TRADING AS A BUSINESS

Prologue: Where to Begin

Let's begin with the markets themselves, and with fear and greed. We have all heard the cliches about fear and greed. They rule the markets. In fact, that's all the markets are—a reflection of these emotions. In order to make money trading, you must learn to control your fear and greed.

Overcoming Fear and Greed

We all have to deal with our runaway emotions at various times in life, and these emotions *really* begin to run away when we trade. Bill Williams' used to say in his seminars that trading was the clearest window into your own personal psychology, clearer than any other endeavor. I think he was right.

UNDERSTANDING THE MARKETS

We give in to our fear when we don't take the next trade because we've just been through a string of losers and fear losing again. We give in to our fear when we put our stop loss too close and get stopped out of a trade without giving the trade enough room to develop. We give in to our fear when we freeze as a trade starts to lose money, and we don't take the exit signal because we're afraid of losing money.

We give in to our greed when we take a profit early, before the regular signal, because we don't want to give back any of the profits. We give in to our greed when we trade more contracts or shares than we normally would because we feel good about this trade.

So we start with the question, "How can we understand the markets?" If we understand how they work, we can get a better understanding of ourselves, and in turn be better traders.

Controlling greed takes discipline. As far as fear, Peter Steidlmayer[2] explained in his work with Market Profile that markets exist for one purpose and one purpose only—they exist to facilitate trade. Facilitating trade means that the markets will do anything they can to get individuals to participate in the market. How they do this is through movement. Markets move up and down searching for buyers and sellers.

The crucial point here is that markets must move for their survival. Understanding this literally changed the way I thought about the markets. Think about it. Markets have to move! This concept is major for anyone who has had to sit through a trend-following system trading in a sideways market. The knowledge that the market has to move eventually changes the way you look at trading. It gives you confidence that the string of losses can't continue indefinitely. It eliminates the fear!

You see, Steidlmayer explained that if a market does not facilitate trade, it will die. If it does not continue to bring traders in, to lure the buyers and sellers, the market will cease to exist. And the prime directive of a market is survival. To keep traders interested, the market has to move. It cannot remain in a small trading range or traders will lose money, become disinterested and

leave. Eventually there will be less and less liquidity, traders will stop trading, and the market will die.

Knowing that a market must facilitate trade and move, or else die, has given me great confidence in trading. When I am forced to trade through quiet markets, I remember this principle. This principle has reduced my fear and increased my confidence immeasurably.

SYSTEM TRADING: MAKING GOOD BUSINESS SENSE
For me, system trading is the only answer to the problem of fear and greed, and it is the only logical way to take advantage of the concept of Market Facilitation.

First, trading a system provides the discipline necessary to begin overcoming fear and greed. Trading a system that has been back tested on historical, quantifiable data is a major way to inject discipline into your trading and to begin to control your fear and greed. If we think of a trading system as a small business, we can design our business to make money based on historical simulations. Then, our job becomes the implementation of the system rather than the interpretation of the market. If the system loses money and busts, we change the system. It's a matter of good business sense.

Second, if we know that a market must facilitate trade to stay alive, we can devise systems that guarantee that we will always be in for that inevitable big move. If we know that the big move will eventually come, and devise the system accordingly, our task becomes to minimize the drawdown (investment) while we wait. I have never been able to predict when the market was going to facilitate trade and get in for the big move. Instead, I have devised systems to ensure that I will be in for the big ride and my losses will be minimized while I wait. It's just a matter of good business sense.

As a businessman, I have concluded that the only rational way to trade the markets is to trade a system. All of the hocus-pocus about predicting when this market will move, and how far, is just that—hocus-pocus. The people that make the big money are the ones who don't try to predict tops and bottoms but who consistently take a little out of the middle. The only logical way to do this consistently is through a well thought-out, well-designed system. It's a matter of good business sense.

THE ADVANTAGE OF TECHNOLOGY
Anyone serious about finding a profitable system should use the latest technology and the best software available. This means learning how to use a computer.

When I started trading, all historical testing had to be done by hand. This was labor intensive and very time consuming. It was necessary to peruse charts visually and record the simulated entries and exits by hand.

For intra-day charts, this process was even more time consuming—the charts had to be printed with the indicators on them and for a significant length of time (several months). If these indicators didn't prove to be profitable, the process had to be repeated for the next month with

revised indicators. This process continued month after month. It would sometimes take me three to six months to find a system that would work under current market conditions.

System Writer, followed of course by TradeStation, was the first computer program to help eliminate this labor intensive historical testing. Using TradeStation to do your testing has three distinct benefits.

The first is the amount of time saved. With TradeStation on a fast PC, it's possible to test in 5 to 30 minutes systems that literally used to take hours or days to test by hand. If you place any value on your time, this cost savings alone is impressive.

Second, you can avoid mental mistakes. I have, in both myself and in talking to other researchers, found a propensity for making mistakes when performing manual historical testing. On many occasions I have found myself changing the system midstream. I have sometimes made the assumption that of course I wouldn't have taken that particular trade, when the reality is I probably would have, or of course I would have moved my stop up, when in reality I probably wouldn't have, and so on.

I can recall many situations where, when testing manually, I got different results on different days with the same data and the same system. I was either in a different frame of mind or in a different emotional state and actually made different decisions on the *same* data!

A computer, however, cannot trade a system differently tomorrow using the same parameters and data as it is using today. Its logic is consistent and can't play tricks on it. For historical testing, you can avoid this very real problem by using a computer.

Third, you can be more creative. Rather than spend all of your time doing the testing, you can have the computer do the testing and you can spend your time researching new trading ideas.

System development is like any other business. It's very unusual to find a successful business where only one individual has designed the product, does the marketing, is engaged in product development, and runs the machine to produce, package, and ship the product.

It is much easier and less stressful to hire a staff to handle the paperwork and production employees to make the product. The entrepreneur can then spend his or her valuable time in product development and planning the future of the company rather than running day-to-day operations.

In the trading business, TradeStation can be your staff and production employees. The program is indispensable in time savings, cost savings and individual productivity. It frees you from the repetitious side of the business so you can spend your time on the creative side—the side that will ultimately make you the money.

As the futures and securities industry continues to grow, more and more traders will enter this business. The competition for profits will continue to increase. For example, in the early '80s it was very easy to make a lot of money day-trading the S&P. I used a simple dual moving average crossover system on 5-minute bar charts. There were proportionately very few intra-day traders with computers that were competing for profits. But since then, with the increase in the number of traders using intra-day charts, these very rudimentary indicators have stopped working. When

everyone started using them, the profits dried up. It is much more difficult in today's markets to make the money that was there in the early years. The standard indicators just aren't that effective anymore.

I believe that the only rational way to be a successful trader is by using the best software available—TradeStation—and learning to be an effective system developer and system trader. The professional traders are all using sophisticated computers, and most of them are now using TradeStation. The technology resource differential of the past is now gone. An individual trader can afford the same technology as the successful professional. The playing field is now not resource driven but intellectually driven. Knowledge is more important than capital.

Don't Believe What I Say

The final thing I want to tell you before you delve into this book is not to believe anything I say. Check it out for yourself. It would be a mistake for you to accept anything I say without a complete personal investigation, testing it for yourself and either proving or disproving the principles and techniques that I discuss. Just because I say it doesn't mean that it's true. It's what I believe to be true and has stood the test of time for me. But I urge you to be a skeptic, to think everything through and make sure it makes sense to you. Accept the things that work for you and reject those that don't.

The idea behind this book is to give you enough information so you can be self-sufficient. You shouldn't have to depend on anyone for your trading profits. You can do this yourself.

So we begin with three principles. First, the market must facilitate trade to survive; it must eventually make the big move. Second, you must be state of the art to compete, which means using the latest PC technology and TradeStation. Third, you can do this yourself, and you should not take what anyone says for granted.

You have the tools to be independent—to do this yourself.

Do not believe in anything simply because YOU have heard it.

Do not believe in traditions because they have been handed down for many generations.

Do not believe in anything because it is spoken and rumored by many.

Do not believe in anything simply because it is found written in your books.

Do not believe in anything merely on the authority of your teachers and elders.

But after observation and analysis, when you find that anything agrees with reason... then accept it and live up to it.

-The Buddha

Chapter 1: The Principles of Successful Trading

Over many years of trading, I've found certain principles to be true. Understanding and using basic principles provides an anchor of sanity when trading in a crazy world. Whenever I find myself under stress, questioning my judgement or my ability to trade successfully, I pull out these basic trading principles and review them.

Don't Try to Predict the Future

I used to think that there were experts and geniuses out there who knew what was going to happen in the markets. I thought that these traders and market gurus were successful because they had figured out how to predict the markets. Of course, the obvious question is that if they were such good traders, and if they knew where the market was going, why were they teaching trading techniques, selling systems and indicators, and writing newsletters? Why weren't they rich? Why weren't they flying to the seminars on their Lear Jets?

NO ONE KNOWS WHERE THE MARKET IS GOING

It took me a long rime to figure out that no one really understands why the market does what it does or where it's going. It's a delusion to think that you or any one else can know where the market is going. I have sat through hundreds of hours of seminars in which the presenter made it seem as if he or she had some secret method of divining where the markets were going. Either they were deluded or they were putting us on. I have seen many complex Fibonacci measuring methods for determining how high or low the market would move, how much a market would retrace its latest big move, and when to buy or sell based on this analysis. None has ever made consistent money for me.

NO ONE KNOWS WHEN THE MARKET WILL MOVE

It also has taken me a long time to understand that no one knows when the market will move. There are many individuals who write newsletters and/or books, or teach seminars, who will tell you that they know when the market will move.

Most Elliot Wave practitioners, cycle experts, or Fibonacci time traders will try to predict when the market will move, presumably in the direction they have also predicted. I personally have not been able to figure out how to know when the market is going to move. And you know what? When I tried to predict, I was usually wrong, and I invariably missed the big move I was anticipating, because "it wasn't time."

It was when I finally concluded that I would never be able to predict when the market will move that I started to be more successful in my trading. My frustration level declined dramatically, and I was at peace knowing that it was OK not to be able to predict or understand the markets.

Know that Market Experts aren't Magicians

Some of the experts that try to predict the markets actually make money trading the markets; however, they don't make money because they have predicted the market correctly, they make money because they have *traded* the market correctly.

THEY DON'T PROFIT FROM THEIR PREDICTIONS

There is a huge difference between trading correctly and making an accurate market prediction. In the final analysis, predicting the market is not what's important. What is important is using sound trading practices. And if sound trading habits is all that is important, there is no reason to try to predict the markets in the first place. This is the reason system trading makes so much sense.

THEY HAVE LEARNED TRADING DISCIPLINE

I have watched many market gurus continually make incorrect market predictions and still break even or make a little money because they have followed a disciplined approach to trading. More importantly, they used the exact same principles that I will show you how to use in creating your system. It is these principles that make the money, *not* the prediction.

To be a disciplined trader, you have to know how and why to enter the market, when to exit the market, and where to place your money management stops. You need to manage your risk and maximize your cash flow. A sound trading system includes entries, exits, and stops as well as sound cash management strategies.

Even the market gurus and famous traders don't make money from their predictions, they make it from proper trading discipline. Over the years, they have learned the discipline to control their risk through money management. They have learned to take the trades as they come, and not forgo a trade because they are second-guessing their system or the market. These are the same practices that you will learn to include in your trading system.

THEY PROFIT FROM SOUND CASH MANAGEMENT & RISK CONTROL

Sound money management and risk control are the keys to being a profitable trader. I will say over and over again, it is not the prediction or the latest and greatest indicator that makes the profit in trading, it is how you apply sound trading discipline with superior cash management and risk control that makes the difference between success and failure.

I often tell the story of the great fish restaurant that opened up just down the street from my office. It opened with great fanfare and was ranked in the top five restaurants in the city. The food was outstanding. But it only took a little more than a year and this great restaurant was out of business. Why? Because the key to running a good restaurant is not the food. It is cash management and risk control. It is making sure your business is run efficiently, keeping your costs (risk) in control, and managing your staff effectively. If you believe that the taste of the food is what makes a great restaurant, think of how great the food is at your favorite fast food restaurant. But, someday, watch how well that restaurant is run.

Just as in the restaurant business, the key to profits in trading is not in the prediction or the indicator, but how well the trading system is designed and executed. The ability to achieve risk control and cash management will make the difference between a successful trader and an unsuccessful trader. If you ever have the opportunity to watch a successful trader, you will see that they don't worry about where the market is going or about predicting when the next big move will take place. They aren't looking to tweak their indicator. They are worried about their

risk on each trade. Is the trade being executed correctly? How much of their total account is at risk? Are the stops in the right place? And so on.

THEY DON'T HAVE SUPERIOR PERFORMANCE NUMBERS
If you want to have some fun, look at the performance of a successful market expert, one who is known for his or her market predictions and trading expertise. You will find that their performance numbers really aren't any better than an average trading system. The percentage of profitable trades, the return on the account, average profit to average loss, number of losing trades in a row.. .all of these trading parameters are within the average trading system performance parameters.

Why is this? Because you can't predict where the market will go and when it will move. But if you use correct system trading disciplines, you will make money whether you try to predict the market or just trade a good system. You might as well save yourself a lot of time, energy, and mental anguish and trade a good system.

Be In Harmony with the Market
We make money trading when we are in harmony with the market. We are long when the market is going up, and short (or out of) the market when it is going down. If we bring an opinion with us while trading, we will end up fighting the market. We keep trying to go long as the market is declining, or we keep shorting a market that it is in a bull phase.

DON'T FIGHT THE MARKET
Fighting the market is not good for two reasons. First, we lose money. How much we lose depends on how well we are managing our money and controlling our risk. Second, fighting the market affects our judgment, and causes us to try to confirm that our judgment is correct, or persist in fighting a trend so that we will eventually prove to be correct. We figure that if we persist long enough, no matter how long it takes, we will eventually be right.

The same can be said for being in a canoe in a river. There is a reason for leaving your car downstream, launching your canoe upstream, and paddling downstream. It is much easier and eminently more fun to go with flow and paddle downstream. We could do the opposite and paddle upstream. Eventually we may even get to our destination, but the cost would be substantial. It would take much more time, more physical and emotional stamina, and we would be constantly fighting the current. Reaching the goal would not be worth the cost.

Even if you ultimately make money fighting the market, it is not worth the price you have to pay, both financially and with peace of mind.

LET THE MARKET TELL YOU WHAT TO DO AND WHEN
The correct attitude for successful trading is to let the market tell you what to do. If the market says to go long, buy, and if it starts to go down, sell. This sounds easy but it is much more difficult than you think. We always like to believe that we can be in control. We want to be in control of our trading and of the market. If you accept the notion right now that you cannot

control the market, that all you can control is your execution of trades, you will take a great step toward being a successful trader.

Instead of trying to control the market, let the market tell you what to do. Let the market and your system take you long rather than you personally trying to predict or decide when to go long. Let your system take you out or get you short. Once you realize that you can't understand the market, and that you can't predict when the market will move, you will move into that detached state of mind where you let the market take you where it will when it wants to.

THE MARKET GIVES AND THE MARKET TAKES AWAY
To remove your personal biases and let the market tell you what to do is to give up control, to give up the notion that you are actually in charge of how much money you make. For profitable trading, you need to move into the mental state of letting the market determine the profits, not you. It won't be whether you predict the market correctly that determines the profits, but whether your system is in a profitable mode or drawdown mode as determined by the market.

So, let the markets tell you what to do based on your system. Let it get you long and put you short. Let the market determine how much money you are going to make. Trade your system and let the market do the rest. And know that the market gives money and the market takes away money. Your goal should be to develop a system that gives you more money than it takes away.

Have a Healthy Time Horizon
One of the biggest problems new traders have is that they think they will make a large amount of money right away. They think they will get rich quick. This type of reasoning is very similar to the short-term thinking in American business in general, usually managing for the current quarter's profits, focusing on short-term earnings at the expense of long-term investment and profit growth.

TRADE FOR PROFITS OVER TIME
Traders tend to get wrapped up in current market conditions, the news of the day and the current trade, usually at the expense of the big picture and profits over time. My grandfather used to have a saying, "You can't go broke taking profits." He was very wrong. You can go broke taking profits. If you take profits before the market tells you to, or you succumb to fear and close out the trade before its time, you are focusing on the short-term and forgetting how to make money over the long haul. Close out no trade before its time.

GIVE YOUR TRADING SYSTEM ENOUGH TIME TO WORK
We tend to be impatient, and we sometimes think that we should get instant gratification. This will not work in trading. The only way you will really know whether you are a successful trader is to be successful over time. A week or a month will not be enough time to tell you how you are doing. You should be trading with the objective of making money in the long run, consistently, and with the confidence that your system will make money given enough time.

One of the benefits of trading a system is that having done the requisite historical testing, you should know how long it should take you to start making money. You should have an idea as to the length of time that the system has lost money in the past, how much money it has lost, and how long it will take the system to become profitable. If the system has proven profitable historically, it should be profitable in the future. You just need to give it the necessary time to do its work.

Understand the Psychological Keys of Trading

There are many people who teach the psychology of trading. There have been many books written and effort spent on seminars trying to teach the discipline needed for trading. I don't think trading is that complex. I have developed a few simple psychological rules for myself, and once you accept them, they should greatly enhance your ability to trade effectively.

ACCEPT LOSSES AS A COST OF DOING BUSINESS

Most successful traders will tell you that the most difficult thing about trading is accepting the losing trade. We all have the desire to be to be right, to be correct all of the time. For novice traders, the losing trade means that something is not working and that you have somehow made a mistake. For experienced traders, losses are just a cost of doing business.

Some of the best traders in the world lose money on more than half of their trades. If you look at the performance results of the best traders and money

managers, you will see that they all have a large percentage of losing trades. If you trade, I guarantee you that you will have losing trades. Learn to love losing trades. They should be your friend because you will be spending a lot of time with them.

USE HISTORICAL STATISTICS

I don't think anyone has ever traded without first looking at historical statistics. Even some traders who deny they are system traders have used historical data. And before System Writer and TradeStation were available, most good traders developed a system's history by hand. I can remember countless hours pouring over charts spread out on the kitchen table, writing down trades by hand. Before I would trade it, I absolutely insisted on knowing what the system's personality was and how much money it would have made.

Using historical statistics gives you great peace mind, particularly in learning to love losing trades. Knowing the history of a trading system can give you tremendous psychological comfort during those tough periods of losing trades and drawdown. Historical statistics tell you how much money the system has lost in the past, how many losing trades it has had in a row, and the largest losing trade the system has experienced. This is very important information if you are learning to accept losing trades. Comparing historical data with the current string of losses and drawdown can give you much comfort that what you are experiencing now is not unusual and has happened before. Maybe not in exactly the same manner, but it has happened before.

LET THE MARKET AND SYSTEM DETERMINE THE PROFITS

Don't have an opinion, don't try to predict the market, and don't try to second-guess your system. It's human nature to have an opinion about things, but this opinion can become a stumbling block if we let it affect our trading. One of the alluring aspects to having an opinion on the market is the exhilaration of being right. Even though we know that the chances of being right are slim, we nonetheless want to prove our intellectual prowess by being right. Your trading system is ultimately a little business. You have developed and tested the product and are now operating the business in the real world. Let the system be the system. Let it make the money you know that it can. And know that if the market doesn't move in the manner that will allow the system to make money, it won't make money. Ultimately, the market determines the profit through its movement. If it doesn't make that move, there will not be profits.

Put the responsibility of making money on the system and the market. When they work together, you will have a profitable business.

Don't Trade for the Money

I have met many successful people, and the one thing that they have in common is that they love what they do. Many have told me they can't believe that they actually get paid for doing what they do. They have so much fun they feel guilty taking money for doing it. Many successful people will tell you that they would do what they do even if they weren't paid at all.

SUCCESSFUL PEOPLE DON'T WORK FOR THE MONEY

Work hard and love what you are doing and the money will follow. Successful people work first and count the money later. Sometimes they don't ever count it, and some don't even know (or care) how much they have. They just know that they have enough to allow them to continue what they are doing; working hard and having fun.

LOVE TRADING FOR ITS OWN SAKE

I know that many individuals want to trade because they think that they can make a lot of money easily and quickly. Because of the low start-up costs for trading as compared to other businesses, they think that trading should be the easy road to riches. Their goal is to make a lot of money fast. These are the people who come to seminars and want an indicator that will guarantee profits. They don't want to learn the ins and outs of the business; they want the magic indicator that will get them the money they desire. They are doomed to failure. I remember a guy named John walking into a seminar I was about to teach. He threw up his hands and said, "Ah, Traders! I am glad to be home." This individual was a successful trader. John loved going to seminars, not so much for the techniques and indicators, but for the camaraderie. He loved being around traders, talking with traders, analyzing trading systems and techniques, and learning about the latest and greatest trading technology. He loved learning the latest features added to TradeStation and finding out a new way to use EasyLanguage.

He loved designing new indicators, and spent countless hours working on new and different ways to exit the market. He was excited about getting up early in the morning to monitor the

overnight market information and checking what the S&P was doing in London. He looked forward to calling *his* broker and putting in *his* orders. He loved watching his system run on TradeStation. He was exhilarated when he had to call *his* broker and give him a lot of grief for the latest bad fill. He even loved losing trades. Even when he had to take a losing trade, he was still doing what he loved to do—trade.

John is a successful trader. He loves what he is doing. And as long as he can keep on trading, he will be happy. The money he makes is secondary, but he makes a lot of it. He can't believe that he can have all of this fun and make money as well.

Concentrate on Execution

All of your market and system analysis should be done before the markets open. The system design should be clear in your mind. You should have the historical Performance Summary of your system at your fingertips to remind you of the personality of the system, how much money it has made over time, and what its largest string of losses in a row has been. You should know what kind of orders you are going to place, and how you are going to communicate this to your broker.

The last thing you should have to worry about during market hours is where the market is going, and whether to be long or short. Your system will tell you all of this. You should not be concerned about the news, or even if you are making or losing money. You should not be concerned with analyzing the market, always reserve this for when the market is closed.

The only thing you should be doing during market hours is concentrating on effectively executing your system. If you can't execute your system effectively, there really is no point in trading. There are two sides to trading, system development and trading execution. During market hours is when you should concentrate on execution and nothing else.

Always Be In the Market

I have always characterized trading the trend as "keeping your costs down while waiting for the big move." We know that to trade profitably, especially for trend traders, you need to be in the market for the big move. Many traders stay out of the market when it's quiet and try to predict when the big move will occur. These people invariably miss the big move.

Instead of trying to predict when the big move will occur, your task becomes to minimize your losses and drawdown while you are waiting for the big move to occur. This is a different way of looking at trading that focuses on managing cash flow and risk rather than finding magic indicators and making good predictions. Trading thus moves from a hobby to a business.

The only way to ensure that you won't miss the big move is to always be in the market.

Buy High - Sell Low

Probably the most interesting rule for successful trading is to "Buy High and Exit Higher, and Sell Low and Exit Lower." This is counter-intuitive to what we all have a natural inclination to

do, which is buy low, sell high. Most great trading systems are counter-intuitive. They are not based on our normal human nature and the normal human reaction to the markets. They consistently make money because they are designed with market sense not human common sense.

In the final analysis, any market is just a collection of individuals making decisions and placing money in the market based on these decisions. Most of these individuals are doing what comes naturally to humans, buying low and selling high. Statistics show that 95% of these people lose money.

To be a successful trader, you have to do the opposite of what this 95% is doing. It isn't easy, because it goes against your human nature. But any system that is successful over time will most likely follow the rule of "Buy High, Exit Long Higher and Sell Low, Exit Short Lower."

Chapter 2: The Path to Successful Trading

In the broad category of "trading the markets," there are basically three types of trading: discretionary, technical, and system-based. When I sat down to write this book, my intent was to write only about system trading. But then I realized that to fully describe system trading, it was also necessary to discuss discretionary and technical trading. It's important that you understand the difference between them, which is not always clear. I've met many people who believe they are system traders when they're actually technical traders, and vice versa.

I have known and taught many traders, and have observed that there are four distinct stages of trader education: discretionary trader, technical trader, system trader, and complete system trader. All successful traders have gone through them. It is almost impossible to be a successful system trader without going through all of these stages. My goal with this book is to help you understand and move through the stages at much less cost in both time and money.

Every trader usually starts out as a discretionary trader. The amount of money lost generally determines how long it takes the individual to start using technical indicators to make trading decisions. Eventually, as even employing technical indicators fails to move the trader into profitability, the trader moves into the third stage and starts to write systems based on quantifiable data. It is at this stage that the trader ordinarily starts to make money. Finally, the systems and money management strategies are refined and the individual becomes successful as a system trader.

The Discretionary Trader

A discretionary trader uses a combination of intuition, advice and non-quantifiable data to determine when to enter and exit the market.

Discretionary traders are not restricted by a concrete set of rules. If you are a discretionary trader, you can make buy and sell decisions using whatever criteria you deem to be important at the moment. For example, you can use both a combination of hot tips and relevant news stories from *The Wall Street journal,* and enter or exit the market based upon this information. If you

begin to lose money, you can immediately exit the market and change your trading method. You don't have to use the same techniques day in and day out. It's a very flexible way to trade that you can customize based on what you think the market is going to do at any given moment.

For the discretionary trader, trades are made using gut instinct and intuition. Unless a computer is generating a buy or sell signal and you actually follow the signal, your emotions will affect your trading. I explained in the introduction what problems instinct and intuition could in trading. Remember fear and greed? In discretionary trading, technical tools such as indicators are sometimes used;
however, when they *are* put to use, they are utilized sporadically as opposed to systematically.

Fascinated by the markets, the discretionary trader is ready to put on a trade at a moment's notice. The most uncomfortable part of trading for the discretionary trader is when there is no action. So he will jump on any piece of information, anything that will permit him to take a stab at the market. Above all, he craves the action.

INTUITION & HOT TIPS

The discretionary trader uses several sources for his trading decisions. One is intuition, for example, "I see a lot of people in stores, so I think the economy is good, and earning will increase, so the stock market should go up, and I should buy Sears." He usually spends a lot of time talking to his broker. "What do you think Joe, isn't Woolworth's going to turn around?" Another is reading and watching the news, "Retail sales are looking strong and Woolworth's is closing stores to lower their overhead."

Hot tips are a common way that a discretionary trader gets ideas. A call from his broker or good friend, or a tip from a discussion at a cocktail party are all places the discretionary trader gets *his* trading ideas. "Hey George, HTECH Corp. has a hot new product in the works, here's a stock you can pick up cheap." If it gets dry in the summer, our discretionary trader may decide to buy Corn, Beans or Wheat. However, when he looks out the window and notices that it's raining, he sells the position immediately. A news story on the nightly news may cause a discretionary trader to short the airline that has just had a crash.

CRAVES EXCITEMENT

What a discretionary trader loves is the excitement. He loves being "in the markets," playing with the big guys. He craves the risk, the excitement of trading, and the gambling rush that he gets from calling his broker and putting in the order to buy. He loves being able to sell Gyro Corp. based on the news story of the health hazards of their top selling Gyrometer. He has a real obsession for buying Cotton based on the hot tip from his broker that the upcoming crop report was going to be bullish, and he covets the tip from his friend who called to say that he just bought Techno Corp. because the latest quarterly earnings were going to be a surprise on the upside.

Discretionary traders retain the flexibility of changing their buy and sell criteria from moment to moment, and change they way they trade from minute to minute and day by day. "Well, that last trade was a disaster, so tomorrow I will buy MacDonald's only if it opens up from yesterday's close." They don't have any discipline, nor do they think they need any. They use their intuition and their gut instinct, and feel justified in doing so. They think, "Making money is easy, you just have to be smarter and quicker than the next guy."

I personally don't know anyone who has made money by discretionary trading. They may have been lucky and won on a few trades, but overall, over time, discretionary traders always lose money.

It is after enough money has been lost that the discretionary trader in some way stumbles across technical indicators. It may be from the chart book he just looked at where there was a Stochastic Indicator underneath the chart. Or he may have gone to the latest *Make a Million Dollars Trading the Stock Market* seminar and found out that using the Relative Strength Indicator is the sure way to stock market profits. He thinks, "So this is how they do it!" These indicators look like magic. They add some rationality to an otherwise irrational trading style. He thinks, "This must be how the big money players make the big money—they use technical indicators!"

DISCOVERS TECHNICAL INDICATORS

Once the discretionary trader discovers technical indicators, he or she incorporates some rudimentary ones into trading, usually as additional justification for making the trade. "Not only did Ralph (my broker) tell me to buy Gizmo Corp. but Gizmo has great relative strength. Gizmo's moving averages are bullish, and the Stochastics are oversold and giving a buy signal as well."

These newfound technical indicators give the discretionary trader a new lease on trading. Now our trader has a whole new world in front of him—the world of technical trading. For awhile, this newfound world combines with the intuition and the discretionary trader views himself as a system trader. He says, "I trade a system using moving averages and Stochastics with a dash of daily news and tips from my broker. I am now a real objective system trader." While the trader may view himself as a system trader, this could not be farther from the truth. The discretionary trader's style is still undisciplined, based on newly educated guesses, and he is probably still losing money.

For a moment, these technical tools were thought to be the answer, and while they add a little more rationale to his trades, the losses continue to pile up. Despite his continuing angst, our discretionary trader is now on the way to becoming a technical trader.

The Technical Trader

A technical trader uses technical indicators, hotlines, newsletters and perhaps some personally defined objective rules to enter and exit the market.

As a technical trader, you are beginning to realize that rules are important and that it is appropriate to use some objective criteria such as confirmation before making a trade. You have developed rules, but sometimes you follow them and sometimes you don't. It depends how confident you feel today and how much money you are making or losing. If an indicator gives you a buy signal, you may override it because your broker told you the earnings report was going to be negative. Or maybe the bonds are up, which means interest rates are rising, and you better see how high rates go before you commit more money to this already overpriced market. You may think, "I have a profit, hmm, I just may take it now. Even though the Stochastic is not overbought, the markets are tough. It's not easy to make money. Like my father said, 'you can't go broke taking profits.' At least now I have a winning trade. I'll sleep well tonight."

Our trader now begins to realize that using the intuitive and hot tip approach will not lead to profitability. He now begins to focus on the technical indicators themselves. There are so many! Moving Averages, Exponential and Weighted. The MACD, Momentum, P/E Ratio, Rate of Change, DMI, Advance/Decline Line, EPS, True Range, ADX, CCI, CandleSticks. MFI, Parabolic, Trendlines, RSI, Volatility Expansion and Volume and Open Interest, just to name a few. So much to learn and so little time!

This whole new world of technical books, seminars, newsletters, and hot lines now begins to preoccupy our trader. He learns all he can about indicators. He wants to find the one indicator that will ensure profitability. He surrenders to what I call Indicator Fascination.

INDICATOR FASCINATION

The first assumption that our trader makes is that someone out there must know how to do this. There must be an expert, someone who knows how to make money that has created the magic indicator to do it. This is the Holy Grail syndrome and our trader now embarks on a search for the Holy Grail Indicator. He knows intuitively that there must be an indicator that will give him the information he needs to make profitable trades. That there must be teachers out there that know how to make money trading. He thinks, "All I need to do is find him and his indicators."

This is the indicator fascination phase. How are indicators calculated, what do they represent, and are they the "secret" to making money? All of these questions need to be answered so he becomes a seminar junkie, travelling the country on the quest for that great technique, the one that everyone uses to make the big money. Chicago one month, L.A. the next. A visit to the Chicago Mercantile Exchange. He watches the CNBC expert technicians and surfs the net looking for that magic indicator.

Now he'll only buy when the ADX is moving up and the MACD is positive, and he'll sell only when the RSI gets overbought and turns down. His trading becomes more indicator-based and he listens less to his broker. For example, he may tell *his* broker, "No, I won't buy Apple Computer until the Earnings Momentum Indicator is over 80!" Unfortunately, even with all of this information, and all the assurances of his seminar leaders, he still is not making money. He even begins to wonder if he will be able to continue trading with all of these losses. He thinks, "If I could only control the losses, I will probably be able to trade a little longer before my money runs out."

It is at this stage that he learns the value of stop losses, known as *stops*. He learns the importance of managing the risk on each trade. He gets a hint that there is more to trading than just the indicator, and *his* ears perk up when people mention the concept of controlling risk and conserving capital. He thinks, "I just want to stay in the game, to keep enough money to make the next trade. I don't want to quit a loser!"

But even with the new found indicators, and controlling *his* risk with stops, he continues to lose money, although he also consummates some winning trades that keep his capital from depleting too quickly. And here he has another major revelation—markets can be trending or choppy. It is at this point that he realizes, "If I could only predict the choppy markets, where I lose most of my money, I could simply stay out of the market and get back in when it starts to make the big move." So he starts another quest, that of leaning how to predict choppy markets.

PREDICTING THE MARKETS

Discontinuing the use of the old technical indicators, our technical trader now begins to flirt with the Elliot Wave theory, W.D. Gann techniques, and Fibonnacci Targets and Retracements. These techniques generally claim to help you predict when the market will be choppy and where and when it should be bought and sold. He does all of this studying so he can learn to stay out of choppy markets. It makes a lot of sense. Someone out there must know when the markets are going to go sideways and then step aside waiting for the next big trend. When the trend comes, they get on it and ride it for big profits. They then exit and wait for the next trend. He hears promises that he should be able to forecast all of this by using these predictive techniques.

Unfortunately, after several seminars, our trader tries to predict a corrective stock market and ends up mistaking it for the next big wave up. He explains to *his* friends, "I missed the big move because I thought we were in Wave B but the market was really in Wave 2 ready to start Wave 3. If I had just used my old trusty indicators instead of trying to predict the move and waiting, I would have made big bucks."

HISTORICAL PROBABILITIES

It finally occurs to him that he should back test some techniques and see how some of his indicators would have worked historically; he reasons that if he can do this, he would have more confidence and discipline in his trades. He begins to understand that no one (including himself) can predict the market. He starts to realize that he needs to have some confidence that the techniques he is going to use have worked in the past. He now knows that he can't predict the market. He thinks, "All I really need to know is what the probabilities are when I put on a trade according to my rules, and I should make money."

Our technical trader has now passed the second big initiation and begins to sense the need for trading a system. He realizes that there is immense value in historical system performance data. He purchases TradeStation and dives into learning how to design and trade systems.

The System Trader

A system trader trades a system—a method of trading that uses objective entry and exit criteria that have been validated by historical testing on quantifiable data.

System traders are restricted by a set of rules. These rules make up what is known as the system. As a system trader, you will not deviate from your system's rules at all, unless you have decided to use a different system altogether. When your system tells you to buy, you buy. When your system tells you to sell, you sell. And you buy or sell exacdy how much your system tells you to. You read *The Wall Street journal and* talk over the markets with your broker, but you don't make trading decisions to override your system because of something you read or heard from your broker.

The reason you are restricted by your rules is that your rules are sound. As a system trader, you've spent a lot of rime and research in creating those rules. Your rules have been hand-designed by you and tested and re-tested on years of historical data. This testing has given you positive results and the conviction that lets you know it's rime to take your system into the future. Your emotions might still fly as high and low as the market, but at least they are not causing you to make bad trading decisions.

Our system trader has now left behind the gurus, the hotlines, and the broker recommendations, and has stopped trying to predict which wave the market is in and how far it will go. He has purchased and learned how to use TradeStation. He is becoming knowledgeable about computers, data and technology. He has realized the value of quantifiable data and back testing, and starts to put on trades with the confidence that comes with knowing the historical track record of the same system for the last 10 years. He is slowly learning the business of trading.

QUANTIFIABLE DATA

One of the first things a system trader needs to understand is quantifiable data. This is the data that he will correlate to the market and use to develop his trading system. Without quantifiable data, he would be unable to trade a system.

Quantifiable data is measurable data. Stock and commodity prices are quantifiable, as is volume. All technical indicators that are derived from price and/or volume are quantifiable and useable in designing a system. Are phases of the moon quantifiable? Yes, as are the location of the planets. They occur in a regular pattern, and each occurrence is measurable and predictable. What about earnings per share or the price earnings ratio of stocks? Yes. These are also quantifiable and can be used in system trading.

Once you understand what quantifiable data is, it is easier to spot non-quantifiable data. Non-quantifiable data usually consists of random events that cannot be reduced to a number and that cannot be predicted. For instance, speeches by politicians are not quantifiable, although we know that they can have a profound effect on stock prices. Opinions of our broker are not quantifiable. Are earnings surprises quantifiable? No, but quarterly earnings reports are, and they usually have a significant effect on stock prices. Are weather patterns, droughts, or freezes quantifiable? No, although we know they too have a considerable effect on commodity prices, it is not possible to quantify droughts and correlate them to Soybean or Corn prices.

A system trader thus moves into a mode of acquiring and testing quantifiable data as it relates to historical price activity. This is a marked difference from a technical trader, who tries to correlate data to price but usually through observation and intuition, and from the discretionary trader, who doesn't use quantifiable data at all or feels he needs to in order to make money.

It is this acquisition and use of quantifiable data and the software to test it that enables the system trader to investigate trading techniques historically and begin to put some rational and enlightened business practices to use in his trading. It is this process that enables him to start finally making money.

HISTORICAL ANALYSIS

For some time now, our system trader has been using TradeStation to develop trading systems. He has learned rudimentary EasyLanguage and is actively testing various trading strategies. He has learned that just because something looks good visually and is profitable over a short period, it might not make money over a long rime frame. He has also experienced the confidence that comes from knowing that a particular system has been profitable in the past.

Even though he knows that the market will never quite replicate that past, it is much more comfortable to trade a system that has been historically tested than to trade intuitively. He knows that the success of a system is not directly tied to the indicator, but to other factors: exits, money management stops, and cash flow management.

Because of the extensive time he has spent working with TradeStation, he also knows the ins and outs of risk control. He has done extensive back tests and found out that if he puts his stop losses too close, the system takes too many trades and makes less money. He has studied set-up and entry and how they work together to get you in the market. He knows the difference between exits and money management stops. He can now historically test any indicator or technique and immediately know how profitable it was in the past. He doesn't have to rely on anyone but himself to make trading decisions.

The system trader has also learned much about himself in this process. For instance, he has learned how much money he is willing to risk on any trade. He knows he can't take a hit for, say, more than $1,500. He knows that he can only take a certain amount of drawdown and can only stomach a certain number of losing trades in a row. He may refuse to trade a system that has more than four losing trades in a. row. He just knows himself, and he knows he wouldn't be able to handle it. He adjusts any system he develops to account for this. However, maybe he can

watch his account go through a $12,000 drawdown if he knows that he won't have a lot of losers in a row; especially if he has the historical information that confirms that a $12,000 drawdown is not unusual for his system.

The key is that he has learned to customize the parameters of *his* systems to fit his personality. There is no point in designing a great, profitable system if you won't be able to trade it!

The Complete System Trader

The complete system trader has learned to use advanced cash management principles, trades multiple markets, and may trade multiple systems in each market.

The successful system trader realizes that the key to long-term profitability is how the cash flow is managed, not what indicator is used. He is done with trying to predict the markets and has stopped looking for the Holy Grail indicator. He understands that system trading is not unlike most other businesses and has turned his trading into a sophisticated business based on sound business principles.

Remember the great fish restaurant that I mentioned in Chapter 1. It opened and immediately received rave reviews; it was ranked four stars (out of four) by all of the restaurant critics. It was hard to get in at peak times because you always got a great meal. Again, it is not the food that makes a successful restaurant.

Of course a restaurant needs a good chef and good food. But to stay in business it needs much more than good food. Costs, service levels, and cash flow need to be managed effectively. I realized that many successful restaurants have mediocre to poor food (just visit any fast food joint). But they stay in business because the management has mastered restaurant management, which has nothing to do with the taste of the food.

Trading is really no different. Traders become successful because they understand trading management. Trading management has nothing to do with indicators, but has a lot to do with the details of managing trades and cash flow[7] effectively. The complete system trader can say, "Of course I need solid indicators, and I have my favorites. But I think with what I know about trading now, I could make any indicator profitable."

Successful traders understand that to be successful and stay in business more is needed than simply a great indicator.

CASH MANAGEMENT & RISK CONTROL

Our system trader is now spending a lot of time using TradeStation to focus on cash management. He has found a group of indicators that he trusts, has back tested, and has worked with for enough time now so that he knows their strengths and weaknesses. He'll tell you, "I have finally realized that there is no Holy Grail. There is only so much money in the markets and most indicators can be rigged to catch most of the moves. The real task is to manage your money efficiently to take advantage of market moves."

Our trader is now focused on refining techniques concerned with how to scale into a potential big move, and how to scale out as the market moves in *his* direction. He is focusing on the value of pyramiding a position to maximize the leverage of his open equity. He is using his accumulated net profit to be able to trade bigger positions without risking his own capital. The successful system trader focuses his TradeStation testing on the percentage of his account that should be risked with each trade, so as to maximize his profits and minimize the drawdown.

Don't underestimate how critical the size of your trade is, and how important it is to add to a position at the right time. This may be more important than the system itself!

TRADES MULTIPLE MARKETS

Our system trader has observed that to maximize his return, he must trade multiple markets. At any given time there may be only one or two sectors moving. If you are only trading one market, you will have to wait for the next big move and fund the drawdown. The more markets you trade, the greater the chance that one will be in a big move. It is also likely that the profits in the markets that are moving will be greater than the drawdown in the markets that are not. That is the ideal situation because you can then reduce the fluctuation in equity and have a more predictable cash flow.

Our system trader now understands the age-old notion of market diversification. With back testing, he is now able to test the combination of systems and markets and how they integrate into a comprehensive trading strategy. An overall strategy is now coming into focus that includes trading several markets.

TRADES MULTIPLE SYSTEMS IN EACH MARKET

Our system trader has also learned to recognize that every market goes through different types or phases of movement. He is finding out that it is possible to define what that movement is and develop a system to profit from that action. He may say, "I used to only make money when a market was in a trend; I am basically a trend trader. But a few months ago I added a Volatility Breakout system to compliment the trend system. When a market is not trending, I can still get some money out with the VB system. This money to some degree funds the trend-following system drawdown in a non-trending market, and levels out my overall cash flow."

As you can see, our trader is now talking an entirely different language. He has become a sophisticated money manager intent on maximizing the profits of *his* business. He has come a long way from being a seminar junkie, consumed with Indicator Fascination. He realizes the value of technology, and the immense capacity of software like TradeStation. He adds, "I really don't know how I would do this without today's software and technology. It would be like trading blind." Or like being a discretionary trader.

Decision Models

I have always been interested in the science of how we as human beings make decisions. Life is really all about making decisions. If we can improve the way in which we make decisions, it stands to reason that we will be more successful in life. If we can improve the manner in which we make our trading decisions, we will become a more effective trader and hopefully make more money.

In my early years of trading, I always wondered whether there was statistical proof that system trading was inherently more profitable than other types of trading. I knew from my own experience that it was but I was unable to prove it statistically.

I then picked up a book called Decision Traps[3]. This is a book about the process of decision making and I picked it off the bookstore shelf when I was attempting to learn how to make better trading. I didn't know at the time that it would put forth the notion that objective decisions (i.e., system trading) produce far superior results than other non-objective forms of decision making.

In this book, nine different types of decisions were tested using each of the three different decision methods. The accuracy of the decisions was then compared and analyzed for effectiveness in predicting final outcomes. The investigator looked at different types of decisions, predicting grades, predicting recovery from cancer, performance of life insurance salesmen, as well as predicting changes in stock prices. He used three different decision making processes: an Intuitive Prediction Model, a Subjective Linear Model, and an Objective Linear Model. Interestingly enough, these can be compared to our 3 types of traders: discretionary, technical and system.

INTUITIVE PREDICTION MODEL (DISCRETIONARY TRADER)

Intuitive prediction is defined as making a decision without the use of any objective or quantifiable data. For instance, in trying to predict the academic performance of graduate students, the researches asked their advisors to do so without seeing their grades and just by talking to them. The decision-makers had to rely on their intuitive impressions and any other factors they thought relevant (how the students dressed, their language skills, grooming habits, etc.).

This is the same way our discretionary trader makes trading decisions—using intuition and gut instinct. Although he might think he does, he does not use any objective criteria. In predicting the stock prices, it is highly likely that the researcher engaged a discretionary trader to predict the future prices of stocks.

SUBJECTIVE LINEAR MODEL (TECHNICAL TRADER)

A Subjective Linear Model is a much more complex decision making process. It starts with interviewing experts in a field and learning how they make decisions. The researcher literally asks the expert how he or she makes decisions and they respond by explaining how they make their predictions. Although these experts are not using quantifiable data, they have enough experience and knowledge in their field to be successful. This decision making process is then outlined by the researcher.

For instance, a physician, highly experienced in treating cancer, probably has become fairly adept at predicting the life expectancy of *his* patients, even without using any objective data. The researcher interviewed the physician and attempted to determine exactly how the physician made this assessment. Then the researcher put this newly quantified data into a regression model and attempted to predict the life expectancy of cancer patients.

This is very similar to how our technical trader makes decisions. He goes to seminars and reads books to learn how the experts make decisions using technical indicators. He then takes what he learns and attempts to trade like the experts. In a sense, he does his own regression model of the expert's process to make trading decisions.

OBJECTIVE LINEAR MODEL (SYSTEM TRADER)

For the Objective Linear Model, the researcher developed an objective model based on historical tests and observations to predict results. This is defining and using quantifiable data, running historical tests, and then using the results of the tests to predict future outcomes.

For instance, the researcher would look at reams of physical data from cancer patients, and correlate the data with how long the patient lived. After running the historical tests, the

researcher would then obtain the physical data from a cancer patient, and using the historical test data, attempt to predict how long that cancer patient will live.

This is exactly what a system trader does. He runs historical tests and then uses that data to take a position in the market. He uses objective, quantifiable data tested historically to make his trading decisions. Table 1 shows the results of the tests.

Types of Judgments	Intuitive Prediction	Subjective Linear	Objective Linear
Academic Performance of Graduate Students	.19	.25	.54
Life Expectancy of Cancer Patients	-.01	.13	.35
Changes In Stock Prices	.23	.29	.80
Mental Illness using Personality Tests	.28	.31	.46
Grades and Attitudes in Psychology Course	.48	.56	.62
Business Failures using Financial Ratios	.50	.53	.67
Student's Ratings of Teacher's Effectiveness	.35	.56	.91
Performance of Life Insurance Salesmen	.13	.14	.43
IQ Scores using Rorsach Tests	.47	.51	.54
Mean (Across all Studies)	.33	.39	.64

In every case, the Subjective Linear Model outperformed the Intuitive Prediction Model but only by a small margin. If you look at predicting the changes in stock prices, the Subjective Linear Model only slightly outperformed the Intuitive Prediction Model. This correlates very closely with my experience in trading. Technical traders do only slightly better than discretionary traders and neither of them make much money. While the difference in expertise and experience between a discretionary trader and a technical trader is substantial, the resulting profitability is hardly noticeable. The real insight from this study comes when we look at the results of the Objective Linear Model. In every case, the Objective Linear Model outperformed both the Intuitive Prediction Model and the Subjective Linear Model. In some cases, the improvement was minor, and in others it was substantial. It is interesting to observe that the greatest improvement came when using the Objective Linear Model in predicting the changes in stock prices. Here was the proof I was seeking—a definitive study showing the benefits of objective decision-making as opposed to other forms of decision making.

This is my experience as well. The greatest improvement in trading results (profitability) comes when a trader begins to use objective quantifiable data and does historical tests to develop trading systems. In this study, this is confirmed not only with changes in stock prices, but in the other disciplines also. If there ever was a case to be made for considering system trading, this is it.

The Benefits of System Trading

I believe that a trading system, which has been properly developed and tested, can make you more money than trading any other way. However, this is not the only reason that system trading is the method of choice for most successful traders. There are other benefits as *well*. One of the most important benefits is that you can sleep well at night knowing that you're trading a system that has been tested and re-tested, and is proven to be successful. No matter what happens in the market during the day, the confidence you have in your system makes this type of trading easier on you.

Another advantage is that you can choose a market and a trading system that compliments your personality. The basic idea is that the trading system you select is based on the type of market action you are the most comfortable trading. Those who desire to always be in the market will select a different system than people who prefer short-term positions. If you get a thrill out of riding the big trends, then you will select a different type of system than someone who enjoys going against the trend.

Have you ever received an unexpected call like this, "Hi, Joe. This is Stan, your broker. We need to settle the margin on your account. Looks like the market really went against you this week"?

If you are a system trader, this is not likely to occur. System traders always know where they stand financially. They know this from the financial results of the historical tests. If you do get a call like this, you will most likely be expecting it and will have planned for it. You have creatively designed a system based on the amount of money you have to work with. As a part of knowing the maximum equity drawdown associated with your system, you can determine the system's capital requirements and make adequate provisions to provide enough capital to maneuver through the eventual drawdown. There will be no financial surprises.

I've been talking at length about why system trading is the most viable way to make money in the markets and what type of skills and knowledge are necessary to be a successful system trader. I showed you a study that in my view gives very solid proof that system trading (objective decision making) is the most successful way to make decisions. If there was ever any doubt in my mind, this study cleared it up. I hope you are now convinced that if you want to make money you should be a system trader.

So let's go on to the nuts and bolts of creating viable trading systems.

Chapter 3: Markets, Systems& Time Frames

The first step in developing a trading system is to select the market action and corresponding system type that you want to trade. As I've discussed, selecting a system type is a very important part of system trading and you should take your time in evaluating the alternatives. Many factors

will influence your decision, but your own personality will ultimately direct you to the system that is right for you. In making the choice, the most important thing to remember is that it is yours to make alone. Read everything I have to share with you about different types of systems, but then decide for yourself. Only you really know what type of person you are and therefore what type of trading is best for you.

This chapter will help you to understand some of the conditions that can occur in the market, and the system type that complements those conditions. Once you are familiar with the basic system types, you will be able to select the one you want to use.

Three Market Types

Generally, there are three types of markets. The three market types, or phases, are derived from three distinct chart patterns that appear when there is a shift in market action. The phases are trending, volatile, and directionless, and each can be characterized by specific price activity. Take a look at the following charts and familiarize yourself with each different market pattern.

TRENDING MARKET

A sustained large increase or decrease in price characterizes a trending market. Take a look at Chart 1. This weekly chart of Coca Cola (KO) from early to mid-1997:

Chart 1

**TradeStation EasyLanguage
Indicator: Moving Ave Cross**

Input: Price(Close),Length1(9),Length2(18);

Plot1(Average(Price,Length1),"SimpAvg1");
Plot2(Average(price,Length2),"SimpAvg2");

In fact, this stock has been in an up-trend since 1994. KO has almost tripled since then. This trending market was characterized by sustained up moves with very small and short-lived corrections. The 9- and the 18-period moving averages are included in Chart 1. A trend trader would buy the market when the shorter 9-period moving average crosses above the 18, and hold the stock until the 9-period average crosses below the 18. In this time period, he would have held KO for at least two trend moves.

Now take a look at this daily chart, Chart 2, of the Swiss Franc from mid-1996 to early 1997:

Chart 2

TradeStation EasyLanguage
Indicator: Moving Ave Cross

Input: Price(Close),Length1(9),Length2(18);

Plot1(Average(Price,Length1),"SimpAvg1");
Plot2(Average(Price,Length2),"SimpAvg2");

Created with TradeStation by Omega Research © 1997

In this time period, the Swiss Franc has been in a daily downtrend for many months. It has lost more than 15% of its value over the period. This market was characterized by a sustained downmove with very small corrections. The same moving averages were plotted here, the 9 and 18. Note that if you had followed these averages, you would have stayed short for several months at a time.

The time frame you are looking at is important when you consider the type market action. Chart 3 shows the same Swiss Franc viewed on a monthly instead of daily chart.

Chart 3

TradeStation EasyLanguage
Indicator: Moving Ave Cross

Input: Price(Close),Length1(9),Length2(18);

Plot1(Average(Price,Length1),"SimpAvg1");
Plot2(Average(Price,Length2),"SimpAvg2");

Created with TradeStation by Omega Research © 1997

The downtrend in 1996-1997 looks a little different when put in this perspective. It looks like the most recent move in a directionless market. And if you had traded the same moving averages on Chart 3, you would have been chopped around and most likely lost a lot of money. The point is that you should be aware that a directionless monthly or weekly chart might have very tradable daily trends, and vice versa.

DIRECTIONLESS MARKET

A directionless market is characterized by smaller, insignificant up and down movements in price, with the general movement sideways. We probably would not call Chart 3 of the Swiss Franc directionless because the movements were not insignificant.

On the other hand. Chart 4 of Caterpillar in 1996 clearly shows a sideways directionless market, whose movements I would call insignificant, as the stock moved between 31 and 37 for most of the year. Markets chop around like this between trends. As you can see, I put the Stochastic Indicator on this chart. The Stochastic Indicator is commonly used as an overbought/oversold indicator. In directionless markets, you might attempt to buy CAT when the Stochastic is at or below 20 or 25 and sell when it is above 75 or 80. You could have made some money doing this with CAT in 1996.
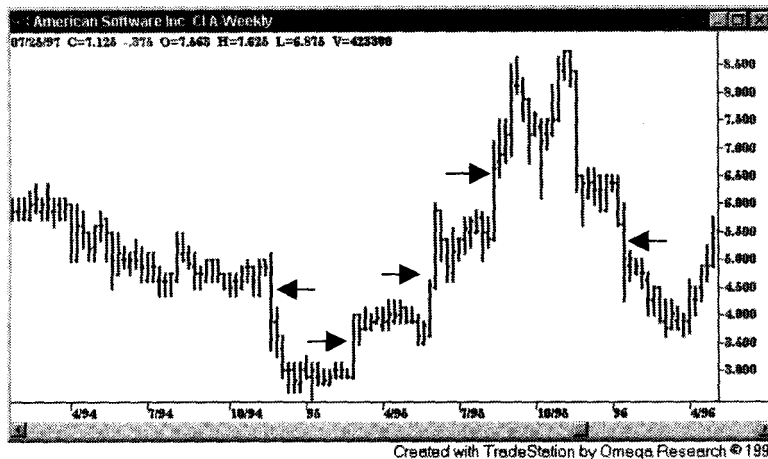
Chart 4

TradeStation EasyLanguage
Indicator: Stochastic Slow
Input: Length(14),BuyZone(20),SellZone(80);

Plot1(SlowK(Length),"SlowK");
Plot2(SlowD(Length),"SlowD");
Plot3(BuyZone,"BuyZone");
Plot4(SellZone,"SellZone");

VOLATILE MARKET

A volatile market is characterized by sharp jumps in price. Chart 5 is a weekly chart of American Software. You will notice that this type of market action involves a quick and unexpected change in volatility. At the marked points on this chart, AMSWA was quiet for the previous 7 to 15 weeks. Then the price leaped out of this low volatility trading range. This is what is commonly called a "volatility expansion."

Chart 5

Volatility Expansion Examples

Long ➡   Short ⬅

The volatility of the market increased substantially during the breakout week as it shot out of the previous range. Systems can be designed to take significant drawdown. Therefore, if your system misses a big move, you may not have enough capital to hold out through the drawdown for the next big move.

Another design priority should be to limit your losses during the market's sideways mode. Notice how I said limit losses not make profits. It is very important to recognize that no system will make money in every market condition. It is therefore very important to identify the market action in which the system will make money and the market action in which it will lose money. Once you have found the market action in which the system will lose money, it becomes a system design priority to minimize losses during that market action. If the system is designed to make money in a trending market, it will lose money in the choppy phase. Your priority should be to minimize the losses in the directionless market.

Many trend-following systems make their money in one or two trades of the year and break even or lose money for the rest. The most common indicator used for trend following is moving averages, most often two, a short moving average and a longer moving average. Chart 6 of Disney shows the 9- and 18-period moving averages with TradeStation arrows indicating where

a 9- and 18-period moving average crossover system would go long (up arrow) and short (down arrow).
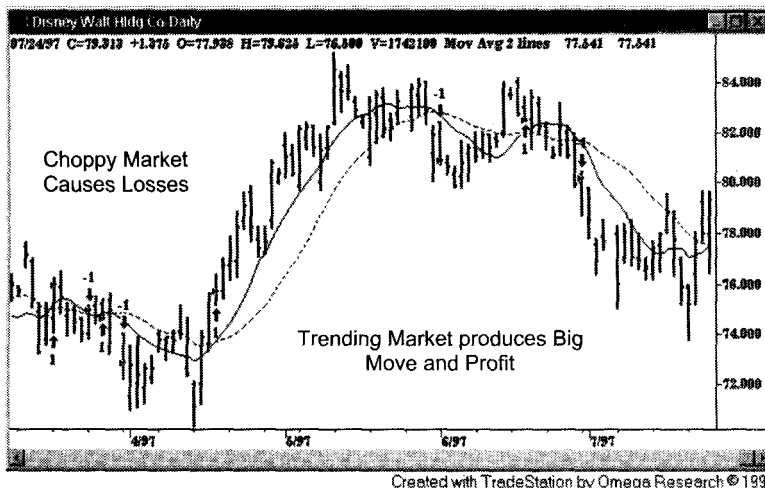
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As you can see, there were periods of trend where a significant amount of money was made as well as periods where the market was choppy and the system whipsawed back and forth with losses.

Let's analyze what we've just learned. Most trend traders will tell you that the 80/20 rule works for trend trading: they make 80% of their profits on 20% of their trades. Even though the moving average system on Disney (Chart 6) made money over time, it was profitable only 39% of the time. That means that the system lost money 61% of the time. This is the difficult part of trend trading—a low percentage of winning trades. You need a lot of positive self-esteem and a lot of confidence in your abilities to trade a system that loses money on 60 or 65% of its trades.

We will talk about this issue again later, but you should be thinking now about the design of the system you would be able to trade. If you want to be a typical trend trader, you should be prepared to lose money in a majority of trades. You should also be able to sit through significant drawdown as the market drifts through a directionless period.

The table below, SPF 1, is what I call a System Parameter File. It is a summary of all the relevant information that I use to create a system with TradeStation. Each time I test a system in this book, I will use this so that you can see a description of a system in summary form and you have all the information to reproduce the results if you so desire.

System Parameter File Moving Average Crossover			
Set-Up	9/18 Moving Average Crossover		
Entry	None (market order)		
Stops	None	Exits	None
MaxBarsBack	50	Slippage	0
Margin	None Used	Commission	0
Data Source	(DIS) - Disney Stock - Omega Research CD		
Data Duration	1/2/90 to 7/11/97		

SPF 1

Note that under "Entries" I have put none. I do not consider a market order technically an Entry.

This is discussed in the next chapter, under the title, The Magic of Set-Up and Entry.

Look at the Performance Summary labeled PS 1. As I just asked you, could you sit in front of your computer screen and place losing trade after losing trade, waiting for the big move to come? Could you sit through a string of 6 or 7 losses in a row before the next profitable trade? Could you lose $20 per share in a string of losses?

MovAvg Crossover Disney Walt Hldg Co-Daily 01/02/90 - 07/11/97

Performance Summary: All Trades

Total net profit	$ 18.66	Open position P/L	$ 3.56
Gross profit	$ 108.16	Gross loss	$ -89.50
Total # of trades	110	Percent profitable	39%
Number winning trades	43	Number losing trades	67
Largest winning trade	$ 10.00	Largest losing trade	$ -4.63
Average winning trade	$ 2.52	Average losing trade	$ -1.34
Ratio avg win/avg loss	1.88	Avg trade(win & loss)	$ 0.17
Max consec. winners	4	Max consec. losers	6
Avg # bars in winners	27	Avg # bars in losers	10
Max intraday drawdown	$ -20.13		
Profit factor	1.21	Max # contracts held	1
Account size required	$ 20.13	Return on account	93%

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PS 1

I do not include margin in my calculations as I personally look at return on Maximum Intra-day Drawdown or what I call ROMID. Margin can be placed in T-Bills to earn a risk free return. To add it to the account size thus becomes redundant.

Also, using different amount of margin needlessly complicates system performance comparison.

Note: If you are unfamiliar with Performance Summaries (System Report), please refer to Chapter 8, The Science of System Evaluation.

As you can see from PS 1, the maximum number of consecutive losers was 6 and the maximum infra-day drawdown (MAXID) was $20.13. That means that at least once, from 1990 to 1997, you would have placed six losing trades in a row and had a cumulative loss of over $20 per share. Could you realistically put up with this?

Another characteristic of a trend-following system is that it makes most of its profits in one or two big trades. Of the $18 profit in Disney, $10 came from one trade over the six years of data. This is not unusual for a trend-following system. I discuss how much profit you should permit to come from the largest profitable trade in Chapter 8, The Science of System Evaluation.

Many researchers have estimated that any market is in the trend mode 15% of the time and is directionless 85% of the time. A trend-following system then, by definition, has a low percentage of profitable trades. A trend-following system is psychologically difficult to trade, but if you think you can successfully trade without constant positive feedback, it can prove to be very profitable.

Trend-following systems are probably the most popular type of system. With a high percentage of losing trades, you might be wondering why is it so popular. Very simply, trend-following systems can be very profitable over time. Another reason is that people like to follow (and make money on) the big trends. It is human nature to want to cash in on the big moves in the market. It is innately satisfying to get in early on a trend and watch your profits soar.

SUPPORT & RESISTANCE SYSTEMS

The main focus of a Support and Resistance (S/R) system is to profit from the price swings that occur in directionless markets. The system attempts to capture price movement opposite to that captured by trend-following systems.

Support and resistance systems start with the premise that markets are directionless 85% of the time. The system attempts to take advantage of this price movement and catch the small swings that take place in sideways or choppy markets.

This type of system has a higher number of winning trades, with small profits on each trade. It misses the full trend because it exits early in the trend move as the market becomes quickly overbought or oversold.

An S/R system is built on the concept of buying low and selling high. As you are buying when prices are low and selling when prices go up, you are actually trading against the trend. Essentially, you are attempting to pick tops and bottoms. You buy low and sell high, but the market keeps going higher. You keep selling as the market goes higher, and keep taking small losses until the market finally turns down and gives you a profitable trade.

Although an S/R system is easier to trade emotionally, many traders don't trade this type of system because they miss the big move (by design). The most common indicator used with a support/resistance type of system is probably the Stochastic Oscillator.

You can see the Stochastic Indicator on Chart 7 of Caterpillar. I also applied the Stochastic Crossover system I created based on this indicator, highlighted in SPF 2.
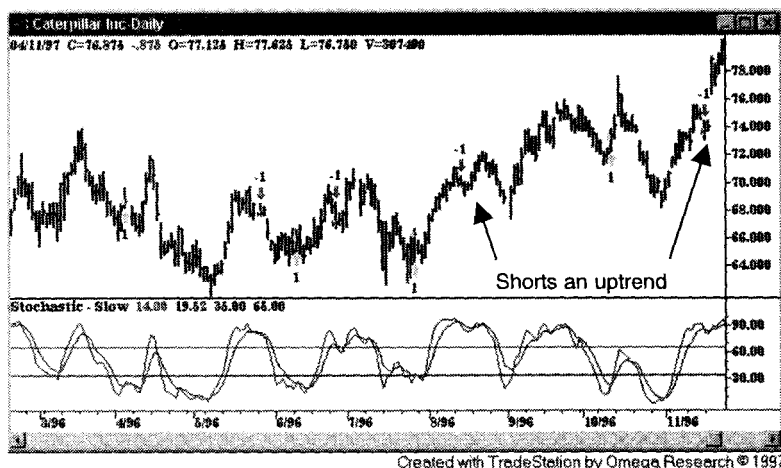
Chart 7

TradeStation EasyLanguage
System: Stochastic Cross
Input: Length(10);

IF CurrentBar > 1 and
SlowD(Length) < 35 and
SlowK(Length) crosses above
SlowD(Length) then Buy on Close;

IF CurrentBar > 1 and
Slowd(Length) > 65 and
SlowK(Length) crosses below
SlowD(Length) then Sell on Close;

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Notice how the indicator fluctuates between 0 and 100. In this case, I used the 65 line and the 35 line to represent overbought and oversold, respectively. The overbought level for the stochastic is generally between 65 and 90 and the oversold level is between 35 and 10. You can play around with these levels to find the ones that make the most sense for you.

I have designed an S/R system so that when the Stochastic (SlowD) is below 35 and the short average (SlowK.) moves above the long average (SlowD), the system produces a buy signal. The opposite would be true for a short signal, SlowD is above 65 and SlowK crosses below SlowD.

System Parameter File Stochastic Crossover			
Set-Up	SlowD < 35 or SlowD > 65		
Entry	SlowK crosses SlowD		
Stops	None	Exits	None
MaxBarsBack	50	Slippage	0
Margin	None Used	Commission	0
Data Source	(CAT)Caterpillar Stock - Omega Research CD		
Data Duration	1/2/91 to 4/11/97		

SPF 2

Note that in this test I have both a Set-Up and an Entry. Again, the magic of Set-Up and Entry is discussed in the next chapter.

The drawback of support and resistance systems is that they usually have small profits and larger strings of losses as they lose money when the market trends. By design, the system keeps shorting a market that is in an uptrend, or buying a market that is a downtrend.

You can see this happened twice in Chart 7 (previous page). Both times the market was in a sustained up-trend and when the Stochastic set-up reached overbought (above 65), the systems went short. The market then kept moving up, resulting in losing trades.

Stochastic Crossover Caterpillar Inc-Daily 01/02/91 - 04/11/97

Performance Summary: All Trades

Total net profit	$ 32.88	Open position P/L.	$ -1.88
Gross profit	$ 88.63	Gross loss	$ -55.75
Total # of trades	56	Percent profitable	68%
Number winning trades	38	Number losing trades	18
Largest winning trade	$ 15.50	Largest losing trade	$ -10.88
Average winning trade	$ 2.33	Average losing trade	$ -3.10
Ratio avg win/avg loss	0.75	Avg trade(win & loss)	$ 0.59
Max consec. winners	9	Max consec. losers	2
Avg # bars in winners	18	Avg # bars in losers	46
Max intraday drawdown	$ -24.81		
Profit factor	1.59	Max # contracts held	1
Account size required	$ 24.81	Return on account	133%

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PS 2

Note that the average losing trade is greater than the average winning trade. The system was ultimately profitable because of the high percentage winners.

As you can see from Performance Summary PS 2, this system has a high percentage of profitable trades (68%). This high percentage is needed to be profitable overall because the average losing trade was close to 1/3 larger than the average winning trade. Observe also that the system only had two consecutive losses in a row, which makes it much easier to trade from a self-esteem standpoint. The maximum intra-day drawdown (MAXID) was very large as a percentage of the net profit (76%). This would have to be fixed before this system would be ready to trade. I'll show you techniques for fixing problems like this in the following chapters.

Keep in mind that, while system development looks easy, it is not. CAT was in a choppy market during this time whereas the stock market was in a strong bull market. If you had traded our moving average crossover trend-following system on CAT during this time, you would have lost a significant amount of money thinking that CAT would trend with the overall market.

An S/R system is designed to buy low and sell high, which is an easy method psychologically to trade because it makes logical sense. However, these systems can lose money in the long run. Generally, most successful system traders don't trade this type of system. If S/R systems are used at all, it is to complement a group of systems that includes trending systems and perhaps a volatility system or two.

VOLATILITY EXPANSION SYSTEM

Volatility expansion systems are designed to do well in volatile markets. The trades generated by this type of system are usually short-term, and when trading this type of system, you will be out of the market a significant amount of time. Volatility expansion systems generate a high percentage of winning trades, although these trades usually generate small profits per trade. The S&P futures is a market that I would characterize as "volatile." Neither trend-following systems nor S/R systems work particularly well on the S&P.
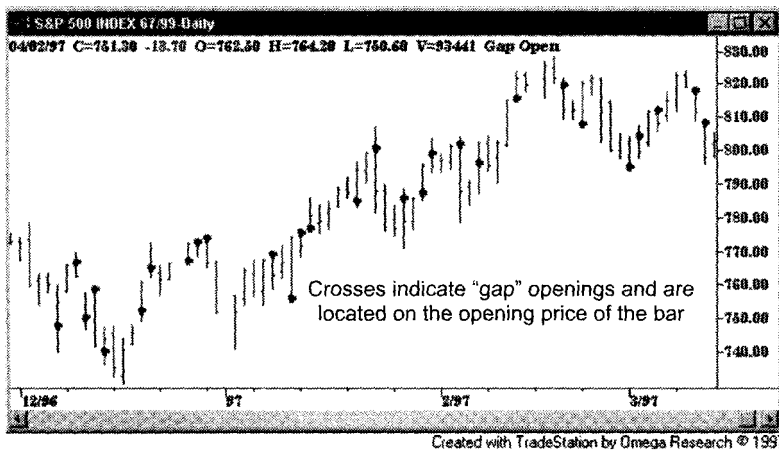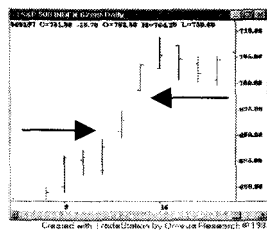
Chart 8

**TradeStation
EasyLanguage
Show Me: Gap Open**

If Open of this bar > High[1]
then Plot1(Open of this
bar,"Gap Up");

If Open of this bar < Low[1]
then Plot2(Open of this
bar,"Gap Down");

Chart 8 is a daily S&P futures chart from December of 1996 through March of 1997. Using a ShowMe Study, I had TradeStation highlight the gaps by placing large crosses on the opening price on the day on which the gap occurred.

One characteristic of a volatile market is gaps. Gaps refer to places in a bar chart where there is no continuity or overlapping of price. In this case, I have defined a gap as existing when today's open is either above the high of yesterday or below yesterday's low. Chart 8A is a small chart with two examples of up gaps.

Chart 8A   In both cases, the open gapped up over the high of the previous day, and was unable to fill the gap created between the opening price and the previous day's high. In most cases, as you can see on Chart 8, the prices fill the gap created on (he open. In either case (whether the gap is filled or nor) this type of chart action usually indicates an increase in volatility or volatility expansion. A volatility expansion system could be designed to take advantage of market movement such as this.

As you can see from the marks on the S&P in dart 8 (previous page), gaps appear to indicate that the market makes substantial daily moves following an opening gap. Let's try to capture this movement with a system that is designed to profit from opening gaps and subsequent movement.

Let's assume that if the market gaps up it is going to continue to go up, and it 11 gaps down it is going to continue to go down. The up or down gap sets up the trade. We then need to figure out how we are going to enter the market once the set-up occurs. I think we should require that the market move a significant amount away from the opening price before we enter the market.

System Parameter File Gap Up/Down Volatility Increases			
Set-Up	Gap Opening		
Entry	Moves away from yesterday's close an amount equal to yesterday's range		
Stops	None	Exits	Next Day's Open
MaxBarsBack	50	Slippage	None
Margin	None Used	Commission	None
Data Source	S&P Futures - Omega Research CD		
Data Duration	1/1/90 to 4/2/97		

This system enters when the price action moves up or down an amount equal to yesterday's close plus or minus yesterday's range. The idea is that in addition to the price gap on the opening, we will require the price to move a distance at least equal to the previous day's range away from the previous day's close. This adds a second condition, assuring that volatility actually does expand. The system is applied to a daily S&P futures chart in Chart 9.

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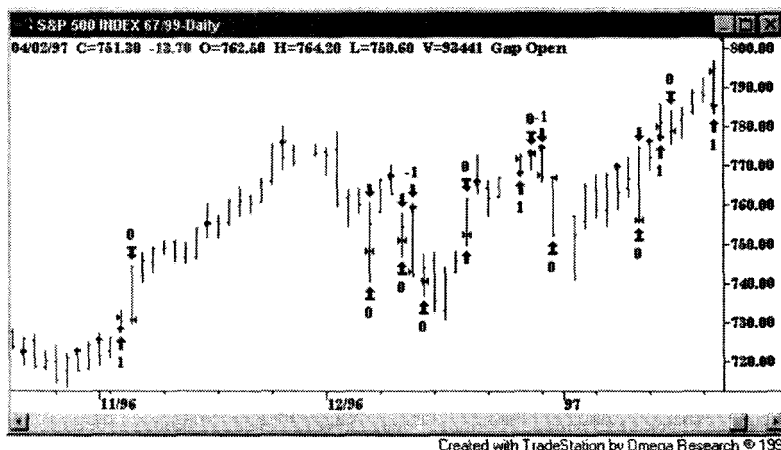
Chart 9

TradeStation EasyLanguage System: Gap Open

IF Open of next bar > High of this bar or Open of next bar < Low of this bar then Buy next bar at Close of this bar + Range of this bar Stop;

IF Open of next bar < Low of this bar or Open of next bar > High of this bar then Sell next bar at Close of this bar - Range of this bar Stop;

Exitlong next bar at market;
Exitshort next bar at market;

The results of this system are pretty good for the first try. This is definitely something that we can work with. There are many additions and variations that could improve the system. We might work on different exits, money management stops, and profit targets. We might also work on different ways of entering the market after a gap occurs. The results in PS 3 indicate that this price movement has real potential for creating a viable system.

As you can see in PS 3, the profits from a volatility expansion system come from a high percentage of profitable trades. Even though the average winning trade was less than the average losing trade, we still had the makings of a profitable system.

I hope you also noticed that in this test, as in all the previous tests in this chapter, I did not include any costs for slippage and commission. If, for instance, we included $25 for commission and $75 for slippage, the average trade profit would be $91.13 instead of $191.13. In systems that have a lot of trades, these costs can make the difference between a system you would trade and one you would not.

Performance Summary: All Trades

Total net profit	$ 44150.00	Open position P/L	$ 0.00
Gross profit	$ 133700.00	Gross loss	$ -89550.00
Total # of trades	231	Percent profitable	65%
Number winning trades	151	Number losing trades	80
Largest winning trade	$ 6775.00	Largest losing trade	$ -5250.00
Average winning trade	$ 885.43	Average losing trade	$ -1119.38
Ratio avg win/avg loss	0.79	Avg trade(win & loss)	$ 191.13
Max consec. winners	14	Max consec. losers	4
Avg # bars in winners	1	Avg # bars in losers	1
Max intraday drawdown	$ -12550.00		
Profit factor	1.49	Max # contracts held	1
Account size required	$ 12550.00	Return on account	352%

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PS 3

Note that the high percentage of profitable trades compensates for the higher average losing trade. The largest winning trade is a small percentage of the total profits.

Price explosions of one form or another characterize a volatile market. One way of defining a price explosion would be a "gap" opening, another would be an increase of "range" (high-low). Some indicators have been developed to try to indicate a change in volatility. One of these is actually called "volatility" and is included as a study in TradeStation.

Typical volatility expansion systems measure current volatility and enter the market when there is an abrupt increase in volatility. This type of system makes a quick exit, usually after only a few bars.

Selecting a Market and System Type

You should now have an idea as to the different types of market action and the system characteristics that attempt to take advantage of the action and profit from it. Each type of market has unique characteristics and takes a different thought process for system design.

In your own thoughts, you should begin to think about what type of market you are most comfortable with and would like to trade. Another consideration is the financial and statistical characteristics of the systems, with specific regard as to whether you could actually trade the system. It is not wise to create a great system that would be psychologically impossible for you to trade.

The first step in system design is to think about the characteristics of the three market types and the systems that are effective for each. Then decide what type of trader you are, or want to be: a trend trader, who buys low and sells high, or a volatility trader, who takes selective but high percentage trades.

I don't want to tell you what kind of system you should use. Everyone has to decide for him or herself, based on their personality and trading preferences. I think the best way to choose a system is to take a look at Table 1.

You should determine what type of system is best for your temperament. There are successful system traders using each type of system, but based on my experience, a higher number of traders use trend-following and volatility expansion systems than support and resistance systems.

Table 1	Trend	S /R	Volatility
Time in the market	Always in the market	Not always in the market	A substantial amount of time out of the market
Winning trades	Small percentage of winning trades	Higher percentage of winning trades	High percentage of winning trades
Where is money made	Money is made on big moves	Money is made in sideways markets	Money is made in market explosions
Where is money not made	Money is lost in choppy periods	Money lost in trending periods	Money is not made in quiet markets
Biggest con	Many false signals, long drawdown periods	Difficult to sustain profit over the long term	Never get the big move
Biggest pro	Possibility of high profits	Higher percentage of profitable trades	High percentage of profitable trades
Profit	Average profit per trade high over long term, unlimited	Limited average profit per trade	Small profit per trade, limited
Philosophy	Buy high and exit higher, sell low and exit lower	Buy low and sell high	Very quick and short term trades
Emotional	Long sustained drawdown periods can be difficult	Easier to trade because you are buying low and selling high	Exciting to trade - trades are short-term
Type of Indicators used	Moving Average, ADX, price bands and channels	RSI, %R, Stochastics, Support/Resistance lines	Purely based on price

Choosing a Time Frame

After you select the system type you want to use, you need to think about the rime frame in which you want to trade, and therefore the type of data you want to collect. There are three general types of data you can collect: intra-day, daily, or weekly. Choosing the time frame that is appropriate for you is almost as important as the type of market action and system you want to trade.

The most common chart used by traders is the daily chart, and this is why I use daily charts for most of the examples in this book. Daily charts are the most common for several reasons. Because most traders also have day jobs, they want to keep abreast of the market as much as possible without it intruding into their workday. The daily chart is perfect for this type of trader. You are able to review the markets each night and make your decisions for the next day.

WEEKLY VS. DAILY CHARTS

Weekly charts are much more difficult to trade because it takes more discipline. To trade weekly charts, you must make your decisions on the weekends and not make any changes until the next weekend. For most traders, this is very difficult to do. It is very easy to yield to temptation and move a stop loss or a money management stop, or want to keep your profits and exit the market early.

To discipline yourself not to look at the market during the week is a tough thing to do. Most people don't think of trading weekly charts. My experience is that there is a lot of money to be made trading weekly charts, simply because so few traders are able to do so. To make money in the markets, you have to tread where the average traders do not tread. Weekly charts are one of those places.

Chart 10 shows the weekly S&P futures in the upper box and the daily S&P in the lower.
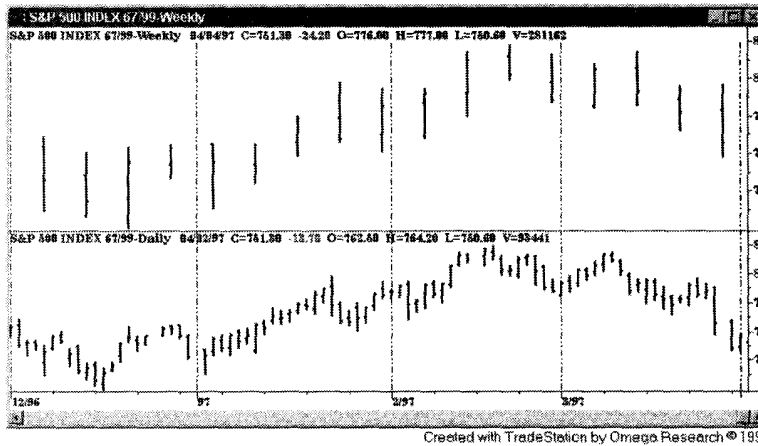
Chart 10

The top chart is a weekly chart and the bottom is a daily chart of the S&P futures.

There is more price detail in the daily chart, but also more price noise. Let's check out a simple system on both the daily and weekly charts.

Chart 11 is a daily IBM with a 50-period channel. The 50-period channel marks the highest high of the last 50 bars and the lowest low of the last 50 bars. The system would go long if the close of the bar closed above the channel and sell short if the price closed below the lowest low of the last 50 bars.
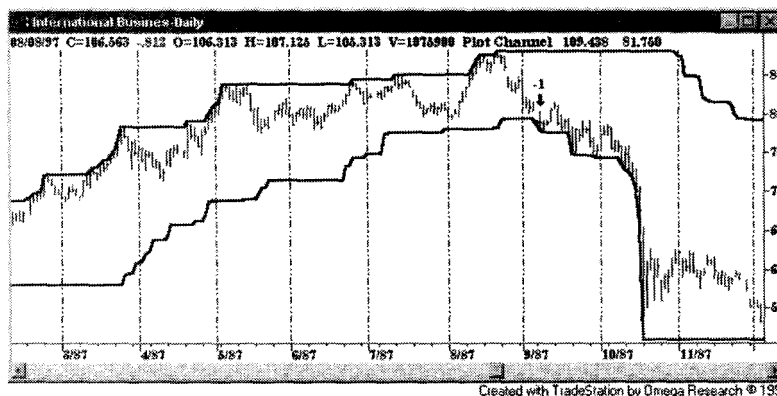
Chart 11

TradeStation EasyLanguage Indicator: Plot Channel

Input: Length(50);

Plot1(Highest(High,Length),"Channel");
Plot2(Lowest(Low,Length),"Channel");

Chart 11 shows IBM up to and including the crash of 1987. The first thing you should notice is that this system is always in the market, i.e., it is either long or short. I arbitrarily chose the 50-period channel for this test. I will then compare the results with the same length channel on a weekly chart.

In these tests, I will assume that 50 days is about equal to 10 weeks. So, to compare a daily system with a weekly system, we will use the same lengths in time although measuring the length on daily charts in days (50) and on weekly charts in weeks (10).

Let's take a look at how a simple channel breakout system works, first on a daily chart, then on a weekly. Our working premise is that the system will be more profitable on weekly charts than on daily.

Ask yourself why should a system, basically the same system, work better on a weekly chart than on a daily. I can come up with several reasons. First, very few people have the patience and the discipline to trade weekly charts. Second, by their very nature weekly charts smooth the price fluctuations of the daily chart. If there is a long trending market, we should be in the trend longer. We might get in the trend a little later than on the daily chart, and out later, but we will probably not get whipsawed as much in the directionless markets.

I chose IBM again arbitrarily because it went through some frustrating choppy periods and some very fine trending periods in its action packed history since 1970. The System Parameter File SPF 4 shows how we would design a system to test this theory.

System Parameter File Channel Breakout on Close			
Set-Up	50-Day Highest High and Lowest Low Channel		
Entry	Close above or below channel		
Stops	None	Exits	Reversal
MaxBarsBack	50	Slippage	35 cents/share
Margin	None Used	Commission	15 cents/share
Data Source	IBM Stock Daily – Dial Data		
Data Duration	1/5/70 to 7/24/97		

SPF 4

Note that in this test we have for the first time used a cost for slippage and commission. I assumed you would pay about $0.15 per share in commissions and we would have slippage of $.35 per share.

Slippage is the difference between the price of the order and the actual price at which you get filled.

Let's look at the results for the daily chart, shown in PS 4.

Channel Brk on Close International Busines-Daily 01/05/70 - 07/24/97

Performance Summary: All Trades

Total net profit	$ 29.02	Open position P/L.	$ 31.00
Gross profit	$ 177.77	Gross loss	$ -148.75
Total # of trades	73	Percent profitable	44%
Number winning trades	32	Number losing trades	41
Largest winning trade	$ 24.31	Largest losing trade	$ -6.63
Average winning trade	$ 5.56	Average losing trade	$ -3.63
Ratio avg win/avg loss	1.53	Avg trade(win & loss)	$ 0.40
Max consec. winners	4	Max consec. losers	9
Avg # bars in winners	144	Avg # bars in losers	54
Max intraday drawdown	$ -49.12		
Profit factor	1.20	Max # contracts held	1
Account size required	$ 49.12	Return on account	59%

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PS 4

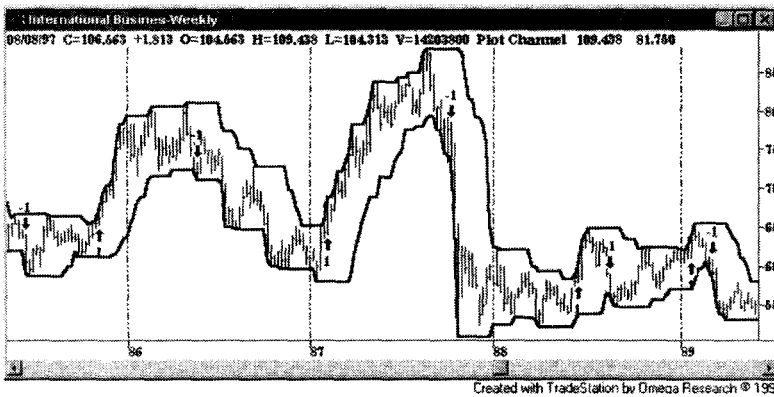**TradeStation EasyLanguage System: Channel Breakouts**

Input: Length(10);

IF CurrentBar > 1 and Close > Highest(High,Length)[1] Then Buy on Close;

IF CurrentBar > 1 and Close < Lowest(Low,Length)[1] Then Sell on Close;

This system was profitable over the 27 years. IBM moved from a low of 24 to a high of approximately 110, an 86 point rise. The system made $29 per share from 1970 to 1997.

Now let's look at the same indicator and system on an IBM weekly chart, Chart 12.

Chart 12

<u>TradeStation EasyLanguage</u>
<u>Indicator: Plot Channel</u>

Input: Length(10);

Plot1(Highest(High,Length),"Channel");
Plot2(Lowest(Low,Length),"Channel");

Keep in mind that this is essentially the same indicator and system as the daily chart. The System Parameter File is shown in SPF 5. Notice that the only difference is that it is a 10-period channel on a weekly chart instead of a 50-period channel on a daily chart.

System Parameter File Weekly Channel Breakout on Close			
Set-Up	10-Wk Highest High and Lowest Low Channel		
Entry	Close above or below channel		
Stops	None	Exits	Reversal
MaxBarsBack	10	Slippage	35 cents/share
Margin	None Used	Commission	15 cents/share
Data Source	IBM Stock Weekly – Dial Data		
Data Duration	1/5/70 to 7/24/97		

SPF 5

Note that in this test we have also used a cost for slippage and commission. I assumed you would pay about $0.15 per share in commissions and we would have slippage of $.35 per share.

Slippage is the difference between the price of the order and the actual price at which it is filled.

All else being equal, the systems should perform about the same. However, as you can see in PS 5, in almost every category the weekly system outperformed the daily system.

Channel Brk on Close International Busines-Weekly 01/09/70 - 07/25/97

Performance Summary: All Trades

Total net profit	$ 46.91	Open position P.L	$ 32.44
Gross profit	$ 160.86	Gross loss	$ -113.95
Total # of trades	57	Percent profitable	42%
Number winning trades	24	Number losing trades	33
Largest winning trade	$ 30.06	Largest losing trade	$ -8.56
Average winning trade	$ 6.70	Average losing trade	$ -3.45
Ratio avg win/avg loss	1.94	Avg trade(win & loss)	$ 0.82
Max consec. winners	4	Max consec. losers	9
Avg # bars in winners	39	Avg # bars in losers	14
Max intraday drawdown	$ -28.60		
Profit factor	1.41	Max # contracts held	1
Account size required	$ 28.60	Return on account	164%

PS 5

Note that there is a large open position profit of $32.44. This is the profit on the current trade and should be considered when comparing the two systems.

Both systems took their first trade within two days of April 22, 1970. From that point on, the weekly chart had a greater profit on fewer trades and less drawdown than the daily chart. The rest of the data is about the same. Clearly this data comes down on the side of the weekly chart rather than the daily.

This is just one very simple example of why you should consider weekly charts and not just assume that daily charts are your only option for trading.

INTRA-DAY VS. DAILY CHARTS

Intra-day charts are the 5-, 10-, 30-, and 60-minute charts that are compiled from intra-day tick data. To trade intra-day charts, you must give almost your full attention to the markets during the day.

It is virtually impossible to have a full-time job and trade intra-day charts well. As a percentage of traders, relatively few traders are able to trade during the day. I think it is for this reason that there is significant money to be made trading intra-day. The relative lack of competition has to be in your favor trading intra-day. Chart 13 is an example of a 30-minute S&P futures chart placed on top of a daily chart.
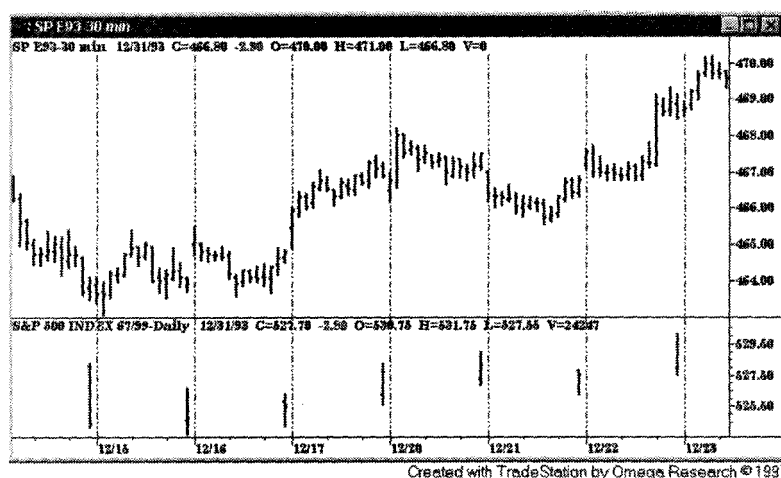
Chart 13

There are 14 intra-day bars in a 30-minute chart. However the last bar is only 15 minutes because it covers the time from 4:00 to 4:15pm (EST).

The top chart is a 30-minute chart and the bottom is a daily chart.

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Trading intra-day data permits you to put a microscope on daily activity and filter trades so that you can take advantage of the intra-day timing. I want to show you the benefits of looking at a technique and system through the intra-day microscope.

To do so, let's analyze a technique that I taught in my seminars many years ago. 1 called it a RangeLeader Breakout. A range leader is a special type of bar that has two attributes. The first is that the range of the bar must be greater than the range of the previous bar. Range is defined as the bar's high minus the bar's low.

The second characteristic of a range leader is that the midpoint of the bar must be above the previous bar's high or below the previous bar's low.

Mid Point: greater than previous high

Range: greater than previous bar's range
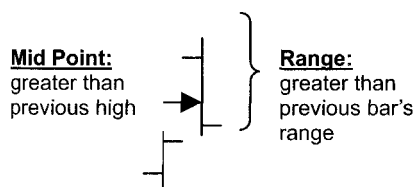
Range Leader Bar

The mid-point is greater than the high of the previous bar

Or

The mid-point is less than the low of the previous bar

And

The range (high - low) is greater than the range of the previous bar

So let's create a system using the range leader. And make it simple. If a range leader occurs today, on the current bar, we will buy tomorrow one tick over the high of the range leader, or we will sell one tick below the low of the range leader. That's about as simple as I can conceive it.

The daily chart of the S&P with both the ShowMe Study and the RangeLeader Breakout system on TradeStation is shown in Chart 14.
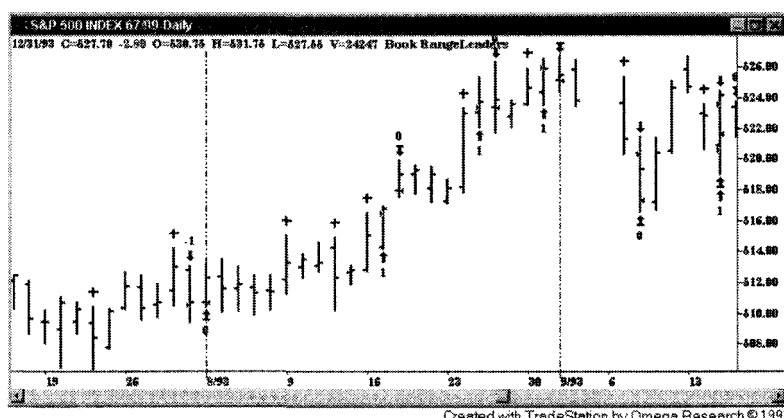
What type of a system is this? Trend-following, support and resistance, or volatility expansion? This the first question you should ask yourself as you look at this or any other system. In this case, since we're looking at a breakout based on the previous bar's range, it is a volatility expansion system.

The System Parameter File is shown in SPF 6.

System Parameter File RangeLeader Breakout			
Set-Up	RangeLeader		
Entry	Breakout Next Bar		
Stops	$500 MMS	Exits	Next day on open, $1,500 PT
MaxBarsBack	2	Slippage	$35
Margin	None Used	Commission	$25
Data Source	S&P Futures Daily – Omega CD		
Data Duration	1/1/93 to 12/31/93		

SPF 6

**TradeStation EasyLanguage
System: Daily RL Breakouts**
If RangeLeader = 1 then
begin
  Buy at High + 1 point stop;
  Sell at Low - 1 point stop;
end;

Exitlong next bar on Open;
Exitshort next bar on Open;

Note that this system introduces the concept of Money Management Stops ("MMS") and Price Targets ("PT"). An MMS is an order you place in the market to conserve your capital. In this case I decided I did not want to risk more than $500 per trade. The system design therefore includes a provision that when it gets filled, it immediately puts a stop loss $500 away from the entry price.

Price targets are placed if you want to exit the market at a particular profit level. This, of course, limits your profit per trade. In this case, I decided that if the price moved $1, 500 in my favor, I would take the profit. For this system, I arbitrarily decided on the $500 MMS and $1, 500 PT amount, but if we want to we can use TradeStation to test for the optimum amount for both of these.

For the exit, if my price target was not hit, that is, I did not make the $1, 500, 1 decided that I would want to get out a soon as possible. I had two choices as to how to exit: on the close of the entry bar or the next day on the open. I chose the next day on the open as I wanted to take advantage of possible gap opens. I could also test other options for exiting the market. So, if I

did not make $1, 500 on the day the system entered the market, I would exit the following day on the open. This system was not too bad right out of the box.

The Performance Summary for this system is shown in PS 6.

PS 6

Note that our largest winning and losing trades were greater than our money management stop and profit target.

This happened because our stop and target were not always hit. The next day the price gapped and we exited on the open. The gap was beyond either our stop loss or our price target.

We made 125% return on our drawdown in one year. All in all, not a bad first try.

Are we able to improve on this basic system by using the microscope of infra-day charts? Let's try using a 30-minute chart and see what we find. The Performance Summary results are shown in PS 7.

PS 7

__TradeStation EasyLanguage__
__System: ID RL Breakouts__
Condition1 = Time <> Sess1StartTime;
Condition2 = Time <> Sess1EndTime;
If Condition1 and Condition2 and
RangeLeader = 1 then begin
    Buy at High + 1 point stop;
    Sell at Low - 1 point stop;
end;
If Time = 1615 then begin
    Exitlong next bar on Open;
    Exitshort next bar on Open;
end;

This obviously didn't work. We simply put the same system for the daily chart on the 30-minute chart (with one small change). The System Parameter File is shown in SPF 7.

System Parameter File RangeLeader Intra-Day Breakouts			
Set-Up	RangeLeader 30-Minute Breakouts		
Entry	Breakout Next Bar		
Stops	$500 MMS	Exits	Next day on open, $1500 PT
MaxBarsBack	2	Slippage	$35
Margin	None Used	Commission	$25
Data Source	S&P Futures 30-Minute charts – Tick Data		
Data Duration	1/1/93 to 12/31/93		

Again, the system entered on RangeLeader Breakouts with a $1, 500 PT and a $500 MMS. This time it lost some money. Let's look at the minor change I made to it and then think for a moment about what went wrong.

An important consideration for this system, as with any intra-day system, is the first and last bar of the day. If the first bar of the day is a range leader, this means that the range of this bar is greater than the range of yesterday's last 30-minute bar, and that the mid-point of this bar is either greater than the high or less than the low of the last bar yesterday. I have always thought that with the intervening time, this information was meaningless and shouldn't be used to trade. Therefore, I added a Condition 1, which eliminates the first bar from use (SesslStartTime). Notice that I have also eliminated the last bar of the day (SesslEndTime). If the last bar of the day is a range leader, the breakout will occur tomorrow during the opening bar. The fact that the last bar of the day is a range leader is irrelevant to tomorrow's first bar, and the breakout is meaningless. Condition 1 and Condition2 in the TradeStation EasyLanguage for this system deal with these issues.

Now, let's look now at what went wrong. I believe the reason that the system lost money on the intra-day chart is because we didn't take advantage of the strengths of using intra-day charts. It stands to reason that there must be certain times of the day when the market moves and other times when it rests. We simply used each 30-minute bar as if it was no different than any other bar. I have always thought that there were different times of the day that are more important.

Perhaps we should test each individual bar for a RangeLeader Breakout and then put in our MMS and PT and exit on tomorrow's opening price if we don't reach our target or get stopped out.

There are 13 30-minute bars during the day, and a 14th bar which is the last 15 minutes between 4: 00 and 4: 15pm (EST). I changed the system to test each bar, designated by its ending time, for a RangeLeader Breakout, using a $1, 500 PT and a $500 MMS. If neither the MMS nor the PT is hit, we then exit the next day on the open. A summary of the results for each 30-minute intra-day bar is shown in PS 8.

Time	Profit	Long	Short	Ave Trade
10:00	-1400.00	1205.00	-2605.00	-11.67
10:30	-2625.00	-2160.00	-465.00	-105.00
11:00	4080.00	-1525.00	5605.00	151.11
11:30	-4700.00	-400.00	-4300.00	-156.67
12:00	-2800.00	3750.00	-6550.00	-112.00
12:30	1990.00	-430.00	2420.00	43.26
13:00	-5005.00	-3020.00	-1985.00	-116.40
13:30	-4230.00	-1410.00	-2820.00	-111.32
14:00	-10835.00	-4030.00	-6805.00	-235.54
14:30	-5395.00	-1130.00	-4265.00	-94.65
15:00	**12225.00**	**5070.00**	**7155.00**	**188.08**
15:30	-1910.00	2545.00	-4455.00	-34.11
16:00	-2975.00	-860.00	-2115.00	-74.38

PS 8

<u>TradeStation EasyLanguage</u>
<u>System: ID RL Time B/O</u>
Input:Bartime(1500);

Condition1 = Time <> Sess1StartTime;
Condition2 = Time <> Sess1EndTime;

If Condition1 and Condition2
and Time = Bartime
and RangeLeader = 1 then begin
  Buy at High + 1 point stop;
  Sell at Low - 1 point stop;
end;

If Time = 1615 then begin
  Exitlong next bar on Open;
  Exitshort next bar on Open;
end;

PS 8 shows that there were only three time periods that produced profitable trades, 11: 00, 12: 30 and 15: 00 (3: 00pm). Clearly the 15: 00 bar was the most profitable. It looks like we can conclude that most of the action in the S&P takes place after 3: 00 in the afternoon.

System Parameter File RangeLeader Intra-Day Breakouts			
Set-Up	RangeLeader at 15:00 bar		
Entry	Breakout Next Bar		
Stops	$500 MMS	Exits	Next day on open, $1,500 PT
MaxBarsBack	2	Slippage	$35
Margin	None Used	Commission	$25
Data Source	S&P Futures 30 Minute charts – Tick Data		
Data Duration	1/1/93 to 12/31/93		

SPF 8

<u>TradeStation EasyLanguage</u>
<u>System: ID RL Breakouts</u>
Input:Bartime(1500);

If Time = Bartime and
RangeLeader = 1 then begin
  Buy at High + 1 point stop;
  Sell at Low - 1 point stop;
end;

If Time = 1615 then begin
  Exitlong next bar on Open;
  Exitshort next bar on Open;
end;

SPF 8 shows a summary of the final design of the 3: 00 intra-day RangeLeader Breakout. Key elements of this system are the time of day, the $1, 500 profit target, the $500 money management stop, and the exit on the open of the following day if neither of the stops are hit. PS 8A shows the whole Performance Summary using only the 15: 00 bar as the RangeLeader Breakout.

Book I Rangeleaders SP E93-30 min 01/04/93 - 12/31/93

Performance Summary: All Trades

Total net profit	$ 12225.00	Open position P/L	$ 0.00
Gross profit	$ 24405.00	Gross loss	$ -12180.00
Total # of trades	65	Percent profitable	57%
Number winning trades	37	Number losing trades	28
Largest winning trade	$ 1715.00	Largest losing trade	$ -810.00
Average winning trade	$ 659.59	Average losing trade	$ -435.00
Ratio avg win/avg loss	1.52	Avg trade(win & loss)	$ 188.08
Max consec. winners	10	Max consec. losers	3
Avg # bars in winners	3	Avg # bars in losers	1
Max intraday drawdown	$ -1855.00		
Profit factor	2.00	Max # contracts held	1
Account size required	$ 1855.00	Return on account	659%

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PS 8A

This system is a 3:00 RangeLeader breakout on 30-minute charts with a $500 money management stop and a $1500 profit target.

As you can see in PS 8A, the results of using 30-minute bars and only using the 15:00 bar the RangeLeader Breakout system were very good. In 1993, it produced a return on maximum intra-day drawdown (MAXID) of 659% with 57% profitable trades. In every category, this system outperformed the daily chart.

Keep in mind that this is only for 1993. Before I would get overly excited about this system, I would test this in other years as well.

So, after all of this information, what's the point? The point is that intra-day data, if used correctly, can give you a distinct advantage over daily charts. If you have the time and energy, you can take advantage of the microscopic look at the markets using intra-day charts, and you may be able to improve your return.

Summary

Let's recap what we have covered in this chapter. First, we took a look at the three types of markets: trending, directionless and volatile. We noted their individual characteristics and how to recognize each of them.

Next we studied systems that take advantage of the three different types of market action. First, we looked at trending markets and the trend-following systems that attempt to profit from this type of market. We saw that this type of system tries to catch the big move, and usually loses money while it waits for the trend. Trend-following systems take trades with a low probability of profit, with the eventual profitable trade usually being a big winner, covering all of the losses and more.

We then looked at both support and resistance systems and volatility expansion systems and noted their characteristics. Generally, these systems are designed to intentionally miss the big trend. They attempt to make money by entering trades that have a high probability of success, but have limited profits. S/R systems buy low and sell high. Volatility expansion systems capture an increase in volatility and profit from this short-term explosion in price.

We then looked at the different time frames available for the system trader. I noted that most people instinctively trade daily charts. However, the successful system trader looks at the time frames that will maximize profits, not necessarily those that are most convenient. We compared the same system on the same data on both a daily chart and a weekly chart, and found that in this case the weekly results were much better than the daily. While this won't be the case for every

system in every market, it makes the point that using weekly charts is something you should at least consider.

We then turned to intra-day charts. I hoped to show you that the same issue exists for intra-day charts. Are there markets and systems that would be improved by using intra-day charts rather than daily? We found at least one instance where this was true, using my concept of range leaders for an S&P

system.

Our first step was to test an indicator, the RangeLeader, and use it to develop a reasonable system on a daily chart. We then modified the daily system for intra-day data, eliminating the first and last intra-day bar. This didn't work. Undaunted, for the next step we decided to use the 30-minute intra-day data as a microscope to find the periods that did work with intra-day, 30-minute range leaders. For that reason, the last step was to test each of the individual bars to see which bars (if any) produced a viable system. We found the 1, 500 bar to be very profitable and modified our system accordingly.

In this chapter, I hoped to show you that it is not necessary to be locked into trading daily charts. Although daily charts are the most common, and for most people the easiest to use, a case can be made that this is precisely the reason that you should consider trading other time frames. The decision rests on three factors: individual preference, personal discipline, and time.

The move to consider weekly charts involves some self-evaluation. Do you have the discipline to only look at the markets once a week? Can you effectively ignore market action during the week? In many markets, trading weekly charts can be a big advantage; weekly charts tend to smooth out the price action, reducing many of the daily whipsaws into small insignificant corrections. This can be a distinct advantage for trend traders. I showed you one instance where using a weekly chart for a trend system was an advantage.

The intra-day time frame has its own advantages and disadvantages. First, you must have the time to watch the markets during the day. Second, you will probably be entering many more trades, and the cost of commissions becomes a larger factor. And third, the software and data costs are greater.

These are the first issues that you must consider as you begin to develop a system and trade it: the type of market, the system type and the time frame. Let's now move on to the major elements of creating the system itself.

Chapter 4: Profile of a Winning System

At this point in the development of your system, you have a clearly defined direction in which you are heading. You've decided on the system type and market type you are going to trade, and you have a feel for the types of patterns on which you want to capitalize. Now is the time for a brainstorming session in which you should sit down in front of your computer with TradeStation.

This is the point at which you start to develop the set of rules that actually make up your trading system.

Many traders at one time or another have become frustrated with system development. Not because they don't like it, but because they run out of new ideas to test, or haven't found anything that works for them.

For example, most traders have tested the Dual Moving Average Crossover System sometime in their trading career. The average trader will look at this system and believe that the only thing to test is the length of the two averages. New traders will experiment with many different lengths for the averages. When they don't find any that work to their satisfaction, they discard the dual moving average system concept entirely, and move on to something else. They keep looking for that Holy Grail indicator that they can instantly make into a system. We have all been there, and have all discarded many great ideas.

The discarding of an idea, more often than not, is a mistake. I believe that for the most part, any indicator can be made into a profitable system. Yes, I said any indicator. When we discard the moving averages, it is usually a mistake because the moving averages by themselves only represent one half of the system development puzzle. I refer to this half as the "Set-Up" of a system.

The second half of a system, the half that most traders ignore completely, is what I call the "Entry." In this chapter, I will talk about exactly what these two terms mean, and more important, how using them together can turn something as mundane as a moving average crossover into a promising new trading technique.

The Magic of Set-Up and Entry

My experience is that the secret to successful system development is to look at a method, or indicator, in an unconventional manner. The trick is to use it in a different and unique way.

With Set-Up and Entry, you will look at system development in a completely different way. As you'll soon see, it can provide you with a whole new world of exciting possibilities and ideas to test. It will lift you out of the rut of simply optimizing standard indicators and give you a method of organizing your creativity.

THE SET-UP

The Set-Up is the condition or set of conditions that are necessary prior to considering taking a position in the market. It is the indicator or group of indicators that tell you *to get ready* to buy or sell. Set-ups don't get you in the market, they simply make you aware that a trade is in the making.

Examples of set-ups for a trend-following system:

> • A fast moving average crossing a slow moving average
>
> • The ADX indicator in an up-trend
> • Prices moving outside of a price channel Examples of set-ups for a support

and resistance system:

> • The RSI moving into oversold territory (below 20) or into overbought territory (above

80)

• SlowD crossing SlowK when using the Stochastic Indicator

• Prices reaching the upper or lower line of a moving average envelope

Examples of set-ups for a volatility expansion system:

• An opening price gap over the high of the previous bar

• The current bar's range is greater than the average range of the last three bars

• The difference between two moving averages on the current bar is greater than the average difference of the last 10 bars

There are countless other indicators and conditions that could be used as set-ups. In the final analysis, you are limited only by your creativity. There is only one constraint that you should impose upon yourself. It is essential to recognize the type of system you are trying to develop and use the different indicators accordingly. You do not want to use a moving average crossover for a support and resistance system unless you are using it in a unique way. You would not choose to use the Stochastic Indicator for a trend-following system unless you had completely re-configured how it is used.

Most system traders do not recognize that these indicators only set up the trade. They are unaware that there are a multitude of ways to actually get in the market once the set-up has occurred. They are not aware that set-ups are only part of the equation and are not particularly profitable in and of themselves.

Beginning system developers get discouraged when they try to develop profitable systems from set-ups only. They quickly run out of ideas to test, because they use up all their ideas as set-ups without trying to combine them with various complementary entries.

By trading only set-ups, you lose the added precision, accuracy and increased profitability of a system that uses both set-up and entry. If trading set-ups by themselves worked, and was profitable, trading would be easy and all traders would be rich.

THE ENTRY

An entry is the signal by which the system purchases the contract in the market. It is the technique that I use to take a market position once the rules for the set-up have been met.

Entry selection is dependent on the type of set-up you've designed. You may choose to trade a trend-following system, an S/R system, or a volatility expansion system. The entries are designed differently depending on the type of system you choose to trade.

Many beginning traders devise systems that only trade entries. These are not as effective and are usually less profitable than systems that utilize both a set-up and an entry. Systems based only on entries tend to have too many trades and a low percentage of profitable trades. There are two rules to which all entries must adhere:

Entry Rules:

1. Prices should confirm the direction indicated by the Set-Up before a taking a position
2. The Entry should guarantee that a system will capture every price move for which it is designed

Entry Rule #1 requires prices to move in the expected direction before entering the market. If our set-up indicates a long position, we would require the price action to move up in some specified manner before we would be comfortable taking a position. We want the price action to confirm the set-up and force us into taking a position.

For instance, let's assume that on today's close our set-up has given us a long signal. We might require a breakout above the high of today's bar to confirm that the market is in bullish mode.

With this breakout as a condition of entry, we have now required specific market action in the direction of the set-up before we risk taking a market position.

Some examples of buy entries are:

- A buy stop on tick above the current bar's high

- A buy stop over the highest high of the last three bars

- Buy at market after several consecutive up closes

- Buy at market after a close over the previous bar's high

- Buy on a close that is greater than the open

- Buy on a stop, one tick above the last swing high

- Buy at the market on the close of a key reversal bar

Note: Key reversals are a common and intriguing pattern. In an up key reversal the low of the current bar is lower than the previous bar's low and the close of the current bar is greater than the previous bar's close. In a down key reversal is the opposite. The theory is that this bar indicates an attempt by prices to continue lower but instead they have reversed and closed higher, which denotes a change in trend.

When deciding on what type of signal to use as your entry, it is important to keep in mind the type of system you are trying to create. There are certain types of entries you don't want to use with set-ups because they have basic flaws that may allow the system to miss the big move.

Entry Rule #2 is to make sure that our entry guarantees that we will be in on every move that the system was designed to catch. The strength of this guarantee is the criteria by which I judge the viability of all entries. I consider an entry flawed if there is even a slight chance that there could be a big move that the entry would miss. This is a very important system development principle that you should think about.

For example, you do not want to use a key reversal signal as the only entry for a trend-following system. There is absolutely no assurance that once the trend setup has occurred that a key reversal will follow. It is possible that after the moving averages have crossed, giving us a buy set-up, the market may very well embark on a long up-trend without as much as once having a key reversal bar. Without the key reversal bar, we would not enter the market even though the trend set-up has given us a signal. Without the key reversal bar, we will miss the big move. And as you now know, missing the big move is the worst outcome for the trend trader.

Another example of a faulty entry is an entry that consists of three consecutive up or down closes. There is no guarantee that given a set-up, this pattern will occur. The market may embark on a long trend without having three consecutive up or down closes in a row. It is possible that a trend-following system with this entry could miss the big move, and this possibility is a flaw in the system design that should be avoided.

That is not to say however that key reversals or consecutive closes should not be used. You could compensate for their shortcomings as entries by including an additional entry or entries in the system that would serve as a backup. The entry or combination of entries must guarantee that the system will be in the market should any large trend develop.

TYPES OF ORDERS

The only limit to creating viable entries is your creativity. There are potentially many techniques that make interesting entries. However, entries are also dependent on the type of order used. There are four basic orders that are commonly used for entries: Market orders. Stop Close Only

orders. Stop orders, and Limit orders. Not all of these orders are available on every exchange. You should check the exchange you will be trading on for a list of the available order types.

Market Orders

A market order is used to enter the market without any restrictions on what the price should be. This order is commonly placed on the open of the day (market on open) or close of the day (market on close). However, market orders may also be placed anytime during the day by calling your broker and either buying or selling "at market." Although market orders fulfill the criteria for Entry Rule *#2,* they are deficient because they violate Entry Rule #1.

It is my view that market orders (market on close, market on open) are not entries at all. They are simply the obvious and easiest way to put on a trade.

Market orders may be turned into viable entries by adding another condition to them that will signal an implied direction. For example, an effective use of a market order would be to "buy tomorrow at market if the open tomorrow is greater than the high of today." This forces the market to indicate a direction, presumably in the direction of the set-up (in this case up) before we enter the market.

A market order may be used to enter the market, but should always be used with at least one more condition in order to fulfill Entry Rule #1.

Stop Close Only Orders

Stop Close Only (SCO) orders are market orders with an important twist. The twist is that to enter long, the market must close above a price that we have preselected. For a sell, the market must close below our pre-selected price.

An example is to buy a contract on the close at 856.30 SCO. This means that if the price closes at or above 856.30, the market will fill your order at the market. The idea is that with an SCO order, you have placed an important restriction on the market order, making it a viable entry. This forces the system developer to find a price that the market must close above (or below) before the system takes a position. By placing this restriction on a market order, we have turned it into a valid type of entry.

Stop Orders

The easiest way to create a valid entry is to use a stop order. By its nature, a stop requires the market to pass through a certain pre-selected price before a contract is bought or sold. Using a non-removable stop order is the best way to create innovative entries and confirm the entry rules. The reason stop orders are generally superior to SCO orders is that they guarantee that your system will enter the market regardless of when during the day the price is *hit.* You will not have to wait for the close and you may catch a big intra-day move that would be lost if you waited for an SCO.

An example of using a stop order as an entry is the bar breakout entry. If today our set-up turns bearish, we would place a sell order one tick below today's low. Unless prices move below this price, forcing a confirmation of the set-up, the system would not take a short position in the market. The same mechanics would hold true for a long signal.

Stop orders that are not removed are also the best guarantee that the system will be in for the big move. Placing a permanent sell stop (good until cancelled) below the current price provides the best assurance that you will be in on any move beyond that price. The floor brokers must fill your order as soon as they can once that price is hit. This guarantees you will be in on the move, although there is no guarantee as to the exact price *(this* difference between the stop and the fill price is slippage, which will be discussed in detail in a later chapter).

Limit Orders

Limit orders are the opposite of stop orders. By their nature, limit orders require prices to be traveling in a direction opposite the set-up.

The primary intent of the limit order is to place a resting buy order somewhere below the present market price. This is an attempt to pick off a lower and better price than where the market is currently. You may also place a resting sell order above the current price to sell at better than current prices. Limit orders are primarily used in support and resistance systems and are generally not effective.

Assume that the market is now trading at 258.00. The mechanics of a limit order are to place an order to buy a contract or share at 256.50 limit (or better) or sell at 258.50 or better (limit). This means that the floor brokers who are filling your order will only attempt to sell your contract at a price equal to or above 258.50. If the broker cannot sell the contract at or above the price, you will not be in the market. The same strategy is used with the limit buy order.

The limit order does not conform to Entry Rule *#1* because it does not force prices to move in the direction of the set-up before entry. There could be a case in which a lower limit price was not reached before the market took off in a big up move.

Even if the market by chance should hit this price, there still is no guarantee that the broker will be able to fill the price. Unlike a stop, which becomes a market order at the prescribed price, a limit order must be filled at or better than the prescribed price. The market may trade at that price for only one or two trades, and then move away quickly. If your broker is not the fastest broker, you may not get filled even though the market traded at your prescribed price.

Limit orders violate both Entry Rule #1 and Entry Rule *#2,* therefore, I do not recommend them for use as an entry.

Testing the Set-Up

Let's pick a set-up and test it, and then see if we can't improve on it by adding an entry. The simplest set-up I can think of is a simple one-line moving average. Let's make it very simple and buy when the moving average turns up and sell when the moving average turns down.

In TradeStation terms, a moving average has turned up if today's moving average is greater than yesterday's moving average, and the average is giving a sell signal if the current bar's moving average is less than the previous bar's moving average.

Take a look at Chart 1. It is a weekly chart of Coca-Cola (KO) from 1992 to 1996. I've included the 30-period moving average on the chart.
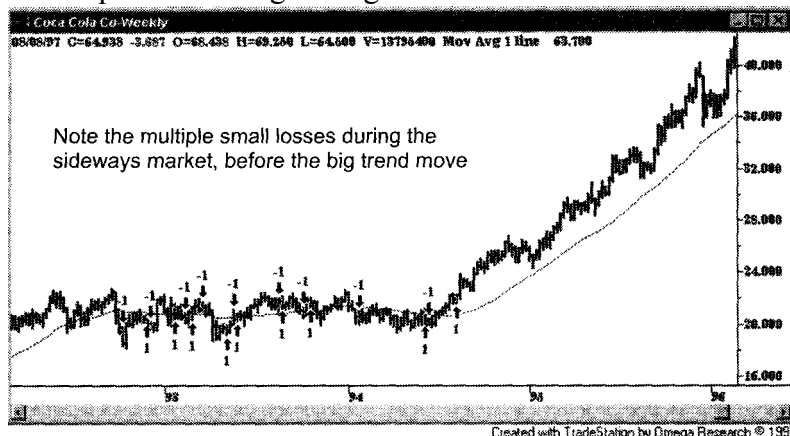

Chart 1

__TradeStation EasyLanguage__
__Indicator: Moving Ave Plot__
Input: Price(Close),Length(30);

Plot1(Average(Price,Length),"SimpAvg");

Note the multiple small losses during the sideways market, before the big trend move

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The system I've included buys when *this* moving average turns up and sells when this moving average turns down. Note in Chart 1 that KO went through a directionless period in 1993 to mid-

94 and then took off on a trend in mid-1994. This is characteristic of a trend-following system, losing money in the choppy period then making it back in the trend.

System Parameter File Moving Average Turns				SPF 1
Set-Up	30-Period Moving Average Turns			
Entry	None (market order)			
Stops	None	Exits	None	
MaxBarsBack	50	Slippage	0	
Margin	None Used	Commission	0	
Data Source	(KO) Coca Cola Stock – Omega Research			
Data Duration	1/9/70 to 8/8/97			

There is one important aspect of these tests that you should note. I have included a different line in the system. **Include System: "Exit on** 8/1/97." As 8/1/97 is the last data point on my chart, I wanted the system to exit on that day. If it doesn't, the system results may include a large open position. A large open position on any test makes it very difficult to compare results from different systems because the open trade equity is not included in the Performance Summary results.

Look at PS 1. It is a Performance Summary of the 30-period moving average system, *without* the Include System line.

S&E 1 Coca Cola Co-Weekly 01/09/70 - 08/08/97

Performance Summary: All Trades

Total net profit	$ 6.54	Open position P/L	$ 43.00
Gross profit	$ 24.46	Gross loss	$ -17.93
Total # of trades	108	Percent profitable	31%
Number winning trades	33	Number losing trades	75
Largest winning trade	$ 7.47	Largest losing trade	$ -2.00
Average winning trade	$ 0.74	Average losing trade	$ -0.24
Ratio avg win/avg loss	3.10	Avg trade(win & loss)	$ 0.06
Max consec. winners	5	Max consec. losers	9
Avg # bars in winners	26	Avg # bars in losers	5
Max intraday drawdown	$ -8.88		
Profit factor	1.36	Max # contracts held	1
Account size required	$ 8.88	Return on account	74%

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You can see that the last trade has a very large profit of $43 per share compared to the results from the last 27 years of $6.54 per share. This was the last long trade from 8/12/94, which you can see in Chart 1.

If we run another test of a system that had all trades closed since 8/12/94, it would be hard to compare the two systems' performance because one would have a large open trade and the other may or may not. The summaries would not be comparing apples to apples.

To remedy the situation, I wrote the small additional system that simply exits the market on the last data point (8/1/97). If I include this system in all comparable tests, every system will be flat on the last date, which ensures that all of the performance data will be comparable.

If you look at PS 1A, which *includes* the system, you can see that there is no open position. The Performance Summary is created with the last trade exiting on the last date in the test.

PS 1A

TradeStation EasyLanguage System: Exit on 8/1/97

If Date = 970801 then Exitlong at market;
If Date = 970801 then Exitshort at market;

(This system is included in the S&E 1 system. Notice that there is no open position)

The remainder of the tests in this chapter will include this code so that we can compare all of the systems as if they had exited on the last day.

How did this system do? Well, not so great. As you can see in PS 1A, $.48 a trade is not a great average, especially considering that we did not include our usual slippage and commission of $.50 per share. If we had, the system would have lost money. I have previously noted that the last trade was a $43 profit. Without the last trade the system would have looked like PS 1. This is even worse. So we should just throw this out and look at something else, right? Wrong!

The problem with this system is that it only trades the set-up. There is no entry, or what I would formally call an entry. A market order, for me, is not a valid entry. Unless a market order has any other conditions attached to it, it should not be used as an entry. The flaw in *this* system is that it does not use a valid entry technique.

If you recall, there are many different ways of creating an entry. The most common is to use some sort of bar breakout technique. I have also mentioned several times that the best way to create a system is to use indicators in ways that are unconventional. For me, that means using indicators as entries when they are commonly used as set-ups, or as a set-up when they are commonly used as entries.

In this case, I was looking at an indicator called %R. This is an overbought/oversold indicator that is commonly used as the set-up in support and resistance systems. Chart 2 shows %R at the bottom of the chart.
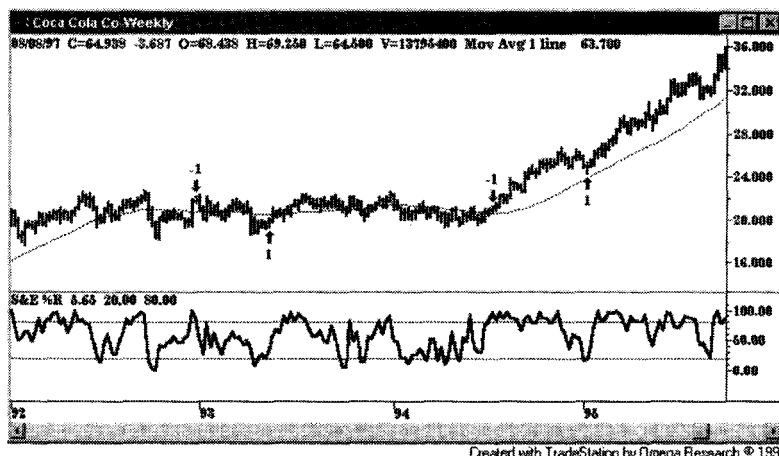
Chart 2

TradeStation EasyLanguage Function : PercentR

Input : Length(10);
Value1 = Highest(High,Length)
- Lowest(Low,Length);

If Value1 <> 0 then
PercentR = 100 -
((Highest(High,Length)
- Close) / Value1) * 100 else
PercentR = 0;

Indicator: S&E %R Plot
Plot1(PercentR(10),"%R");
Plot2(20,"BuyLevel");
Plot3(80,"SellLevel");

PercentR tells you where the current price is in relation to the designated range. In this case, we find the highest high of the last 10 bars and the lowest low of the last ten bars. We then calculate the percentage of the current price as compared to the range of the last 10 bars. If the highest high was 20 and the lowest low was 10 and the current price is 16, PercentR would be 60%. If the current price were 14, PercentR would be 40%.

Conventional usage of PercentR would suggest its use as a set-up in support and resistance systems, similar to how we used the Stochastic Indicator as a set-up in Chapter 3, Markets, Systems & Time Frames. The buy set-up occurs when %R gets below 20 and the sell set-up occurs when %R is above 80. SPF 2 shows the parameters of this system.

System Parameter File Moving Average Direction with %R			
Set-Up	30-Period Moving Average Direction		
Entry	%R below 20% or above 80%, then at market		
Stops	None	Exits	None
MaxBarsBack	50	Slippage	0
Margin	None Used	Commission	0
Data Source	(KO) Coca Cola Stock – Omega Research		
Data Duration	1/9/70 to 8/8/97		

However, as I was looking at this chart, I thought that instead of using %R as a set-up, I would try to be creative and use it as an entry. Therefore, our long set-up would be the 30-period moving average moving up, and the entry would be %R being below 20%. The short set-up would be the 30-period moving average moving down, with %R being above 80%. Chart 2 has this system applied.

If you compare Chart 2 to Chart 1, you can see that the number of trades taken during the sideways market was reduced dramatically by the addition of the entry. This is very positive. The one thing we want to do with trend-following systems is reduce our cost of trading through the choppy market. The Performance Summary for Chart 2 is shown in PS 2.

S&E 2 Coca Cola Co Weekly 01/09/70 - 08/08/97

Performance Summary: All Trades

Total net profit	$ 63.24	Open position P/L	$ 0.00	
Gross profit	$ 68.77	Gross loss	$ -5.54	
Total # of trades	21	Percent profitable	67%	
Number winning trades	14	Number losing trades	7	
Largest winning trade	$ 43.38	Largest losing trade	$ -4.13	
Average winning trade	$ 4.91	Average losing trade	$ -0.79	
Ratio avg win/avg loss	6.21	Avg trade(win & loss)	$ 3.01	
Max consec. winners	6	Max consec. losers	2	
Avg # bars in winners	76	Avg # bars in losers	48	
Max intraday drawdown	$ -5.81			
Profit factor	12.43	Max # contracts held	1	
Account size required	$ 5.81	Return on account	1088%	

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PS 2

Note that even though we have no amount for slippage and commision in this system, this sytstem would have covered a significant amount.

I use $.50 per share as a ballpark figure for stocks and with an average trade of $3.01 we have a lot of room for S&C. We need to feel comfortable that even if the S&C is greater than $.50 we would be OK.

In this case we would be fine.

In addition, as you can see from comparing PS 2 to PS 1A, the results were significantly improved. The profit increased from $53 to $64, percent profitable increased from 32% to 67%, the average profit per trade increased from $.48 to $3.01, MAXID (maximum intra-day drawdown) down from $8.88 to $5.81 and the ROMID (return on MAXID) went up from 587% to 1088%.

Even though the performance is improved, is this a good entry? Does it confirm the direction of the set-up? No, %R being low goes against the trend, and a market order does not confirm the direction of the set-up. So it violates Entry Rule #1.

Does it guarantee that the system will catch every big move? No. It is possible that a big trend move could occur without %R ever getting in the buy or sell range. Thus, it also violates Entry Rule #2. Knowing this, I always check a system to see if the bar breakout entry I mentioned

earlier, in place of the market order, improves the system. I did so here as well. The results can be seen in PS 3.

PS 3

<u>**TradeStation EasyLanguage System: S&E 3**</u>
Input: AvgLen(30),PrctRLen(10),
    BuyLvl(20),SellLvl(80);
IncludeSystem:"Exit on 8/1/97";
IF CurrentBar > 1 and
Average(Close,AvgLen) >
Average(Close,AvgLen)[1] and
PercentR(PrctRLen) < BuyLvl Then
Buy **at high + 1 point stop**;
IF CurrentBar > 1 and
Average(Close,AvgLen) <
Average(Close,AvgLen)[1] and
PercentR(PrctRLen) > SellLvl Then
Sell **at low - 1 point stop**;

Compare PS 3 with PS 2. You will notice that the MAXID has all but disappeared. As such, the ROMID has moved up to over 3, 500% and we have moved the average trade up to over $5. All this improvement with just changing the entry from a market order to a bar breakout. The SPF is exactly the same as SPF 2 except that we use a bar breakout rather in place of a market order.

Now we have three conditions that must be met in order to get into a long trade. The first is the 30-period moving average being in an up-trend, the second is PercentR is below 20%, and the third is that the price breaks above the high of the previous bar while PercentR is below 20%. Looks great, we're done, and we have a great system. Right?

Not quite! As I looked over the TradeStation chart of the entries and exits of the system, I noticed something that bothered me about it.

Chart 3

We missed a big move!

As you look at Chart 3, you will see a short trade in late 1981 that loses a significant amount of money as the bull move starts. The system sells short at around $1.40 and reverses to long at $2.80. This is a 100% loss! The loss is masked in the Performance Summary by the fact that after adjusting the back data for splits, the stock price was very low so the loss per share looks minor. The key is that while it is minor on a per share basis, it is huge on a percentage basis.

But there is something even more important. We missed the big move! Here is a situation where the price of KO doubled and we were not in. In fact, we not only missed the move, we were on the wrong side of the move, short the whole way up! We must conclude that this entry still violates Entry Rule *#2*.

This is a major flaw in a system that looks great when you only look at the Performance Summary. Since we missed a big move, and we were creating a trend-following system, we know that we are not done. Even though the numbers look great, we have found a major flaw.

I recommend that you use TradeStation to scroll through the chart with the system on it, looking at the entries and exits. You will be amazed at what you will find and what you will learn about how indicators, set-ups and entries work and the flaws in your current design.

It is clear from looking at this trade that there is a real possibility that the set-up moving average could be moving up, %R could be below 20%, and we would never get a bar breakout on the upside. Then, when %R moves back above 20%, our orders are cancelled, as the bar breakout would only be in force while %R is below 20%. We need to fix this.

As it currently exists, TradeStation only permits the bar breakout to occur while %R is below 20%. If PercentR moves above 20%, the bar breakout order is cancelled. This is what causes us to miss this big move. One way to fix this is to direct TradeStation to enter the market if %R moves above 20% once it has been below. This would ensure that every time %R was below 20%, we would enter long when it moves above 20%. The results of this change are shown in PS 4.

PS 4

TradeStation EasyLanguage System: S&E 4
Input:AvgLen(30),PrctRLen(10), BuyLvl(20),SellLvl(80);
IncludeSystem:"Exit on 8/1/97";
IF CurrentBar > 1 and Average(Close,AvgLen) > Average(Close,AvgLen)[1] and PercentR(PrctRLen) crosses above 20 Then Buy at market;
IF CurrentBar > 1 and Average(Close,AvgLen) < Average(Close,AvgLen)[1] and PercentR(PrctRLen) crosses below 80 Then Sell at market;

Performance Summary: All Trades

Total net profit	$ 53.81	Open position P/L	$ 0.00
Gross profit	$ 64.37	Gross loss	$ -10.56
Total # of trades	21	Percent profitable	48%
Number winning trades	10	Number losing trades	11
Largest winning trade	$ 43.38	Largest losing trade	$ -5.13
Average winning trade	$ 6.44	Average losing trade	$ -0.96
Ratio avg win/avg loss	6.70	Avg trade(win & loss)	$ 2.56
Max consec. winners	3	Max consec. losers	3
Avg # bars in winners	86	Avg # bars in losers	44
Max intraday drawdown	$ -9.75		
Profit factor	6.09	Max # contracts held	1
Account size required	$ 9.75	Return on account	552%

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When we compare PS 4 to PS 3, we find some improvement. Profit is about the same, the percent profitable improves, and the average trade improves. However, the MAXID increases, which makes the ROMID about the same for either system. In my view, the performance is about a wash, but the system is dramatically improved and my confidence level has gone up. We have corrected a major flaw in the system, which caused us to miss a big move.

Look at Chart 4, which represents PS 4. The trend move depicted between the two arrows was so strong that %R never got oversold. If it doesn't get below 20, we will never get long, and as in the above example, would again miss the big move. We need to fix this problem as well.

%R never gets below 20% while the moving average is in an uptrend
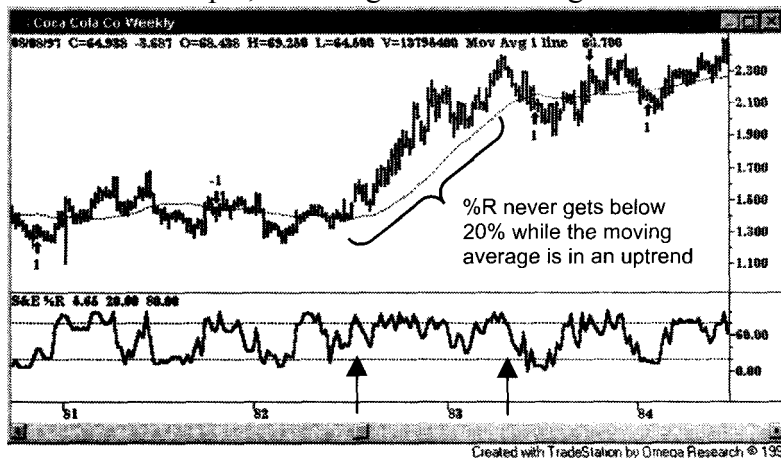
Chart 4

Note that there was a significant amount of time (almost a year) where %R did not get below 20% while the moving average was in an up-trend.

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The problem is that when the trend is so strong, %R may never get below 20%, or the reverse could be true, that a downtrend might be so strong that %R never gets above 80%. In either of these scenarios, if we use %R as the entry, we will miss the big move.

The solution is to try to be creative again. But this time instead of fooling around with %R, let's try adding another entry. So, in addition to %R let's put in another entry that will ensure that we will never miss a big move, but will be far enough away that it will not interfere with the %R entries.

When in this situation, the first thing I try is simply inserting a failsafe buy point above the highest high of the last year, and a failsafe sell point below the lowest low of the last year. This would ensure that no mater what happens with the moving average and %R, I will get long if the prices make a new yearly high, or get short if the prices make a new yearly low.

In this case, I chose the last 50 bars, which on a weekly chart is close enough to a year for me. This entry will definitely guarantee that we will not miss the big move, which meets the criteria for Entry Rule #2. The resulting system is shown in SPF 3.

<table>
<tr><td colspan="4">System Parameter File
M/A Turns - %R or 50-Wk High or Low</td></tr>
<tr><td>Set-Up</td><td colspan="3">30 Period Moving Average Direction</td></tr>
<tr><td rowspan="2">Entry</td><td colspan="3">(1) %R crosses above 20% or below 80%</td></tr>
<tr><td colspan="3">(2) Makes a 50 week new high or low</td></tr>
<tr><td>Stops</td><td>None</td><td>Exits</td><td>None</td></tr>
<tr><td>MaxBarsBack</td><td>50</td><td>Slippage</td><td>0</td></tr>
<tr><td>Margin</td><td>None Used</td><td>Commission</td><td>0</td></tr>
<tr><td>Data Source</td><td colspan="3">(KO) Coca Cola Stock – Omega Research</td></tr>
<tr><td>Data Duration</td><td colspan="3">1/9/70 to 8/8/97</td></tr>
</table>

SPF 3

TradeStation EasyLanguage
System: S&E 4 modified
Input:AvgLen(30),PrctRLen(10),
    BuyLvl(20),SellLvl(80);

IncludeSystem:"Exit on 8/1/97";

IF CurrentBar > 1 and
Average(Close,AvgLen) >
Average(Close,AvgLen)[1] and
PercentR(PrctRLen) crosses above 20
Then Buy("%R Buy") at market;

IF CurrentBar > 1 and
Average(Close,AvgLen) <
Average(Close,AvgLen)[1] and
PercentR(PrctRLen) crosses below 80
Then Sell("%R Sell") at market;

Sell("LL") at Lowest(low,50)
- 1 point stop;
Buy("HH") at Highest(high,50)
+ 1 point stop;

We have come a long way with this system, making the entry meet the two entry rules. Let's see the results with the additional entry; they're shown in PS 5.

S&E 4 - Stocks Coca Cola Co-Weekly 01/09/70 - 08/08/97

Performance Summary: All Trades

Total net profit	$ 56.24	Open position P/L.	$ 0.00
Gross profit	$ 67.40	Gross loss	$ -11.16
Total # of trades	25	Percent profitable	44%
Number winning trades	11	Number losing trades	14
Largest winning trade	$ 45.87	Largest losing trade	$ -2.63
Average winning trade	$ 6.13	Average losing trade	$ -0.80
Ratio avg win/avg loss	7.69	Avg trade(win & loss)	$ 2.25
Max consec. winners	3	Max consec. losers	4
Avg # bars in winners	95	Avg # bars in losers	24
Max intraday drawdown	$ -5.56		
Profit factor	6.04	Max # contracts held	1
Account size required	$ 5.56	Return on account	1011%

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PS 5
Now that we have added another Entry, compare the results with PS 2 and see if it is an improvement.

The results are much better. We should compare this Performance Summary with PS 2 as all of the interim tests had flaws in them that have been corrected.

The MAXID is reduced, and the ROMID is back over 1000% and close to where we started at 1088%. The largest winning trade is still a majority of the profits, but no worse than the original. The profit factor and average trade are both worse than the original but still respectable. Is this an improvement over PS 2? Yes, all in all this looks like it could be the beginnings of a winning system.

But let's look one more time at the chart (Chart 5) to make sure that we fixed the problem that has plagued us, that is, missing the big move. We want to make sure that we have corrected this problem once and for all.

%R never gets below 20% During this move but the system still gets long.
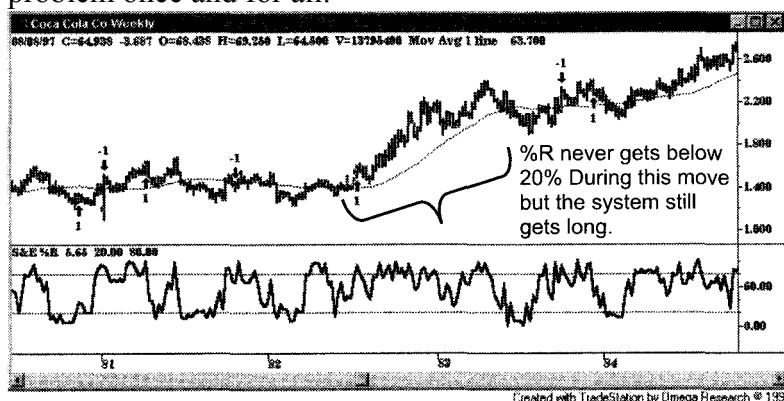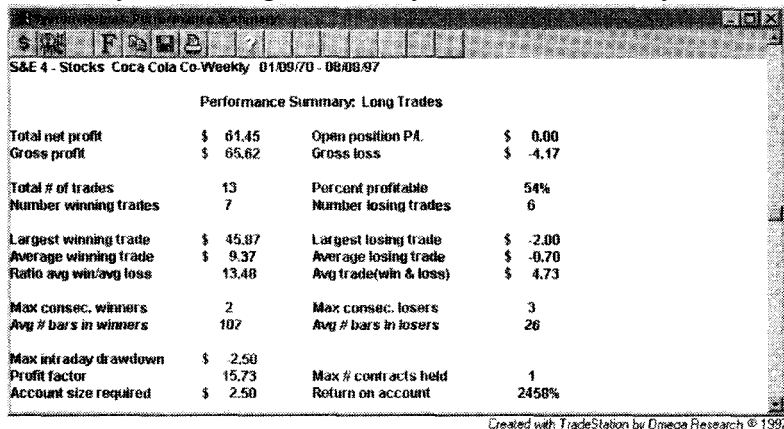
Chart 5

Even though %R never gets below 20 the system gets long. It gets long because of the new Entry, the breakout over the 50 week high. Thus we don't miss the big move.

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When we scroll through the chart with TradeStation, we see that we didn't miss any of the big moves. The failsafe entry over the 50-week high and below the 50-week low worked.

Is this really a good system? Let's leave that for a more detailed discussion in Chapter 8, The Science of System Evaluation. For now let's just look at PS 6, which is a Performance Summary of the long trades only. How would the system look if we take out this trade?

S&E 4 - Stocks Coca Cola Co-Weekly 01/09/70 - 08/08/97

Performance Summary: Long Trades

Total net profit	$ 61.45	Open position P/L	$ 0.00
Gross profit	$ 65.62	Gross loss	$ -4.17
Total # of trades	13	Percent profitable	54%
Number winning trades	7	Number losing trades	6
Largest winning trade	$ 45.87	Largest losing trade	$ -2.00
Average winning trade	$ 9.37	Average losing trade	$ -0.70
Ratio avg win/avg loss	13.48	Avg trade(win & loss)	$ 4.73
Max consec. winners	2	Max consec. losers	3
Avg # bars in winners	107	Avg # bars in losers	26
Max intraday drawdown	$ -2.50		
Profit factor	15.73	Max # contracts held	1
Account size required	$ 2.50	Return on account	2458%

PS 6

The final version of the system with all of the flaws removed.

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First of all, we notice that most of the losses come from short trades, as does most of the drawdown. This would stand to reason, as the biggest trade is one of the most recent trades, coming from the big bull market of the mid-90s.

One way of testing the robustness of a system is to eliminate its biggest winning trade. PS 1 is very close to what this system would look like without the largest trade and if you don't include the open trade profit. It doesn't look very good until you realize that the largest trade also occurred during the biggest bull market in history.

Remember that trend traders try to minimize losses in directionless markets until the big bull market comes. If we use this principle to measure the effectiveness of this system, it did quite well. The system held its own until the big move came, and then it made the big money on the big move. The system performed as it was designed. However, we would have needed a lot of patience since it took 20 years for the huge move to come!

Evaluating each Component

In this chapter I introduced the concept of set-up and entry. The basic premise is that most new system developers do not organize their systems in this manner. They use either set-ups or

entries, but not both. Using a set-up or entry on its own generally does not work. The power comes when you combine the two. I also introduced two rules for ensuring that entries were effective.

One of the summaries I always like to look at is a short table of each of the components of a system and the final system itself. I like to look at how the set-up performs on its own, and the profitability of the entry or entries by themselves. Table 1 is that comparison.

The table is a summary of the performance of the different indicators and techniques that I used to construct our system for trading Coca-Cola. With this table we are able to gauge what the different characteristics are of each and what they add to the mix. Is the whole greater than the sum of the parts?

Field	Set-Up 30MA	Entry 1 %R	Entry 2 50wk H/L	Combined
Net Profit	53.04	-5.33	63.98	56.24
% Profit Trades	32 %	62 %	45 %	44 %
# Trades	108	87	11	25
Average Trade	$0.48	$-0.06	$5.82	$2.25
Largest Trade	$46.50	$9.94	$62.89	$45.87
MAXID	$-8.88	$-23.13	$-2.17	$-5.56
ROMID	507 %	-23 %	2943 %	1011 %

Table 1

The item that stands out most in Table 1 is the profitability of buying the 50-week highs and lows on their own. What a great return! Unfortunately it all came from the last trade. Without that trade, there would have been almost no profits for twenty years and then one profitable trade. Also, I like to have at least 25 and optimally greater than 30 trades to ensure that the statistics are meaningful. Although our final system only has 25, that is within my range of acceptability. It is far better than the 11 from the 50-week breakout entry, which is not acceptable.

When I am working on a system and see something that is interesting but doesn't meet my expectations, like this 50-week breakout entry, I make a note to explore it at a later date. I expected that the results of the three systems would be worse than the combined, and they were. But the results of the 50-week breakouts were so interesting, even with only 11 trades, that we should pack this technique away for further exploration.

Except for the last trade, the combined set-up and entry system is the most reasonable of the four. It has the most reasonable average trade because it is the least dependent on only one trade. The MAXID is also in the acceptable range. The ROMID is in the middle of the range as well, but I don't give ROMID as much weight as the other characteristics because the MAXIDs are so low to begin with.

All in all, for actual trading I would have more confidence in the system we developed than the three components. In this case, set-up and entry, and its rules, worked its magic with these

indicators and gave us a better system than any of the components could deliver. By a better system, I mean one that I could trade with confidence.

Ultimately, the question you have to ask yourself is could you trade this system? Could you trade and stick with the system we have designed? Just because the system is profitable and meets our system development criteria does not mean it is one we could or would want to trade. Just because it is profitable does not mean that you are emotionally able to trade it. I know so many traders that create or purchase very profitable systems, but because their personality doesn't match the system, they still lose money, all the while lamenting the fact that they can't stick to the system.

Summary

Trading the set-up and entry concept and making sure that you follow the rules gives far superior results when compared to trading either set-ups or entries by themselves. Using both a set-up and an entry together enhances the performance and profitability of a system. Here's how I like to summarize how you should think about set-ups and entries:

AIM WITH THE SET-UP PULL THE TRIGGER WITH THE ENTRY

I always use the concept of set-up and entry to develop systems. There are two distinct parts to system writing and keeping these two components in mind will help you to organize your thoughts and design a sound strategy. Above all, this blueprint for system development opens up a whole new range of possibilities for us to test.

Chapter 5: The Art of System Design - In Theory

I have refined a standard procedure that I use to work my way through the process of creating a system. We will start with the big picture and make increasingly more detailed decisions about the system. We will begin with the major assessment of what type market action we want to trade and what kind of trader we want to be. We will end up with making decisions on exits, and how far *away* to put our money management stops.

Pick the Market Type

Again, the first decision you must face is what type of market action you want to trade. Although on the surface this may look like an easy decision, in fact, it is a difficult judgment. The reason it is difficult is because most new traders only consider one aspect, profits. They simply try to pick the system that makes the most money. Unfortunately, focusing on the money will probably lead you to make the wrong decision. It is the psychological aspect of trading each of the market types that is the most important consideration. Keep in mind that it does not make any sense to create a very profitable system that you are unable to trade psychologically.

HUMAN NATURE

I always tell traders who are having difficulties that to trade well you have to trade against your human nature. You must buy when everyone is selling and sell when everyone else is buying. If you think about it, the market is simply the sum total of all actions made by millions of human decisions. These decisions reflect human nature.

Researchers have found that 95% of all traders lose money. If we accept this to be true, then almost all of those millions of decisions will ultimately be wrong. As these decisions move the market, the market reflects human nature, and if 95% of the traders are losing money, it is clear that to make money you cannot trade like everyone else. If everyone else is trading as human nature demands they must, to be successful you have to trade against human nature, your human nature.

The most profitable trades I make usually feel like losers when I put them on. Taking these trades always goes against my human nature. For instance, many years ago I used to day-trade the S&P futures. On one particular day I had suffered a string of six losing trades in a row and had experienced a drawdown in excess of $11, 000. This was an extremely difficult day and I was ready to quit when with 45 minutes to go in the day I got another signal. What I really wanted to do was to throw my computer out the window and go home. There was no reason to put on another losing trade. Why throw more money after bad? I was not a masochist! The market was choppy all day and I surely was not going to make any money on another useless trade.

At this point however, I decided that if I did nothing else for the day, at least I would take all of the trades my system gave me. If the system lost money, then I would have to change the system, but I never wanted to say that I did not have enough discipline and stamina to implement the system I had developed, even though my instincts told me this next trade would be financially stupid.

So I took the trade, and vowed to take every subsequent trade until the market closed. I was not going to follow my inclination and quit. I would assess the system after the markets closed, not during market hours. During market hours, my only job was to implement the trades.

Well, the market exploded into one of those end-of-the-day moves that lasted until the closing bell. Not only did I made back all of the day's losses, I ended up with an $8, 000 profit for the day!

Many people were trading the trend this particular day. Trend traders had built up large losses in a very choppy market and most of us simply gave up. Just when we were ready to give up, the market moved. Those who gave up missed the big move. The human thing to do, the financially conservative thing to do was to quit and preserve money for another day. The people that made money traded against their human nature and stuck it out. It was a very difficult thing to do, but I learned a great lesson on that day.

1 learned that to trade the trend effectively you must be able to make the hard trades. The market will push you to your psychological limit before it gives you the profit. It will make sure that all the weak players are gone before it gives those that remain the big move. You need to make sure that you are not one of

 the weak traders.

The other lesson is, don't try to trade a market type that is impossible for you to implement. If you can't see yourself trading through a situation 1 just described, or you have been in one or several just like it and had trouble or quit, then trend trading probably is not for you. It is better to recognize early what type of markets you are capable of trading and accept it rather than to lose a lot of money finding out.

THE THREE TYPES

If you recall from Chapter 3, there are three types of market action: trending, directionless and volatile. The first decision you should make is which type of market action you will chose to trade. You might want to review Table 1 in Chapter 3, which sets out the characteristics of each of the three types of

systems.
Whether you are a new trader or an experienced trader, I would suggest either a trend system or a volatility system. Either you choose a trend system, with the knowledge that you are going to have to trade through extended periods of drawdown in the directionless phase, or you choose a volatility system that will give you extended periods of doing nothing while you wait for the next trade.

Which one is for you?