CHAPTER 1

Developing a Trading System

"If you bet on a horse, that's gambling. If you bet you can make three spades, that's entertainment. If you bet cotton will go up three points, that's business. See the difference?"

—Blackie Sherrod (b. 1922), U.S. sportscaster and sports writer

There are only two reasons to trade—because you enjoy the "game" or because you want to make money. There is absolutely nothing wrong with trading for fun. Everyone has a hobby. If yours is golf or tennis or bridge, you are not primarily concerned with the cost of your hobby, except to the extent that it should not adversely affect your (or your spouse's) present or future lifestyle. If your hobby is investing or trading, the same rules should apply. You need to know that it is a hobby, that it will likely cost you money, and that you will need to take precautions to ensure that it will not affect your present or future lifestyle.

Since you are reading this book, my guess is that your approach to trading is not that of a hobbyist. While you may enjoy trading, as I do, you want to win at the "game," and that means making money. But do not start trading with the idea that it is an easy way to get rich. Like any other endeavor, it requires hard work. The good news is that it is a lot easier to learn to trade or invest like a pro than it is to learn to play golf like Tiger Woods.

> "There are no secrets to success. Don't waste your time looking for them. Success is the result of perfection, hard work, learning from failure, . . . and persistence."
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> —Colin Powell (b. 1937), former U.S. Secretary of State and Chairman of the Joint Chiefs of Staff
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> "No profession requires more hard work, intelligence, patience, and mental discipline than successful speculation."
>
> —Robert Rhea, U.S. Dow theorist and author, *The Dow Theory*, 1932

Anyone can make money in the markets. All it takes is (1) the willingness to work hard to find a profitable approach and (2) the patience and discipline to adhere to that approach. Unfortunately, too many people either cannot or will not take the time to develop a profitable approach or, worse yet, having developed one, they find excuses to override it (e.g., "It's different this time").

> "Charts not only tell what was, they tell what is; and a trend from was to is (projected linearly into the will be) contains better percentages than clumsy guessing."
>
> —R. A. Levy

Since its inception in 1987, Dorsey, Wright & Associates (DWA) has been providing its clients with the tools to develop a solid game plan for profitably trading. Their tools of choice are Point & Figure charts, which dispassionately record the tug and pull between supply and demand. This dispassion is important because it permits you to analyze a stock, a commodity, a sector of a market or the market at large without the fog of emotion. Unlike bar chart patterns, such as their head-and-shoulder or cup-and-saucer formations, which are notoriously subjective, Point & Figure signals are objective and unambiguous and can therefore be back tested for profitability, a necessary prerequisite for developing a winning approach to the markets.

> "If you are not willing to study, if you are not sufficiently interested to investigate and analyze the stock market yourself, then I beg of you to become an outright long-pull investor, to buy good stocks, and hold on to them; for otherwise your chances of success as a trader are nil."
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> —Humphrey B. Neill, U.S. editor of *The Neill Letter of Contrary Opinion*, *Tape Reading and Market Tactics*, 1931

If your background is stock investing—long-term buying and holding that seeks appreciation over time and, perhaps, dividends—you will need to change your time horizon and focus. Commodities are about trading, not investing. One could invest in commodities, for example, by collecting art or coins for long-term appreciation or by buying and holding gold or gold futures as a hedge against inflation or by buying and holding foreign currency or foreign currency futures as a hedge against adverse changes in the exchange rate. But most people (other than hedgers) trade commodities for the purpose of profiting from relatively short-term swings either directly or by investing with a commodity-trading adviser (CTA) or in a commodity pool. In the latter case, the CTA or commodity pool operator does not invest in commodities either; he trades commodities for the purpose of profiting from relatively short-term swings.

> "Wall Street's graveyards are filled with men who were right too soon."
>
> —William Hamilton (1867–1929), U.S. editor of the *Wall Street Journal* and chief popularizer of the Dow theory in the 1920s

> "It isn't as important to buy as cheap as possible as it is to buy at the right time."
>
> —Jesse Livermore (1877–1940), legendary stock trader immortalized in *Reminisces of a Stock Operator* (Edwin Lefèvre, 1994)

Why does this make a difference? Because the shorter your time horizon, the more critical it is to select the correct entry point and the more important it is to pay attention to the technical characteristics (as opposed to the fundamental characteristics) of a stock or commodity. If you are buying a stock or commodity this week with the intention of holding it for, say, 20 years, your exact entry point will have little impact on your ultimate rate of return. For example, suppose XYZ is "worth" $20 per share and will grow at the long-term stock market rate of return of 10 percent per year. At the end of 20 years, XYZ will be "worth" $134.55. If you missed your entry by 5 percent and bought XYZ at $19 per share or $21 per share, your ultimate compound annual rate of return would not be much different than 10 percent to 10.28 percent and 9.73 percent, respectively. If, however, you are a trader looking for your stock or commodity to appreciate to $25 within six months, now your entry point makes a huge difference (see Exhibit 1.1).

Bought at	Rate of return if sold at $25 after 6 months	Annualized Rate of return
19	31.58%	73.13%
20	25.00%	56.25%
21	19.05%	41.72%

EXHIBIT 1.1 Rate of Return.

In short, the shorter the time horizon, the more critical it is to get in (and out) at the "right" price.

A word of caution: If you want to trade the commodities market as part of your overall asset allocation plan, you may be making a grave mistake; trading commodities is not investing in commodities. An "asset class" is a category of investments, all of which share similar risk/reward characteristics and are used to address similar risks. For example, the grains—wheat, rye, corn, and so on—have similar risk/reward characteristics and help address the risk of core inflation. Since trading commodities does not hedge you against commodity inflation, it should not be included with those assets that you have earmarked for the commodities asset class. To put it another way, the objective of asset allocation is to spread your investments among different asset classes either to reduce the volatility of your overall portfolio or to target those areas of risk to your long-term financial health. While the reward/risk profile of trading commodities may justify its inclusion in your overall asset allocation plan, it is not a substitute for an investment in commodities for the purpose of protecting you against some commodity-specific risk (such as inflation or change in exchange rate).

Returning from my brief digression of technical analysis, there is nothing I could add to a DWA discussion of Point & Figure charting. But whether (and when) a particular stock or commodity is a good buy (or sale) is only part of a successful trading approach. A successful trading approach also requires, at a minimum:

- Rules for determining how much of your assets you will invest on any particular trade.
- Rules for exiting a trade both (a) if the trade is going in your favor and (b) if it goes against you.

It is amazing how many people have good ideas as to when to enter a trade, but no idea as to when to exit the trade or how big to trade. The good news is that, as I've learned over the years, the keys to successful trading are universal. As such, I hope that the broader principles that have guided my professional and personal trading over the past 20 years will help you discover for yourself how you can trade the commodities markets successfully.

> "It may be that the race is not always to the swift nor the battle to the strong—but that is the way to bet."
>
> —Damon Runyon (1884–1946), U.S. journalist, sports columnist, and short-story writer

There is one and only one way to make money in the markets and that is by applying a strategy with positive mathematical expectancy. This is the secret to casinos and insurance companies. Sure, a casino or insurance company can lose money on any given day or to one or another customer (or hurricane) but they "can't" be beaten over the long run. For example, say someone walks into your casino with $100 in his pocket to play craps. Even if he were to employ his best strategy, you still have a 1.36 percent edge. This means that, after he has bet his $100, you "expect" to earn $1.36. But it is even better than that. Your edge is based on the amount of money he wagers, not the amount of money he earmarked for the craps table, a fact frequently overlooked by casino customers, to the glee of many a casino. So, if a customer arrives at your casino with $100 in his pocket and things go as expected, you will earn $1.36 only if he manages to limit his wagering to just $100. If he is like most people, he will keep wagering as long as there is still money in his pocket. If, because of his occasional wins, he is able to stretch his $100 so that he can place one hundred $5 bets, the entire $500 is subject to your edge, and you "rate" to earn $6.80 ($500 × 1.36%) before the customer leaves your casino.

Also, entering a trade is only half the battle. Too many traders pay an inordinate amount of attention to finding an approach with a high winning percentage for entering trades and pay absolutely no attention as to when to exit a trade. This is one of the two biggest mistakes traders make in constructing a trading strategy. (The other is not knowing how much to invest in a given trade.) A successful strategy requires both an entry strategy and two different exit strategies—one for exiting if the trade moves against you ("cut your losses short") and the other for exiting winning trades. Without entry *and* exit rules, you cannot determine whether your strategy is sound.

> "In investing money, the amount of interest you want should depend on whether you want to eat well or sleep well."
>
> —J. Kenfield Morley (1838–1923), British journalist, *Some Things I Believe*

> "If you don't know who you are, the stock market is an expensive place to find out."
>
> —George J. W. Goodman (b. 1930), U.S. portfolio manager and author (under the nom de plume Adam Smith)

What particular approach should you employ? That depends on *you*. How you invest or trade is as personal as your choice in clothes, food, and spouse. It is a reflection of your personality. Do you prefer a high chance of success with low payoff or a low chance of success with a high payoff? Do you prefer investing in out-of-favor stocks or commodities (so-called value investing) that may take a while to turn profitable or investing in "hot stocks" that could make or lose your money quickly (so-called momentum trading). Based on your (reasonable) preferences, you *will* be able to fashion a positive mathematical expectancy strategy. So, for example, if you like buying the "hot" stock or commodity, you should fashion your trading around a breakout system. A number of years ago, DWA conducted several studies showing that certain bullish patterns have a very high probability of trading higher by a significant percentage. Several more recent academic studies show that relative-strength stocks from one year tend to outperform the next year.

> "The time to buy is when blood is running in the streets."
>
> —Baron Nathan Rothschild (London financier, 1777–1836)

I, however, am a contrarian by nature. It was key to my success as an "options market maker" on the American Exchange (AMEX) floor. To me, it is logical that different stocks, commodities, real estate, art, widgets, or anything else you can think of, fall in and out of favor. The market is emotional, not rational, in the short term. At times and for a time, everyone "needs" to own a particular investment or be involved in a particular fad. As a contrarian, I watch for those times when something is irrationally in or out of fashion and apply Point & Figure charts to determine when the sentiment may be turning. To be more concrete, in my hedge fund, I quantify the various fundamental criteria—price-to-earnings (P/E) ratio, price-to-book, price-to-sales, and so on—to determine when a stock is undervalued and use Point & Figure charts to help me determine when the "knife has stopped falling." Value determines what to buy; charts determine when to buy.

In a similar vein, I am a contrarian in my commodity investing. Since I have enough on my plate managing my hedge fund, I do not trade the commodity markets directly. Instead, I trade the commodity markets by investing with commodity trading advisers. I do this for several reasons. First, most CTAs charge the same amount, typically a 1 percent management fee and a 20 percent incentive fee. Thus, I can invest with a good trader for the same price as I can invest with a not-so-good trader. This appeals to my sense of value.

Second, the commodity markets have been very difficult to trade over the past several years (2004 was an exception). Many CTAs have left the commodity markets for the greener pastures of hedge funds. Those CTAs who stayed have spent, and spend, exhaustive amounts of time developing and evolving their systems. The CTAs who are left have proven, in true Darwinian fashion, that they are the best. From a logical point of view, this appeals to me.

Third, most CTAs are trend followers. Sometimes a CTA's system is in step with the markets, and sometimes it is not. As a contrarian, I wait for a CTA to experience a significant loss, and then I invest. ("Significant" will vary from CTA to CTA, depending on a CTA's particular risk tolerance.) By taking this approach, I lower the cost of entry, improve the percentage chance of success, and gain the benefit of the CTA's experience in handling difficult times in the past. It's not foolproof. It's not a sure thing. But it has served me well over time.

Contrarian investing is not for everyone, however, and it is not nearly as sexy as momentum investing. Being a value investor during the tech bubble of the 1990s was not fun. It seemed that everyone I met at neighborhood parties was crushing the market. I don't know how many friends, family, and neighbors told me how, with Yahoo at, say, \$340, they had "shrewdly" purchased it only weeks earlier at \$150. I knew that the greater-fool theory of trading works for only so long, but it seemed that the laws of nature were being suspended for an exceedingly long time.

> "In this game, the market has to keep pitching, but you don't have to swing. You can stand there with the bat on your shoulder for six months until you get a fat pitch."
>
> —Warren Buffet (b. 1930), legendary U.S. investor, philanthropist, and second richest man in the world

> "There's nothing wrong with cash. It gives you time to think."
>
> —Robert Prechter Jr. (b. 1949), Elliott Wave theorist and guru of the 1980s (according to Financial News Network)

Finally, and perhaps more importantly, select a time horizon that matches how frequently you like to trade. If you are already comfortable with trading, you probably know how easy it is to put on a trade dictated by your system. What frustrates most traders is waiting for a signal. The worst thing that a trader can do—and I've seen it many times on the floor of the AMEX—is to trade out of boredom. Your system works only when you put on the trades that are dictated by the proven system that you created. If you force trades, you are lowering the positive expectancy of your system, thereby simultaneously reducing your long-term profitability and undermining your confidence in your system. Don't do it.

"Those who cannot remember the past are condemned to repeat it."
—George Santayana (1863–1952), U.S. (Spanish-born) philosopher, *The Life of Reason*, Volume 1, 1905

"In the stock market those who expect history to repeat itself exactly are doomed to failure."
—Yale Hirsch, U.S. publisher, *Stock Trader's Almanac*

You can never know for certain whether your strategy will be profitable in the future. The best you can hope for is that your strategy is logical and that it has been historically profitable. So, if your strategy is logical, but your back test shows that it was a loser historically, do not trade it. Assuming the past is relevant to the future, you will be trading a losing system. Conversely, regardless of past results, if your strategy is illogical (e.g., going long or short the stock market based on who won the Super Bowl, a particular alignment of the stars, the length of women's skirts, the width of men's ties, etc.), do not trade it.

"There are three kinds of lies: lies, damn lies, and statistics."
—Benjamin Disraeli (1804–1881), English statesman and prime minister

In my youth, I would let the numbers alone dictate my trading. I did not do anything as foolish as let the winner of the Super Bowl determine my trades, but I did not give enough weight to the logic behind a particular trading approach. One of peculiarities of statistics is that with enough data—price, volume, time, Super Bowl winners, celestial patterns, the length of women's skirts, the width of men's ties, and on and on—you can always find two completely unrelated items that show a high degree of statistical correlation. In fact, it can be statistically proven that out of 500 studies, each of which is over 99 percent accurate, it is more than 99 percent certain that at least one of the studies is wrong. I hope you will learn from my mistake and select a trading approach that is both logical and has a historically verifiable positive mathematical expectancy.

> "This year I invested in pumpkins. They've been going up the whole month of October and I got a feeling they're going to peak right around January. Then bang! That's when I'll cash in.
>
> —Homer Simpson (b. 1955 or 1956, depending on episode), U.S. cartoon character

So, if you cannot trust the back tests and you cannot trust your common sense, what do you do? Actually, the prior two paragraphs do not contradict each other. I use back tests to disprove the validity of a trading strategy, not to create a trading strategy. In other words, I do a lot of reading and thinking about a particular market that interests me. The goal is to get an understanding of what makes the market move. I then form a testable entry-rule hypothesis (such as buy above the bullish support line on a double top) and a testable exit-rule hypothesis (exit the position if there is a subsequent double bottom break or if the horizontal or vertical price target is met). Finally, I test the enter-and-exit strategy for profitability. If all goes according to my thinking, I will now have a logical, profitable, historically verified approach.

> "The less a man knows about the past and the present the more insecure must be his judgment about the future."
>
> —Sigmund Freud (1856–1939), Austrian psychologist

There is another reason you want a logical strategy that is historically verifiable. Whatever approach you select, there will come a time when it seems that it will never signal another winning trade. Unless you are confident in your reasoning and "know" what to expect, you will find it exceedingly difficult, if not impossible, to weather this inevitable bad patch. By reexamining your thinking and reexamining (and continually updating) your back test, you can see whether the bad patch is within the range of "normal" or a cause for concern.

> "It is not how right or wrong you are that matters, but how much money you make when right and how much you do not lose when wrong."
>
> —George Soros (b. 1930), U.S. (Hungarian-born) billionaire fund manager and philanthropist

> "Markets can remain irrational longer than you can remain solvent."
>
> —John Maynard Keynes (1883–1946), British economist and author, considered by many to be the leading economist of the twentieth century

I hate to tell you this but just having a logical, historically verifiable profitable strategy is not enough. You also need good money management skills. There are two sides to this coin. First, you do not want to invest more than you could comfortably lose. When I was on the floor of the AMEX, there was a trader who would frequently say "good for a one lot, good for a 1,000 lot." In other words, if a trade met his reward/risk parameters, he would be willing to put on that particular trade as large as the other side was willing. When things were going well for him, they were going very, very well. Unfortunately, the inevitable occurred. He put on a high-probability stock-and-options play in Yahoo when Yahoo was trading at $187. Believe it or not, had he never touched the position, he would have made $250,000. Unfortunately, Yahoo immediately ran up to almost $400, at which time he was forced (he wasn't eating *or* sleeping well) to hedge the position. His hedge then came back to bite him when the stock cracked. All in all, he *lost* over $250,000 because the initial position was just too big.

Avoiding playing too big is not the whole battle, however. If your goal is to maximize your rate of return (as opposed to just make a certain amount of money), it is also important not to play too small, although the repercussions are not nearly as dire. This means trading a portion of your investable assets at each and every opportunity. So, for example, suppose we agreed to play the following game: I will flip a fair coin. For every dollar you wager, I will pay you $1.25 for a head and you will pay me $1.00 for a tail. Clearly, this is a game that you want to play, but what is your money management strategy for maximizing the size of your investable assets?

Let's say you start with $1,000. If you bet it all every time, you will lose as soon as one tail comes up—and you will not be able to continue to play the game to win back your bankroll. However, if you invest, say, $50 each time, barring a run of 20 initial tails or subsequent strings that are predominantly tails, after 1,000 coin flips, you "expect" to make $6,250. If more than half the flips are heads, you will do better than that; if more than half are tails, you will do worse. All in all, not a bad return.

Your optimal strategy, however, is to invest 10 percent of your assets every time. First, since you never invest your last dollar: you cannot lose it all. Second, after 1,000 coin flips, you "expect" to make $49,732.88. This is a clear winner over even the best equal-dollar money-management strategy. Interestingly enough, underinvesting or overinvesting by the same amount produces the same (suboptimal) result.

You needn't remember all this. The important point is that, while a strategy that has a positive mathematical expectancy is necessary to your success, it is not sufficient; you also need good money management. Or, to put it another way, bad money management can make a good strategy a loser, but good money management cannot make a bad strategy a winner.

> "Compound interest is the eighth wonder of the world, the greatest mathematical discovery of all time."
>
> —Albert Einstein (1879–1955), U.S. (German-born) physicist and Nobel laureate

Investing is not a get-rich-quick scheme. It is a slow, consistent process that takes advantage of what Albert Einstein (yes, that Albert Einstein) called the eighth wonder of the world—compound interest. If Peter Minuet, who supposedly paid $24 in beads to purchase Manhattan Island from the local Canarsee Indians in 1624, had instead invested the $24 at 10 percent—the long-term rate of return of the stock market—his $24 would have been worth almost $142 quadrillion (that's 142 followed by 15 zeroes) today. Since all of Manhattan is worth only a fraction of a fraction of that amount, one wonders who got the raw deal!

Compound interest has many fascinating features. For example, a 10 percent compound annual rate of return is far more than twice as good as a 5 percent compound annual rate of return. If you were to invest $100,000 for 10 years at a 10 percent compound annual rate of return, you would have made almost $160,000, while at a 5 percent compound annual rate of return, you would have made closer to one-third of that amount—or a little over $60,000. The longer you do this, the more meaningful the difference.

The difference in the rate of return needs not to be so dramatic. Adding just 1 percent to your compound annual rate of return can have an outsized impact on the size of your account after a number of years. For example, increasing your compound annual rate of return from 5 percent to 6 percent will increase your profitability by almost 50 percent after 30 years (see Exhibit 1.2).

Compound Rate of Return	Profits after 5 Years	Profits after 10 Years	Profits after 20 Years	Profits after 30 Years
5%	$ 27,628	$ 62,889	$ 165,330	$ 332,194
6%	$ 33,823	$ 79,085	$ 220,714	$ 474,349
10%	$ 61,051	$ 159,373	$ 572,750	$ 1,644,940

EXHIBIT 1.2 The Wonder of Compounding.

"Slow and steady wins the race."
—Aesop, c. 620 B.C.E.–564 B.C.E., Greek fabulist

How do you achieve a high compound rate of return? By looking for strategies that produce less fluctuation in the trade-to-trade rate of return. Most traders would see no difference between alternately making and losing 3 percent per month for one year versus alternately making and losing 10 percent per month for one year. In each case the arithmetic average is 0 percent, but arithmetic averages are misleading. Both traders are losers. The 10 percent-per-month trader would be out $5,852 after one year or more than *10* times as much as the 3 percent-per-month trader's loss of $539. In fact, the 3 percent-per-month trader is even better off than a trader who alternately makes 11 percent but loses only 10 percent (an arithmetic average of +1/2 percent per month), for the latter would still lose $599 after one year. So, when you are evaluating your trading strategy, be sure not to look at just the arithmetic average rate of return. You also need to examine how volatile the individual component returns are.

I know I have covered a book's worth of material in one chapter, and a short chapter at that. Don't lose heart. The rules are simple and can be taken a step at a time:

1. Decide on a trading approach that makes sense to you and is consistent with your personality.
2. Establish rules for entering and exiting the trades selected by your approach.
3. Test the approach to ensure that it is historically sound.
4. Determine how much of your investable income you want to devote to this approach as well as to each trade mandated by the approach. Do not base it on the prior worst losing streak. My own personal rule is that the worst losing streak is yet to come.
5. Stick to your approach. After spending all the time and energy on steps (1) through (4) do not override your approach for *ad hoc* reasons.
6. Have fun.