capital to trade another day.

**Fox 3:** A term used by fighter pilots when shooting the AIM-120 Advanced Medium Range Air-to-Air Missile (AMRAAM). The AMRAAM is a missile that is initially guided from the launch aircraft. After it has received enough information about the target it then becomes self-directed to target intercept. This is what Top Gun Options is about, providing enough knowledge and information to traders so they too, can become self-directed in their trading targets.

**Investment Radar Scope:** The “Investment Radar Scope” is our eyes, ears and mind. Once we have the “Big Picture” and have established our “Strategic Mindset” we can employ our “Investment Radar Scope” to find “Targets” that meet our “Commit Criteria”.

**Mid-Course Guidance:** Mid-Course Guidance is trade management. It includes contingency plan, profit target and Eject Criteria.
**Re-attack:** Refers to engaging a target after Ejecting from a trade or after a successful or unsuccessful trade. If adjusting our “Strategic Mindset” and applying a different “Tactic” and if it meets our “Commit Criteria”.

**Risk Management:** The active mindset of identifying, assessing and implementing appropriate risk controls into a trade plan. Included is having the Discipline to make the hard decision when risk parameters or contingency plan triggers are reached to execute unemotionally.

**SA – Situational Awareness:** In terms of a trader, “Situational Awareness”/“SA” refers to the level of how one’s perception of reality mirrors actual reality. Example: If an options trader buys a call going into earnings and volatility is coincidentally at all time highs then ends up losing in the trade, the trader had low “SA” in entering this trade. Experience, training, analysis and a good wingman add to a trader’s ability to achieve and maintain a high level of “SA”.

**Strategic Mindset:** A trader’s “Strategic Mindset” is gained by developing a Big Picture and is applied to markets, sectors and individual stocks. A “Strategic Mindset” can be bullish, bearish, neutral or volatile. For instance, a trader may have a bearish “Strategic Mindset” for the domestic markets, but maintain a bullish “Strategic Mindset” within the energy sector.

**Strategy:** Strategy refers to a plan of action to achieve investment goals. For instance, a trader’s “Strategy” may be to attain more income from their stock portfolio and their Tactic may be to employ the covered call to collect premium.

**Superior Execution:** The end result of effective Discipline and Risk Management in Top Gun Options trading practices.

**Tactic:** A “Tactic” is the option or option spread used to support the trader’s strategy. For instance: If a trader has a speculative strategy, they could employ deep in the money (DITM) calls on a target that meets the Commit Criteria to achieve their profit goals.

**Tactical Employment:** This is the leg set-up for the option Tactic chosen to support a trader’s strategy.

**Target:** Target and underlying are the same. At Fox 3 Options, we choose our targets based on our Big Picture, Strategic Mindset, Strategy and probability of success with our chosen Tactic.

**Trade Debrief:** Is conducted after closing every trade. It determines what went right, what went wrong and how can we execute our next trade more profitably. We
look at all aspects of our Trade Plan. A Trade Debrief generally take less than five minutes and is how we rapidly improve our trading skills.

**Trade Plan:** A Trade Plan consists of: Target, Commit Criteria, Tactic, Tactical Employment, Mid-Course Guidance and Exit Plan.

**Quiz Answer Key**

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