

# **Market Timing and Technical Analysis**

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## **THE HISTORY AND EVOLUTION OF TECHNICAL SECURITY ANALYSIS**

Over recent years, the use of technical analysis in the investment decision-making process has become more commonplace. Today's more sophisticates led investor generally has some type of technical application at hand, whether it be- a simple chart package, or a sophisticated computer program.

Yet, for some reason, there is still some misunderstanding about the technician's craft. Some critics still flaunt technical analysis as being akin to astrology, or worse.

As we tire updating this contribution to the Htimibwk, the stock market as measured by the Dow Jones Industrial Average has just suffered its greatest one-day [win! drop in history, dropping 61.87 points. The financial press was abundant with reasons for the decline, but emphasis has been placed on the "cautious words" having recently been pronounced by a number of stock market technicians. This theory, in turn, resulted in a feature story on the first page of the second section of Hie Wall Street journal. The headline: "Stock Market's Technical Analysts Get New Respect after Price Drop." While the article does afford a somewhat credible review of some of the negative technical factors that led some analysts to offer words of warning, we. suppose to "balance" the story it was necessary to offer a fe\v words of criticism regarding the technical approach. Reading the views of some well-known, but obviously stmight-on-rundamentally oriented portfolio

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managers, we had a feeling of *deja vu*. Said one, "These analysts [technicians] might as well look at random numbers and try to predict the next one!" Another manager noted, "In the long run, you could do as well with Ouiji boards or tarot cards." An academic input was interesting as well: "These people make a lot of predictions, and occasionally one of them will come right. But listening to them regularly can be hazardous to your wealth."

We sense that more thoughtful students are finally realizing that till form:; of market analysis have their own particular shortcomings. Random walk is being debunked by the same theoreticians that first supported it. Modern portfolio theory (MPT) has lost many of its original followers. Fundamental earnings estimates are often far off target, and economic forecasts can often turn out to be ill founded, or vary greatly from one economist to another. All forms of analysis are really exercises in educated guess work. Technical methods are no different,

One reason we suspect the technical approach has had more than its share of critics is because there haven't been all that many textbooks available on the subject. Yet many authoritative works on the approach can be found with copyrights dating from the turn of the century, if not earlier. Books on fundamental analysis became greater in number after the passage of the Securities and Exchange Commission Acts of 1932, and 1933. To wit, the so-called bible of technical analysis, *Security Analysis*, by Graham and Dodd, was first in print as of 1934.

Our research indicates technical analysis is the oldest form of security analysis known to man. We believe charts were first used in Japan in the 17th century to plot the price of rice, possibly representing the earliest application of trend analysis disciplines. Technical analysis is a common investment tool in Japan today. The Japanese stock market is the second largest capitalized formal trading market in the world (after the NYSE), and many Japanese technicians use methods more specialized to their market's trends. In the United States, technical applications can be traced back over 100 years when financial statements were not readily available for any type of quantitative analysis. In the late 1800s and early 1900s, if a "researcher" visited the corporate offices of a major concern and asked, "How's the business?" he was no doubt politely told, "It is none of yours!"

Over the years we have learned to look at our role of a technician as being close in kind to that of a navigator. We think of our clients as the "pilots," entrusted with the decision-making role in guiding their personal or professional accounts. Technical studies of the market, group behavior, or stock trends can determine evidence of shifting demand-supply activity which can easily be likened to the navigator warning the pilot of a storm ahead. Like the navigator, the technician will not always be correct in his readings, or a change in "patterns"

could easily develop rendering the original interpretation invalid. But whatever the outcome, we sure wouldn't want to fly with a pilot that constantly ignores his navigator. Of course, a record of the navigator's "calls" should be maintained as well.

Success in the stock market comes by minimizing risk. I3ut, unfortunately, many look at the market from the viewpoint of reward only, sometime\* taking unnecessary risk to achieve it. Buying a stock with apparent strong fundamentals and little regard for the stock's technical position can easily result in a quick loss. Many stocks can "top-out" when, as the saying goes, "business couldn't be better." On the other hand, undue risk is also taken when making a commitment strictly on technical grounds. Many good-looking stocks have fallen out of so-called base formations due to an unexpected poor earnings report. Therefore it seems logical that a combination of both types of securities analysis should result in better decision making and the results that follow. Since technical analysis is primarily a timing tool, it could be said that fundamental analysis represents the "what" input, while technical analysis is the "when."

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Cutting losses short is crucial tor long-term investment success. We have often referred to a simple philosophy whereby we look at our decision making as an exercise that can result in only out<sup>1</sup> of five eventual outcomes. We can experience ;in unchanged position, a large profit, large loss, small profit, or a small loss. If wi: can possibly eliminate one of these outcomes, obviously the large loss, then we are merely left with the other four. Over a number of years the small profits, losses and unchanged positions will "offset" each other. Therefore wt<sup>1</sup> art<sup>1</sup> left with the enjoyment of occasionally booking the large profit. Many technical methods can be employed as long-term disciplines to guard against the large loss. We are sure that other analytical inputs can be loss-inhibiting procedures as well, but the author believes the technical approach seems to lend itself quite readily to such an application.

Technical analysis is applicable to all price trends that are founded upon a fairly efficient marketplace where buyers meet sellers in an auction process. As such, applications are not limited to only stocks and stock markets, domestic or international. Indeed, technical analysis can be profitably utilized lor bonds, or fixed-income markets, groups or sectors within the stock market, foreign stock markets, currencies and obviously not to be overlooked, commodities. In fact, there are probably more technical methods around today for the growing futures derivatives than any other application. The growth of the personal computer has led to a proliferation of technical software for both stocks and commodities, with the latter really possessing an inordinate number of packages, many sophisticated, but a good number not worth a small fraction of their cost.

Within the space of this chapter, we shall attempt to explore the more standard technical approaches as well as highlight some of the widely followed market indicators with a brief discourse on some persona] computer applications.

## BASIC TECHNICAL ASSUMPTIONS—NECESSARY LOGICAL THOUGHTS SUPPORTING THE APPROACH

Before embarking into any area of study there is usually a set of rules or assumptions that probably should first be explored. As previously mentioned, technical analysis is based upon the study of supply and demand, or the price movements within the general stock (or other) market's framework. It is what the movements themselves mean over the short to longer term, that the technician is concerned with, A well-rounded security analyst who utilizes all inputs available must be a very inquisitive person; he will always be anxious to know "why" a stock is moving up or down. And, in this regard, it has often been said that a good technician has to be an even better fundamentalist,

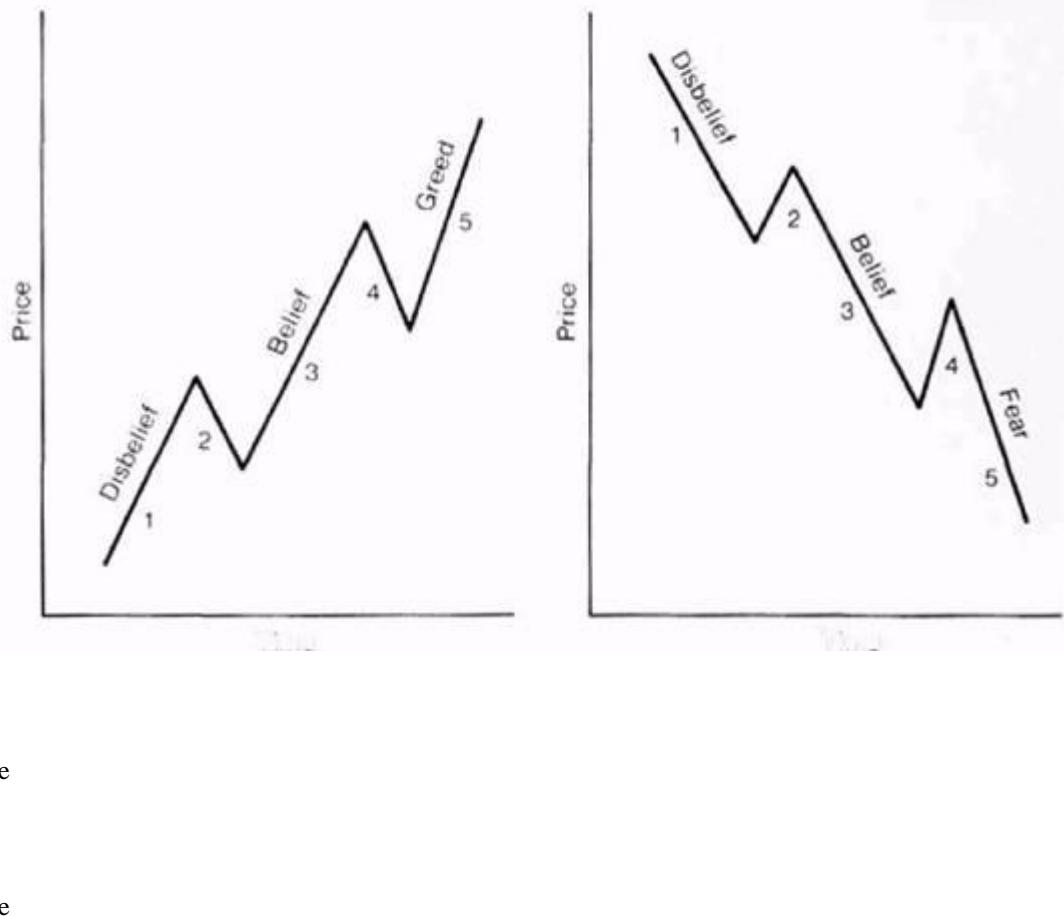
It is known that the stock market is one of a number of leading economic indicators as compiled by different sources. Although the market is, of course/ concerned with day-to-day business developments and worldwide news events, it is primarily concerned with future expectations, in this regard, the market is therefore looked at as more of a barometer than a thermometer. Specifically, it has not been uncommon to witness a stock rising in a viable uptrend when current news concerning the company is not all that positive. By the same token, one can witness a stock initiate a major downtrend while earnings are most favorable. To carry our thesis a step further, it would be most uncommon to witness a stock begin a major upside trend just before earnings start to deteriorate, The reverse oddity would occur if a stock commenced a major downtrend just before earnings began to show substantial recovery,

Let us review what we consider to be the three basic and necessary assumptions regarding technical analysis before we embark on the actual methods themselves.

Assumption 1. As said, the market and/or an individual stock acts like a barometer rather than a thermometer. Events are usually discounted in advance with movements likely the result of "informed"<sup>1</sup> buyers and sellers at work. We should never forget, as we explore the technical implications of market analysis, that the price formations or patterns (as they are called by some) that evolve due to supply/demand

Not to be confused with an insider.

**FIGURE 1** Major Trend References



behavior are, for the most part, the result of fundamentalists,, speculators, technicians, or whomever, pulling their money to work based upon their established convictions. The market is a discounting mechanism.

Market (and stock) trends tend to move to extremes in a psychological sense. On one end you have "greed," which is normally associated with a top (nobody left to buy), while on the other extreme you have "fear" (nobody left to sell),

One tech mail theory that we have supported concerns the "five-leg" pattern associated with a major trend, up or down. As the discounting mechanism matures, and more believers emerge to support a major (rend, eventually the above extremes are reached. Figure 1 attempts to portray the discounting scheme. At first, as the stock begins to climb, the advance is fraught with skeptics abounding. We call this the disbelief phase (Leg 1).

Profit taking develops (Leg 2), which in turn is followed by another upturn (Leg 3). By now future fundamental improvement "may be more widely accepted (function of stock price?). We call this the belief leg. Another correction occurs (Leg 4) which is then followed by the "everyone's-got-to-own-it" stage (greed—Leg 5). A major bear trend develops most often with the opposite psychological implications. The stock tops out when the fundamentals look good, and begins a serious break which is not recognized by most as a new bear

market (disbelief). After a brief rally, a renewed trend of deterioration commences, breaking the prior lows, and possibly accompanied by the first tangible signs of fundamental (earnings) deterioration (belief). After another interim rally, the stock breaks down again, instituting the fear syndrome (Leg 5).

Assumption 2. This assumption should not be too difficult to understand or accept as it deals with basic stock market dynamics or the law of supply and demand. First, we should define the terms that are used.

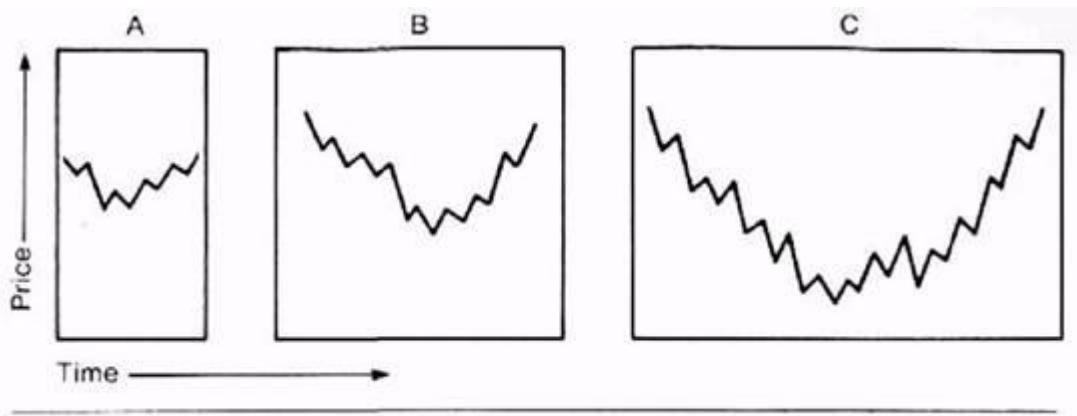
We know there is a buyer for every seller of stock. But one of these forces is usually stronger or more influential—especially in the long run. For instance, if 50,000 shares of stock were to change hands on a downtick trade, especially with a concession representing a large spread from the last sale, we would consider that the seller was a stronger influence than the buyer. For, if a buyer (or buyers) were all that anxious to purchase the stock, it would be logical to expect that the trade would have taken place with little or no concession of price at all. In periods of a more vibrant market atmosphere, a trade would, in all likelihood, occur on an uptick. A major concession in price on a large block trade is usually looked upon as evidence of distribution, and it can be a sign of the stock moving from strong to weak hands.

Accumulation by definition occurs when a stock moves from weak to strong hands or, more importantly when supply is diminished from the marketplace. Such a trade could take place on an uptick in price.

Our second assumption reads: Before a stock experiences a markup phase, whether it be minor or major, a period of accumulation usually will take place. Conversely, before a stock enters into a major or minor downtrend, a period of distribution usually will be the preliminary occurrence. Accumulation or distribution can occur within neutral trading trends. Accumulation is often referred to as the building of a "base" while a trend of distribution is also called a "top." Obviously, an uptrend in prices denotes on-balance buying, while a downtrend is indicative of extreme supply. The ability to analyze accumulation or distribution within neutral price patterns will be discussed later. Such analysis is a prime technical challenge. It can allow the technician to anticipate a move, rather than wait to react to a "breakout."

Assumption 3. This third assumption is tied into the first two discussed. It is an observation that can be readily made by any student willing to expend the time and effort. It deals with the scope and extent of market movements in relation to each other. As an example, in most cases, a short phase of stock price consolidation—or backing and filling—will be followed by a relative short-term movement, up or down, in the stock's price. On the other hand, a larger consolidation

FIGURE 2



phase can lead to a greater potential stock price move. Figure 2 should aid in the understanding of this assumption.

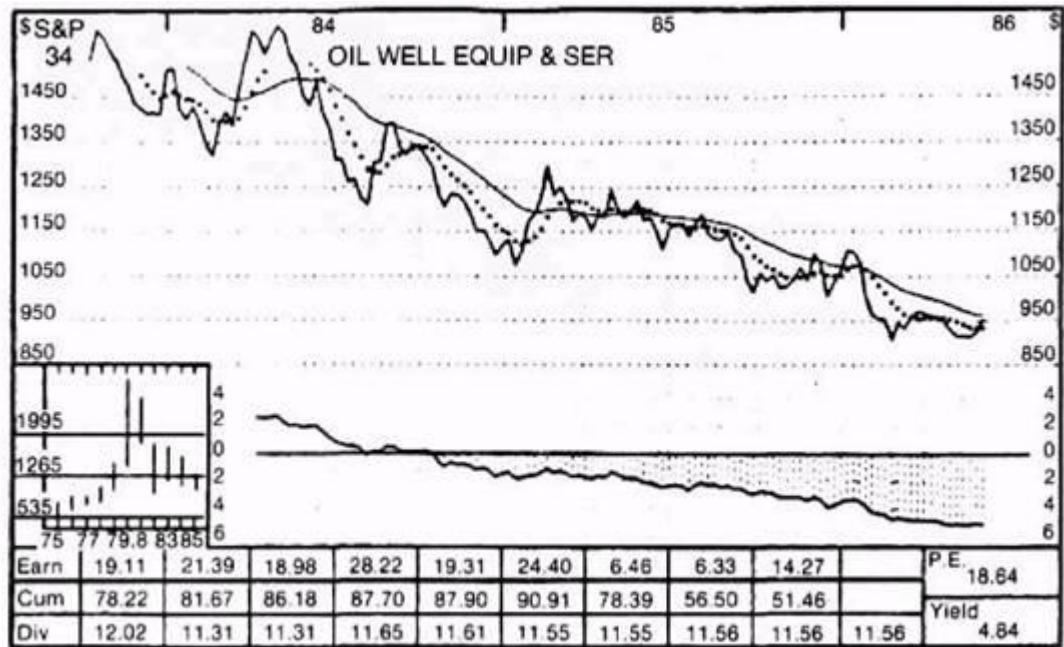
In Example A, the minor downward movement in price was followed by a short-term consolidation phase before the stock began to move up once again. In Example B, however, the downside adjustment was somewhat more severe than in the former case and thus the consolidation pattern was slightly longer in perspective. Example C is an extreme, reflecting a major downward trend. Simply stated, when the bulldozer, crane, steel ball, and wrecker visited this scene, it took longer for the masons, plumbers, carpenters, and electricians to accomplish their rebuilding process; the consolidation pattern was of longer duration.

Assumption 3 therefore states; Usually, movements in the market tend to have a relationship to each other.

These are the three basic assumptions. They are simple and we hope logical to understand. They provide the basis for many technical disciplines, some of which we shall now study.

### BASIC TECHNICAL METHODS—CHART UTILIZATION, TYPES, THEIR CONSTRUCTION, AND SERVICES AVAILABLE

Despite the growth of a number of mechanical and/or automated stock market techniques, the basic tool of most technically oriented market students is still the chart. The growth of personal computer use, along with packaged software programs, has led to a more automated approach, but charts are still very often hand drawn. Through the years, three basic types of charting techniques have been developed with perhaps one, the bar graph, enjoying greater popularity.



SOURCE: Mansfield Stock Chart Service.

## Basic Chart Types

The three standard types of charts are the line, bar, and point and figure. In each case the type of chart chosen to record price activity is determined by the amount of information available, and the purpose of the study,

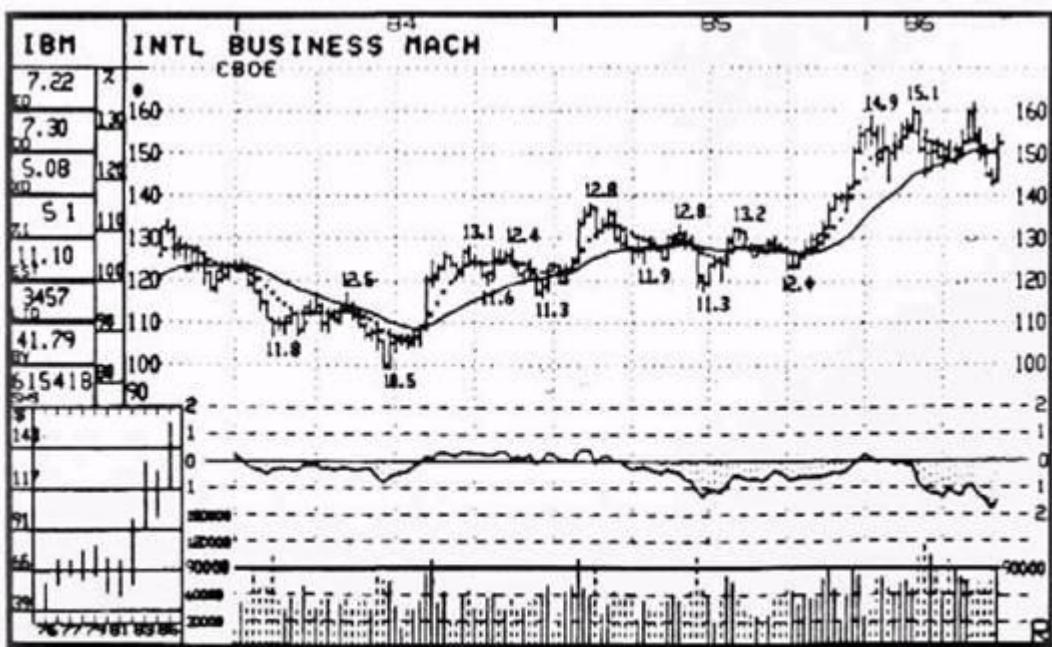
A line chart, as illustrated in Figure 3, is used to denote the trend of a statistic. As an example, the daily closing price of a stock; a weekly group statistic; or a monthly economic figure would most often be plotted on a line chart basis. Figure 3 illustrates a group statistic plotted weekly. In addition, the illustration also contains moving averages (running through the price curve), as well as a relative strength line denoted at the graph's bottom.

The bar chart is the most commonly used technical tool. It is simple to construct as it portrays the high, low, and closing prices of a particular stock or stock market average, for a particular time period chosen. In the latter regard, bar charts are kept either on a daily, weekly, or monthly basis. The type of bar chart will, of course, be predicated upon the time horizon of the investor. The short-term trader would most likely find the daily bar chart of help while the longer-term investor would most likely utilize the weekly or monthly bar chart. In addition to price action, a bar chart also contains a volume histogram (see Figure 4), especially the daily and weekly varieties. Most often the monthly bar chart simply reveals price action. The daily and weekly commercial chart services



DAILY BAR CHART

SOURCE: Charts courtesy: Daily Graphs, P.O. Box 24933, Los Angeles, CA 90024. (213) 820-7011.



## WEEKLY BAR CHART

SOURCE: Mansfield Stock Chart Service.



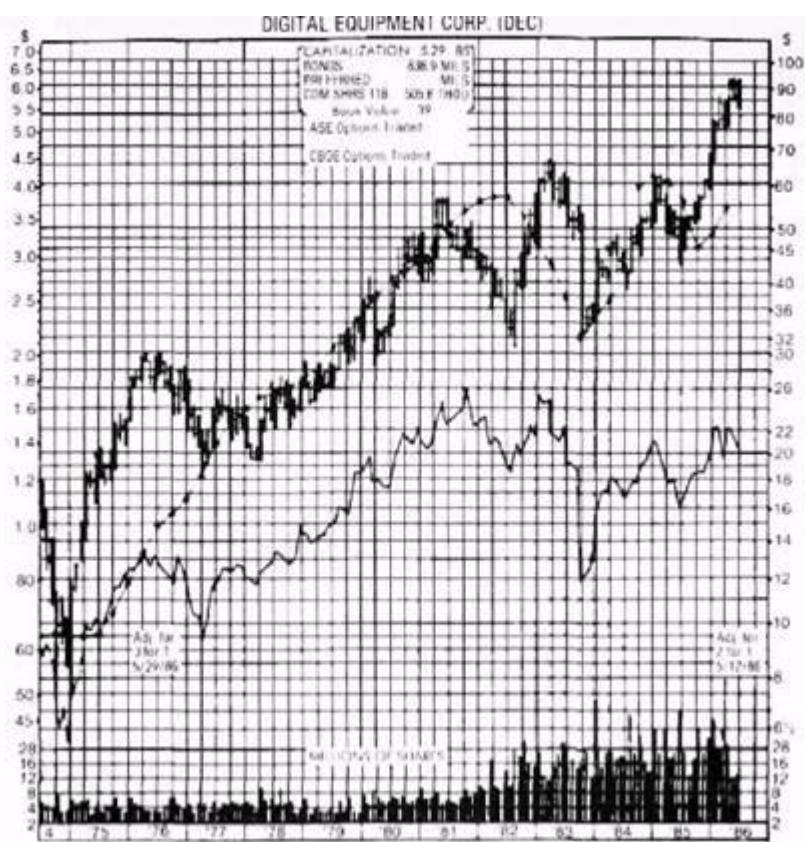
**MONTHLY BAR CHART**

SOURCE: M.C. Horsey & Co., Inc., Salisbury, MD 21801.

illustrated also include moving averages and relative strength plots (discussed later).

The two types of charting techniques reviewed above can be portrayed on graph paper utilizing one of two types of scales—the arithmetic or semilog delineation. Again, the utilization of the type of scale depends greatly upon the desires of the chartist. There are those who wish to analyze stock price movements on a percentage basis and therefore their graphs would be kept on a semilog basis. Long-term trend analysis is often more useful on a semiJog (geometrical) price scale. On the other hand, simple short-term trend analysis, or stock price movement in terms of points rather than percentages, is desired by others. Thus, for them, a straight arithmetic scale suffices. Figure 5 illustrates a bar chart plotted with a semilog scale and an arithmetic scale for about the same time period. There are positive and negative factors for each approach, most often hinging on the price level of the stock and the amount of price history under study.

The point and figure method represents the third technique. To many, the point and figure approach is a bit more mysterious, and indeed to some, the mastering of the technique of maintaining a point and figure (P&F) chart is a cumbersome chore. Unlike the bar chart, the basic difference in a point and figure graph is that there is no element of time, and therefore no distinct depiction of volume trends. But, it can be argued that volume to a certain degree is incorporated in a point and figure chart in a relative sense. On a P&F graph one does not put in a figure (the use of an :t is most commonly practiced) until the stock moves up or down one full point or more (thus the name). Therefore, it stands to reason that more figures will be plotted for an active stock than for an



#### SEMILOG MONTHLY BAR CHART

SOURCE: Securities Research Company, A Division of United Business Service Company,  
208 Newbury Street, Boston, MA 02116.



#### ARITHMETIC MONTHLY BAR CHART

SOURCE: M. C. Horsey & Company., Inc., Salisbury, MD 21801.

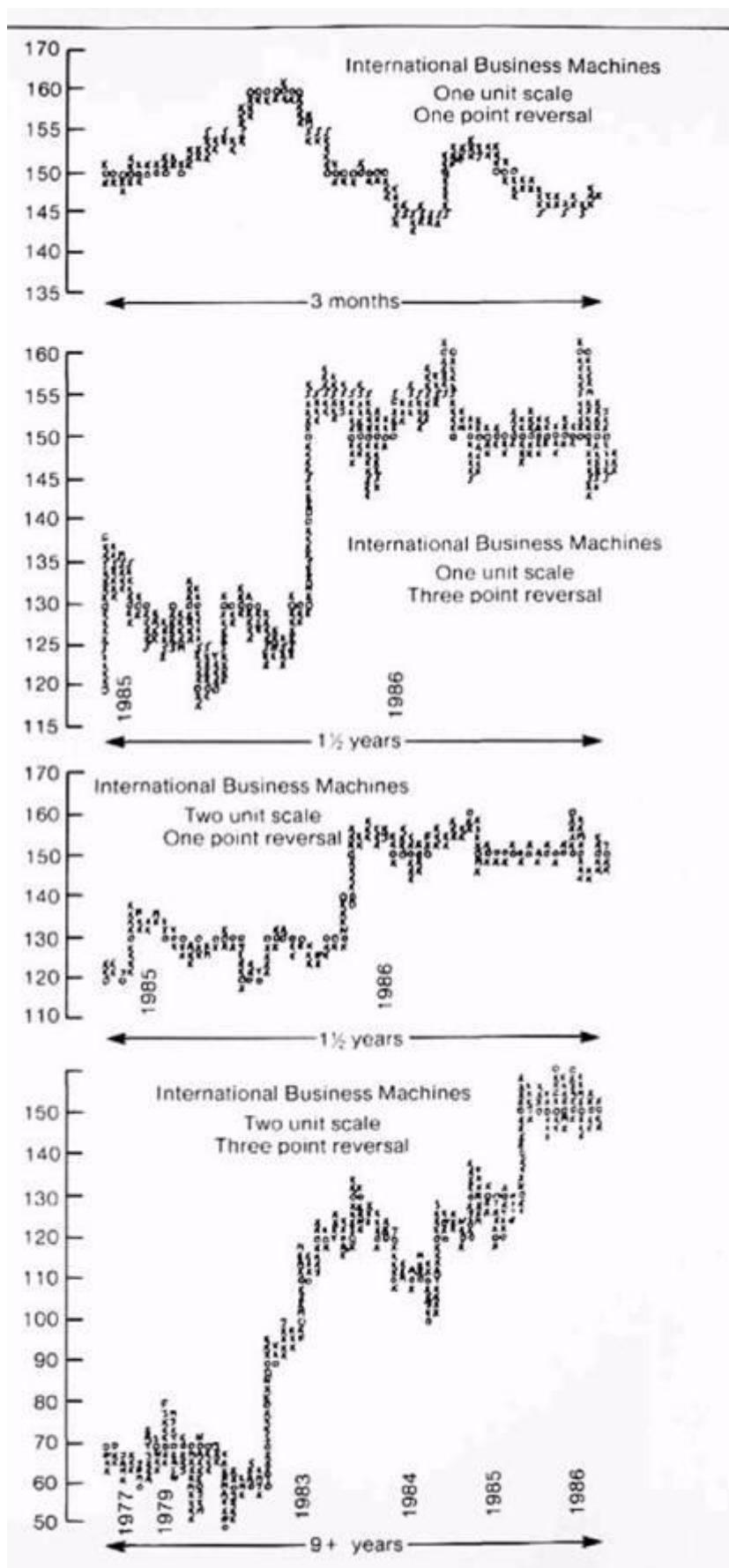


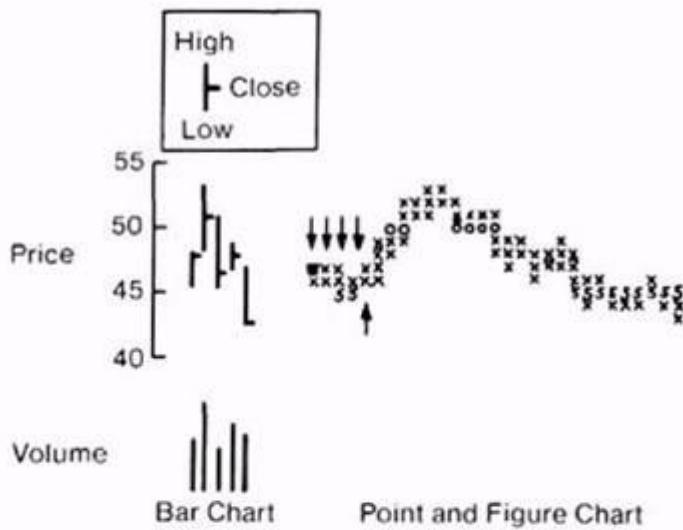
inactive one; volume will create price reversals. Remembering that a plot is only made when a full-point movement is experienced, the next factor to keep in mind is that each column on a point and figure chart must represent a trend or a direction in price. Remembering these two inputs should add greatly in the understanding of point and figure chart construction,

Like the bar chart, there are a number of different types of point and figure graphs utilized—again, depending upon the investor's time horizon or investment philosophy. The one-point reversal, which as mentioned, illustrates movements of one point or more in each direction, is the most popular point and figure approach. But, if a more intermediate to longer-term trend analysis of a particular equity is desired, no doubt a three-point or five-point reversal chart will be utilized. In the latter two cases, each column on the graph illustrates movements of a minimum of three or five points in each direction/ respectively. In some cases, to further facilitate longer-term stock price movement analysis, point and figure charts are kept on a unit basis. Put simply, a reversal chart of more than one point, such as a three- or five-point reversal/ condenses the horizontal axis of the graph, while the use of a unit scale reduces the vertical axis. A chart on a stock like IBM would, no doubt, also be kept on three- or five-point reversals, as well as on a unit basis. In fact, a combination of all can be utilized. Versatility is a great asset of the P&F approach, Figure 6 illustrates the IBM example. We have highlighted the time factor on each graph within the same designated space.

Let us be more specific regarding the construction technique for a point and figure graph. Whereas a bar chart depicts a daily, weekly, or monthly specific price range, a point and figure chart illustrates trades only as they occur, and in their sequence. Figure 7 provides a theoretical illustration of a week's price movement in a particular stock. The first set of statistics indicates the initial day's opening (O), high (H), low (L), and close (C), with an accompanying illustration showing how these statistics would be produced on a daily bar chart. Volume is added below. The second set of statistics, however, actually shows the sequence of trades with the fractions eliminated from each day's stock price movement. Or, put another way, the second set of data outline each day's high and low differential, but with a sense of the in today trend.

To construct a point and figure chart, a starting point must be realized. This is illustrated by the darkened square at the price of 47. Monday's trading reveals that the first full one-point move occurred as a decline to 46, before an intraday move up to 47. Remembering that each column on a point and figure chart must represent a "trend," it is therefore mandatory that column 1 cannot contain one "fill-in" by itself. Thus, to start our chart, the first x is placed at the 46 line representing Monday's first full-point move. Because the column now contains a





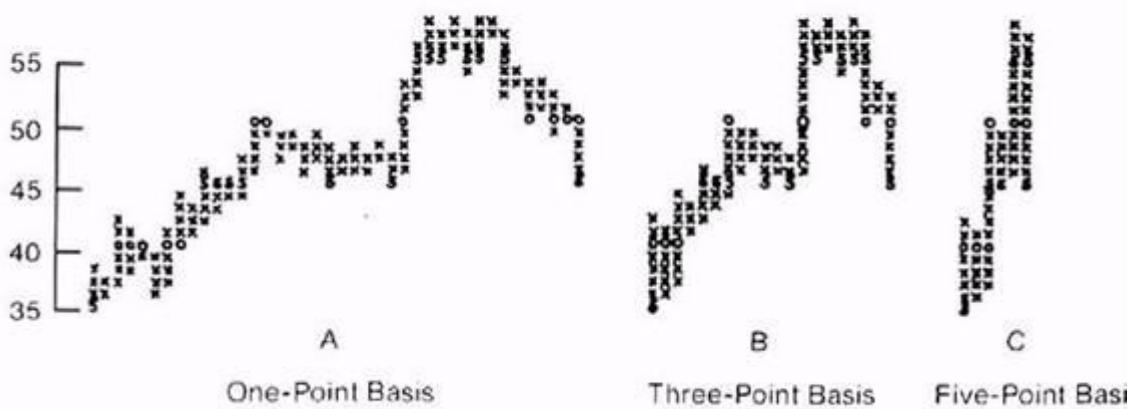
Price Changes	O	H	L	C	Change	C	Intraday Trading Prices
Last fill-in 47							
Monday.....	46%	48½	45	48½	+2½	46-7-6-7-5-6-5-7-6-8	
Tuesday.....	48%	53%	48%	51½	+3	49-8-50-49-52-1-2-1-3-2-3-1	
Wednesday.....	50	51½	45%	47	-4½	50-1-0-1-0-148-9-7-9-6-7	
Thursday.....	47%	49½	47	48%	+1%	48-7-9-8	
Friday.....	47%	47%	43	43	-5%	45-6-4-6-4-5-4-5-4-6-4-5-3	

movement in sequence from 47 to 46, it can be classified as a "down" column (see arrow). This means that from this point on, if there were never to be an up move of one point or more over a period of one day, week, two weeks, and so on, we would continuously plot the down moves of the stock in the first column of the grid. However, we note that following the initial 46 entry, the stock divs move up to 47. Therefore, to record the 47 price, we must move one column to the right, up one box, and place an x in the 47 slot. The next intraday move is back down to a full number price of 46, thus we move a box below the last 47 fill-in as, once again, the chart cannot have a "trend less" column. Completing this maneuver, we would now have two down columns in succession. According to the statistics, we note that the next reversal is back up to 47. Thus, we move a column to the right and repeat the procedure to record the 47 move. The next illustrated trade again reveals some intraday pressure taking the stock to the low of the day or a price of 45. To record this movement and reach the 45 level, an x must be placed in the 46 box, and then a fill-in is made at 45, (Note: On the 45 line, instead

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**FIGURE 8**

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of an .v, I he digit 5 is used. Similarly, with prices ending in a zero, o 0 is used. The use of fives and zeros simply helps break up the monotony of a concentrated group of ,vs and makes the "chart reading" easier.

From 45, the stock rallies briefly to 46 before once again reacting to 45. This sequence of reversals is plotted next. Then a strong rally to 47 occurs. In order to move to 47, from the last fill-in at 45, a fill-in is required in the 46 slot (There is no such thing as a "gap" on a [>&F chart.) As you will note, this is the first up column we have recorded in the brief pattern. From 47, a reaction to 46 takes place necessitating a move to the next column and down one box. The stock then closes on a firm note necessitating fill-ins to 48. As the first line of the statistic indicates, the close was actually 48<sup>1</sup>A, but a full number 48 was the last reversal we will plot on the point and figure graph. Only if the stock had managed to reach 49 would an extra box have been added to the chart. The reader can study the following days' price reversals and how they are plotted on the graph. It is advisable for those who wish to pursue the construction technique in greater detail to make a practice example using the price reversals as set forth and then compare their chart to the one illustrated in final form in Figure 7,

As mentioned earlier, the one-point reversal chart is the most commonly kept point and figure graph. But, if one wishes to condense the one-point chart so that a longer-term analysis can be accomplished, the three-point reversal or five-point reversal approach is advised. The three-point reversal, as the title indicates, simply reveals all movements of three points or more in each direction and eliminates the minor fluctuations. Figure 8A is a one-point chart arid has been condensed in Figure 8B to a three-point basis. A close study of the chart will reveal the technique described. The five-point reversal chart is shown in Figure 8C, and illustrates an even greater condensation of the original one-point

chart. It is obvious, that a three- or five-point reversal chart will only be necessary if many columns of price reversals on a one-point graph are to be condensed. Some astute short-term traders maintain their point and figure charts on a half-point basis. This necessitates a lot more work and is probably only useful for stocks selling at very low quotes.

Because it is necessary to maintain a point and figure chart with accurate statistics, and because the point and figure chart does reveal intraday movements in their sequence of trading, a newspaper will not normally suffice as a source of data. This is especially true regarding higher priced stocks where intraday price reversals can be quite numerous. Some point and figure chartists used to maintain their P&F graphs by utilizing the "Fitch Sheets," a service published by Francis Emery Fitch and most often found in the back office section of brokerage firms. The service included the daily price movements, in their sequence, for all listed stocks from the opening to the close. Students interested in maintaining their own point and figure charts can secure a service, "The MFS Report," published by Mellon Financial Services. This outfit publishes a computerized price change service designed specifically for point and figure chartists. The computer eliminates fractions and, supplies daily price reversals in alphabetical order by symbol (see Figure 9).

A common query is, "Well, what type of chart should I maintain?" Or, "Why a bar chart instead of a point and figure chart?" These art-questions difficult to answer because the investment objectives of the different practitioners must first be understood. Bar charts have certain advantages over point and figure charts. They are often favored by short-term traders. On the other hand, point and figure charts have a certain advantage over bar charts, particularly on an intermediate to longer-term basis. Ideally, both approaches should be used hand in hand when analyzing any particular stock. In the discussion that follows, perhaps the reader can distinguish the advantages most pertinent to his needs. Figure 10 lists a number of the more popular commercial technical chart services that may be purchased for both the bar and point and figure approaches. As noted/ many of the commercial services also contain studies on general stock market indicators, group profiles, and so on.

## BASIC TECHNICAL METHODS (CONTINUED)—ANALYSIS OF SUPPORT AND SUPPLY LEVELS

One of the most important aspects of technical analysis, the type of chart technique notwithstanding, involves the judgment of so-called support and resistance levels. Schematics are shown in Figure 11. Often one reads about a stock that is selling, let us say, at 36, having support at

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APP	77	BLL	37	CAS	78	DEC	110	BEN	37
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ALX	42	BBF	34	CB	63	DJ	41	COV	19
AT	41	BAX	21	CC	31	DSL	22	GO	73
AT	42	RAY	27	CIR	19	DRY	33	GRL	20
AT	41	BGC	24	CLE	10	DRY	34	GIS	46
AT	42	BI	22	CGP	38	DUK	48	GRX	17
AMR	45	BLC	52	CGP	19	DNR	111	GSX	46
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AC	88	BMS	33	PHM	53	DNS	111	GRN	60
ACA	23	BMS	32	CSP	33	DO	89	GP	40
ACY	51	B5	08	CSP	32	EST	32	GFB	42
ACP	29	RIP	26	CDO	17	EPI	30	GRB	19
AKP	61	BA	52	CWE	36	EFU	29	GTY	22
AFL	28	BA	51	CFS	41	ETN	77	GOT	21
AGC.HS	12	BGS	65	CNY	32	EBS	35	GRA	51
AHP	79	BBN	43	CPQ	21	AGE	29	GRA	52
AIT	137	BBN	44	CPQ	22	EME	11	GNN	70
AIG	63	BDS	15	CA	29	EGN	21	GNT	25
AIG	66	BSE	27	CA	30	ENF	41	G	33
AIG	64	BHY	85	CTG	21	ESC	19	GFD	26
AIG	65	BTY	32	CNC	13	FFG	08	GW	66
AST	44	BRE	23	CIC	48	ESB	33	GW	67
ASC	58	BG	37	CTB	27	FEN	12	GW	66
ASC	57	BNS	21	GLW	57	FCI	09	HAL	26
AWK	43	BUR	43	CBL	35	FFF	42	JHI	25
AHR	11	BNI	59	CBL	34	FHO	42	HBJ	29
ADD	23	BNI	58	CYR	86	FNM	42	HSC	27
APC	21	BDC	14	CYR	87	FNM	41	HMX	29
BUD	28	CBS	135	CYR	86	FBO	30	HMX	28
ARS	19	CBS	136	CUM	69	FDS	87	HPC	53
ACK	31	CBS	135	CW	55	FDS	88	HPC	55
ARM	15	CAF	56	DMH	15	FIN	09	HPC	54
ATA	27	CIM	44	DHR	14	FIR	28	HST	26
ASH	58	CIW	12	DAT	30	FBS	27	HLT	70
ARC	62	CPR	59	DAY	31	FNB	31	HIT	68
AUG	17	CCB	276	DH	44	I	56	HIA	72
AUG	18	CCB	275	DF	29	FVR	30	HIA	73
AUS	20	CCB	276	DE	24	FW	39	HLY	101
AUD	37	CCB	275	DAL	50	FLE	27	HLY	100
AUD	38	CCB	276	DLX	39	FLA	48	HLY	101
AVE	29	CPH	34	DLX	38	F	61	HMC	85

SOURCE: The Mellon Financial Services, "The MFS Report," January 6, 1987.

**FIGURE 10**

Averages, a; Groups, b; Indicators, c		
<i>Publisher and Location</i>		
Charcraft, Inc. Larchmont, N.Y.	P&F—monthly x3	NYSE AMEX OTC Options
	P&F—quarterly x3	NYSE AMEX Options
	P&F—weekly x3	NYSE AMEX Options
		a
		a
		a
<i>Service</i>	<i>Type</i>	<i>Markets</i>
Charcraft	P&F—monthly x3	NYSE AMEX OTC Options
	P&F—quarterly x3	NYSE AMEX Options
	P&F—weekly x3	NYSE AMEX Options
		a,b,c
Market Charts	P&F x1,x3	AMEX NYSE
Cycli-Graphs Security Charts	Bar—monthly Bar—weekly Bar—35 year (Semi-log)	AMEX NYSE
Daily Graphs	Bar—daily (Arithmetical)	AMEX NYSE
Horsey—The Stock Picture 25-Year Picture	Bar—monthly (Arithmetical)	NYSE, AMEX (1900 stock total)
Mansfield	Bar—weekly (Arithmetic)	AMEX, NYSE, OTC
Trendline	Bar—daily (Arithmetical)	NYSE AMEX (Total 728 stocks)
		a,c
		a,b
		a,b,c
		a,b



**FIGURE 11**



have been fairly equal. Ultimately the stock will break out of this consolidation pattern in either an upward or downward direction. If the direction is upward, thus indicating a surge of demand, a distinctive clue would be given that the on-balance activity that most likely occurred during the consolidation phase was accumulation rather than distribution (review Assumption 2). Let us assume you made a commitment in the stock in the 26-30 zone prior to the upside breakout.

Often, an investment "story" is not bought by all on the first go-round. Some extra convincing is necessary. Such convincing can be accomplished by the mere price performance of the stock itself. In our illustration, the stock has just moved up in price as profiled by the breakout from the consolidation phase. Let us assume that some adverse external news comes to the fore, and the stock experiences some minor selling pressure, falling back to the area of the original price consolidation. Chances are quite good that those who purchased shares initially would not now be sellers of the stock. In fact, they may even be inclined to buy more. And, of added importance, investors who did not purchase the shares initially may now seize upon this second opportunity to make a commitment. The motivations just discussed are primarily predicated upon (1) the recent price activity in the stock, during which it was just selling at a higher price after breaking out of the consolidation trend and (2) a feeling of confidence, to a degree based on this price action, that the stock will eventually resume its upward trend. It is mainly because of these psychological factors that market analysts would anticipate that the stock in question should find support between 26 and 30. At least initially, there is a good chance of the stock bouncing back up.

Thus, by definition, a support level is a phase of price consolidation—or congestion—below the current quotation of a stock. Utilizing Assumption 3 for a minute, the extent of the lateral consolidation often has a bearing on the validity of the support. Minor consolidation suggests a minor support level, where a more elongated congestion zone would suggest major support.

It should now be simple to explain resistance (or supply). Let us say your investment made between 26-30 turns out to have been an error in

judgment. Instead of the stock moving up, it breaks down out of the congestion pattern, reaching a level of 20. Mass psychology now begins to work quite differently. Rather than taking the opportunity to buy more shares at the current cheaper price, many investors will simply bemoan their mistake and hope for a chance to break even. This psychological behavior suggests that on any strength back into the overhead consolidation area, the stock will meet supply, or sellers will dominate. Whereas in the first example you did not buy the stock to break even, in the latter case you are hoping that a break-even position can be attained. Thus, by definition, a resistance zone is an area of price activity above a stock's current quotation. The influence of the resistance may well depend upon the duration of the consolidation pattern.

Support and supply levels in individual stocks are real, as people are actively buying and selling the specific equities. But, it is important to recognize that when talking about support and supply levels for market averages, they are more psychological than real; one does not buy and sell the averages directly. Furthermore, using the Dow Jones Industrial Average as an example, when the Dow was "first" at 1100 (before moving to 1300), the prices of its 30 stocks were more or less quite different than the "second" time the Dow came back to "support" at 1100.

Knowing the type of security being analyzed also aids in deciding the extent of support or supply validity. Digital Equipment possesses different market characteristics than American Telephone. Where one issue may attract trading money, the other may enjoy a greater "investment" stature. Thus, if we were analyzing a supply area of three previous years for both stocks, our respect for the Telephone configuration might be much greater than for Digital.

## Trend Analysis

Many users of technical analysis do not wish to get too involved in all the possible applications. In fact, they could use their market charts as nothing more than a road map is used to travel across the country. Trend analysis of stock price movements, as an example, aids the investor to at least examine where on the route he will be making a commitment. The simple observation of a stock's chart can reveal to the portfolio manager the precise point in trend where a particular issue is currently being recommended. The stock may have already moved up in price from \$30 to \$85 per share. He can therefore ask an analyst making a presentation, "Where have you been with your story before visiting me?" And perhaps, more importantly, he may add, "Where do you still have to go when you leave here?" The portfolio manager's observation of the chart pattern reveals the stock's price performance and certainly

indicates that he is not the first to hear the bullish tale and, more importantly, he had better not be the last.

As simple as it is, a trendline can be a powerful technical tool to the novice and professional alike. "The trend is your friend," is the positive cliche to the old "Don't fight the trend" slogan. Trendlines give guidance to the short-term trader and the investor. The trader can use trend progressions for the establishment of "stop-loss" disciplines while the investor can "let his profits run" using the elementary trendline approach. Trendlines can also keep the "bottom fisher" from entering too early and getting caught in the final declining phase (often the most dramatic) of the given stock's bear market. A stock can't go up until it stops going down, and the breaking of down trendlines will be the first clue that negative momentum is waning.

Stock (and market) trends often tend to accelerate at or near the end of a move. On the upside, the acceleration of demand can be likened to the "everyone's got to own 'em" stage. On the downside, the familiar climactic "washout" occurs. These respective trends we also refer to as the greed and fear stages.

It should be remembered that the mere violation of a trendline is not the sole reason a technician becomes concerned. It's the implied change in the supply/demand trend behind the shift that is meaningful. An uptrend, by definition, is a series of higher lows followed by higher highs, in that sequence. A downtrend is, of course, the opposite progression. Sticking with the uptrend, let's more fully define the higher low, higher high progression in terms of supply/demand. Who creates the higher low? The higher high?

It is simple logic that a buyer, or demand, is the force creating the higher lows in an uptrend. And the persistence of demand, over time, is what creates the higher K>w pattern. On the supply side, the seller(s) is actually profiling a bullish bent. How? Because he is selling at progressively higher levels. So, an uptrend is not just a series of higher lows and higher highs but actually the portrayal, over time, of bullish signs of demand and supply. Once these forces begin to change their style (for whatever reason), the technician will be alerted by trend violations. Uptrend violations will most often be spotted by the demand factor first giving a clue of change. The higher lows will not follow through. Then the technician will look for signs of a change in the supply side, which will manifest itself by a change in the progression of the higher highs. Lower highs, followed by lower lows, will be the complete evidence of a trend change from positive to negative. We cover this a bit more later.

Figure 12 contains six charts from the long-term, monthly Sectirittes Research Cycli-Graph. Technical theory suggests that semilog scales are quite helpful for long-term trend analysis. These charts would seem to support that view. Armco's major trend is still negative, but you can

note the intermediate-term trends that developed within the longer-term progression. The chart of Great Western Financial continues to display positive supply/demand characteristics while Marion Laboratories certainly exemplifies "the trend is your friend" at work. Note, however, that Marion uptrends are developing a more accelerated profile, thus possibly indicating the stock may be nearing an "exhaustion" phase. The trader would be more conscious of the Marion uptrend in place since late 1985 while the investor, immediate or long term, may place more emphasis on the longer-term uptrends back to 1984 or 1981. Morse Shoe displays "fanning" tendencies and the last two rallies halted under the price uptrend—not necessarily a long-term positive. Diebold terminated a major uptrend in early 1984, then violated "support" at roughly 46, and currently profiles a negative trend progression. Smith International is the mirror image of Marion Laboratories. Smith represents a good example of the hazards of "bottom fishing" over the past four years. As the stock approached "ultimate support," a climactic decline was experienced.

We try to remember that stocks often look "expensive" in bull markets, yet they can continue to climb. Stocks often look "cheap" in major bear trends, and they can get "cheaper." Trend analysis, while very simple, provides an important discipline for "letting profits run," and "cutting losses short,"

## Moving Averages

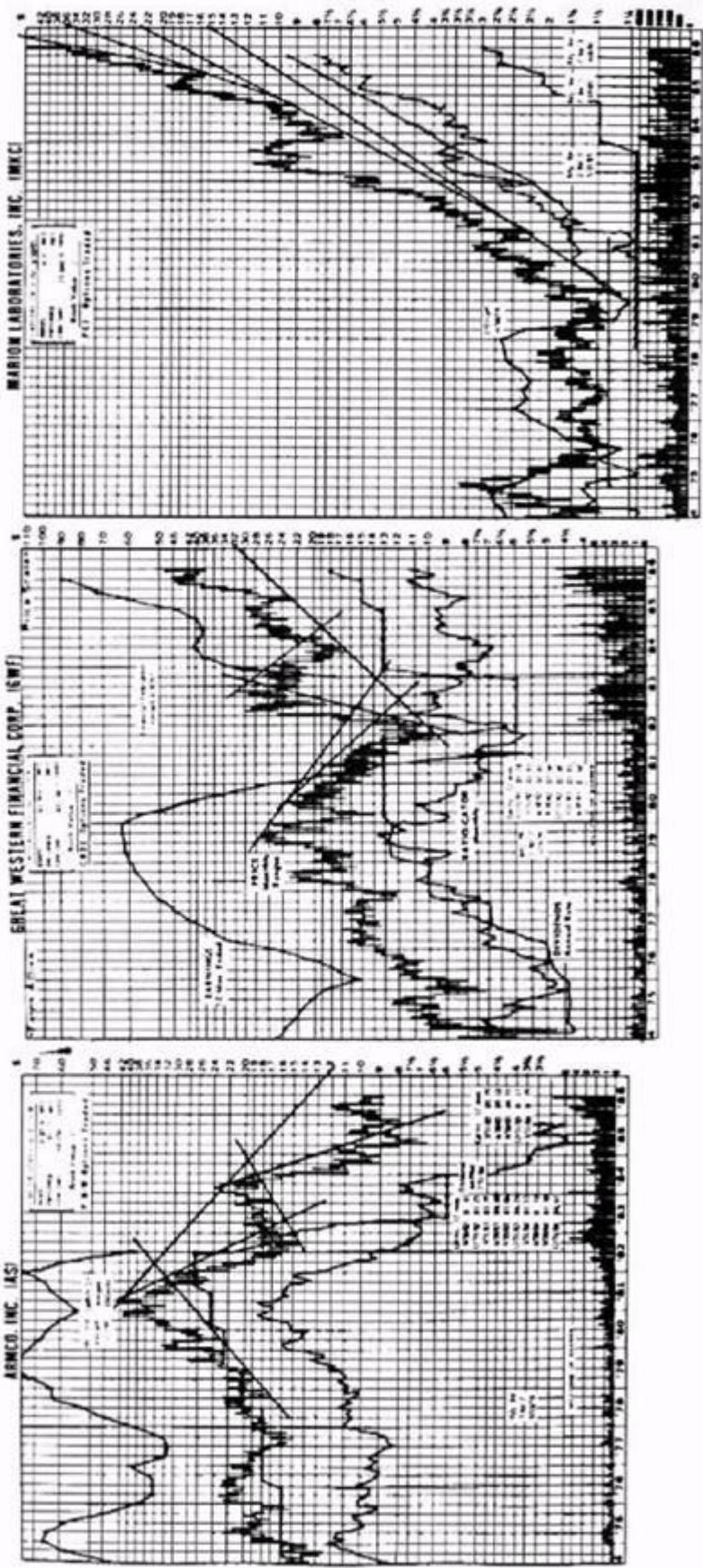
In addition to the above-stated approach to trend analysis, market students also may follow moving averages of a stock's price trend. A moving average is really a mathematical trendline. Moving averages can be calculated for different time periods such as a 10-day moving average for the short term, a 50-day moving average for the intermediate term, or a 200-day moving average for longer-term analysis.

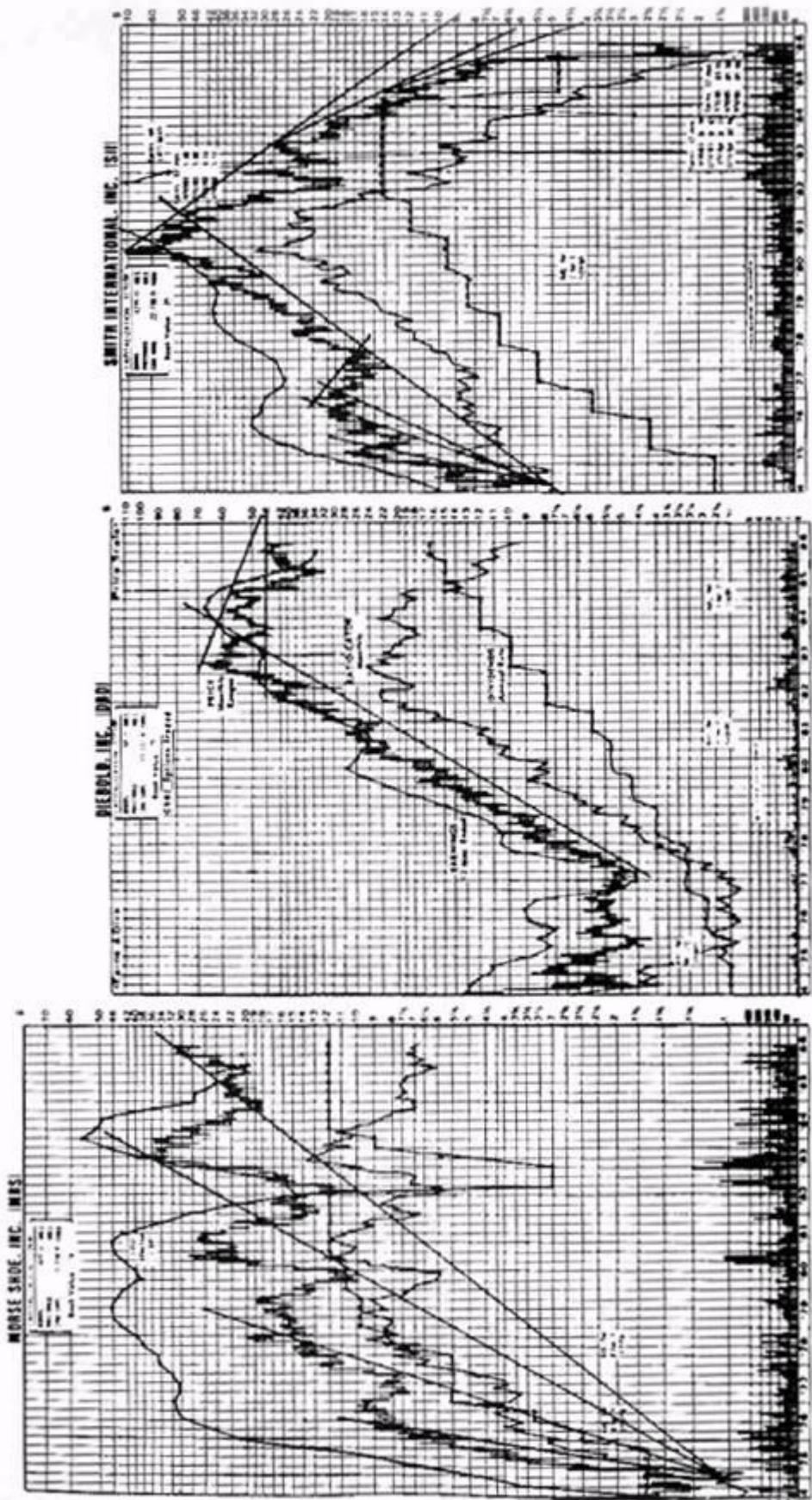
There are three types of moving averages used by technicians. These are: (1) simple; (2) weighted; and (3) exponential. A simple moving average is calculated merely by adding the closing prices of the number of days under question and dividing by the number of days. A 200-day moving average would be the sum of the closes for the previous 200 market days divided by 200. The simple moving average treats all the entries equally.

The weighted and exponential moving averages will place more emphasis on the more recent price activity. Many market students take the time (or use their computers) to calculate the weighted or exponential varieties as they feel the more recent price action is indeed more important than the price of 25, 50, or 200 days ago.

The weighted moving average is really simple to calculate, but time consuming. For a 10-day weighted moving average, we would take the

**FIGURE 12**





SOURCE: Securities Research Company, A Division of United Business Service Company, 208 Newbury St., Boston, Mass. 02116.



current day and multiply the price times 10, the day before times 9, the day before times 8, and so on. The final number is then divided by the sum of the multipliers for the 10-day period which would be x divided by 55.

The exponential moving average (EMA) which is akin to the weighted version, is even more simple to calculate in that only two numbers are used in a daily calculation, today's price and the prior day's EMA are utilized. A "smoothing constant" is first determined to use in each day's calculation, Simply defined, divide the number 2 by 1 plus the number of days you wish to smooth. For a 10-day EMA—2 is divided by in + 1 (11) and equals 0.18, which is the smoothing constant. The constant is multiplied by each day's closing price of the stock minus the prior day's EMA, and then added to the prior day's EMA to result in the new EMA.

Because of its computation, a moving average will always Ing stock price movement. The movement at a stock below an up trending moving average is considered to be a sign of impending weakness. More important is that as the moving average itself flattens out and begins to trend down, it often will confirm that a shift in the basic trend in the stock has occurred.

While most of the popular commercial chart services carry 50- or 200-day simple moving averages, it's fairly obvious that a constant moving average is probably not applicable to each and every stock. Individual equities have their own particular market characteristics or volatility factors that should dictate different moving average time periods to track their individual trends. New computer software allows the technician to optimize or find the most applicable moving average for individual stocks and/or market averages,

## Relative Strength

One of the oldest approaches of technical analysis, and still one of the most widely used is relative strength. As the term signifies, action of a stock or a group of stocks is often compared to the market as a whole, so that it can be determined whether or not the stock is acting better than or worse than the market.

Making money in a bull market is not a difficult task. If the general trend is up, we agree that a "dart" thrown at the stock table should result in the "choice" of a winner. In these days of competitive performance on the professional level, relative performance has taken on an even more important aspect. Professional portfolio managers must show the ability to outperform the market or else funds can be invested in an "index fund" that is guaranteed to emulate the market with little or no management fee. Such "passive" portfolio management has grown extensively in recent years for at least a portion of pension

assets. Some academic studies have supported a difficulty in outperforming the market on a consistent basis.

Technicians often apply relative strength analysis first to the market's groups, believing that a strong group is a prerequisite to picking a strong stock. Our research supports this view. While one can, of course, pick a good-acting stock from a broad relative strength stock screen, it's a lot easier if the tide of the group's behavior is supportive.

Many different mathematical computations may be used to calculate relative strength, but the simplest (and most common) is when the daily (or weekly) close of a stock (or group) is divided by a market average or index, most often the S&P 500. The result can be related to a specific time period to result in a ratio. If this ratio moves up or down over a period of time, it will indicate whether or not the stock is acting better than or worse than the general market trend. A stock that is moving laterally while the market is trending lower will possess a strong relative strength curve. A stock that is moving laterally as the market moves laterally will possess flat relative strength, indicating that the issue is acting in line with the general market trend.

Relative strength is an important technical tool but must be used properly. As an example, it should be noted that, without utilizing any other technical discipline, one could find a stock "topping" out while maintaining a strong relative strength curve—or it could bottom out while relative strength appears poor. Thus, it is inadvisable to utilize relative strength as a sole technical tool.

Many times the technician will use relative strength to determine future market leadership, or the pending loss of same. Groups that act well in the tail end of a bear market, often emerge as the new bull market's leaders. Leaders in a bull market may show signs of losing that status if relative strength "divergence" begins to profile a mature trend. Simply said, if the absolute price index of a group goes on to make a bull trend high without the relative numbers confirming, a change in the group's trend may not be far off.

## TECHNICAL ANALYSIS OF INDIVIDUAL STOCKS

### Bar Chart Analysis

At this stage we will briefly explain some of the basic tenets of technical analysis, now that the construction of charts and some of the routine technical methodologies have been reviewed. In particular, the ability to distinguish major trend reversals in a stock's performance is important. It is in this regard that a great deal of the mystery regarding technical analysis comes to the fore. Perhaps the terminology itself is at fault. Our purpose is to be brief and not to get too deeply involved in semantics or esoteric technical definitions.

One of the common reversal patterns that occurs on the different charts of stock price movement is called a head and shoulders configuration. We suppose that some observer came up with this descriptive name many decades ago simply because the pattern does profile those parts of the human anatomy for which it is named. The head and shoulders reversal pattern is really nothing more than the indication of a stock moving from an uptrend to a downtrend, or vice versa (see Figure 13).

While observing such a reversal phase, it is important to note volume trends. As an example, if a head and shoulders top is being formed, volume on each of the rally phases within the top formation usually decreases. On the other hand, if it is a head and shoulders bottom that is being observed, volume should show an increase on each of the rally phases within the reversal pattern. The completion of a head and shoulders top or bottom is not considered final until the penetration of a so-called neckline. In a top formation, this neckline is really nothing more than a support line. Put another way, the penetration of such a support line usually coincides with the initiation of the new trend; it will represent a new reaction low.

Variations of the above-mentioned reversal formations are great in number. The so-called double and triple top and bottom classifications are but two (see Figure 14).

Often, stocks may also display very unusual price and/or volume activity while coming to a peak or a trough in their major trends. Such action may be followed by consolidation at either a lower (in the case of a top) or higher (in the case of a bottom) trading range than where the extreme high or low level was first registered. Many times, such unusual price and/or volume action is caused by external news coming to the fore, and the trend in force is accentuated and an extreme level in stock prices is at least temporarily reached.

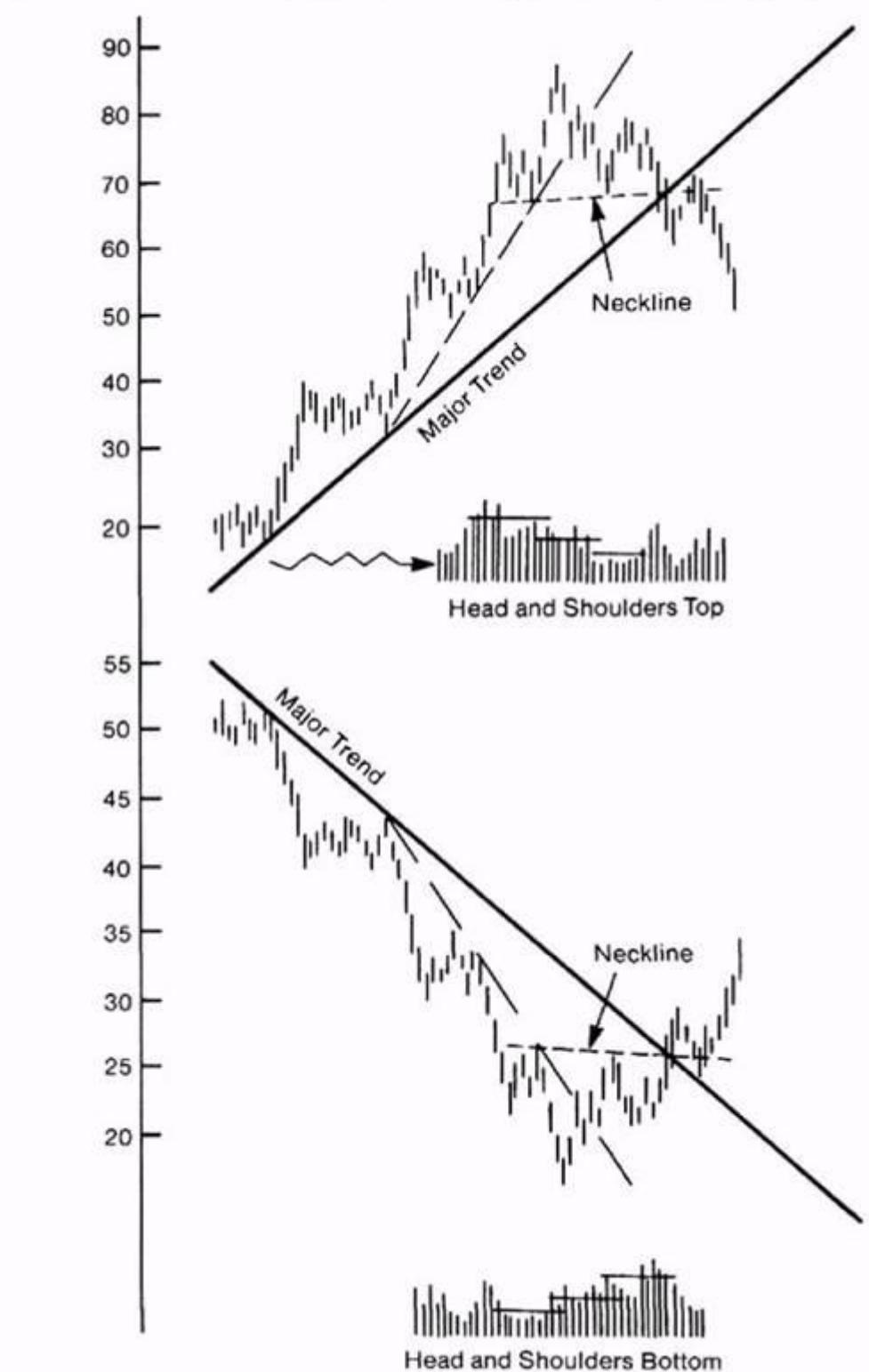
While talking about reversal formations in particular, there are some easy rules that can be followed to aid the technical student in his judgment. Strangely enough, a good deal of analytical frustration materializes simply by the lack of logical reasoning. A beginning technical practitioner may find himself reading more into stock price behavior than, in fact, exists. We have prepared the "seven question" discipline, and the queries tend to occur in the offered sequence. A "floater" is added for additional reference. An illustration (Figure 15) is offered to enhance the presentation.

First of all, when analyzing a stock for a potential reversal in trend, a simple but most important question must be asked. "Does the stock have a move of substance to reverse?" A major reversal formation certainly would not be looked for in a stock that has only moved from 20 to 26, but if a move from 20 to 60 had been experienced, any reversal in trend could be major.

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**FIGURE 13**

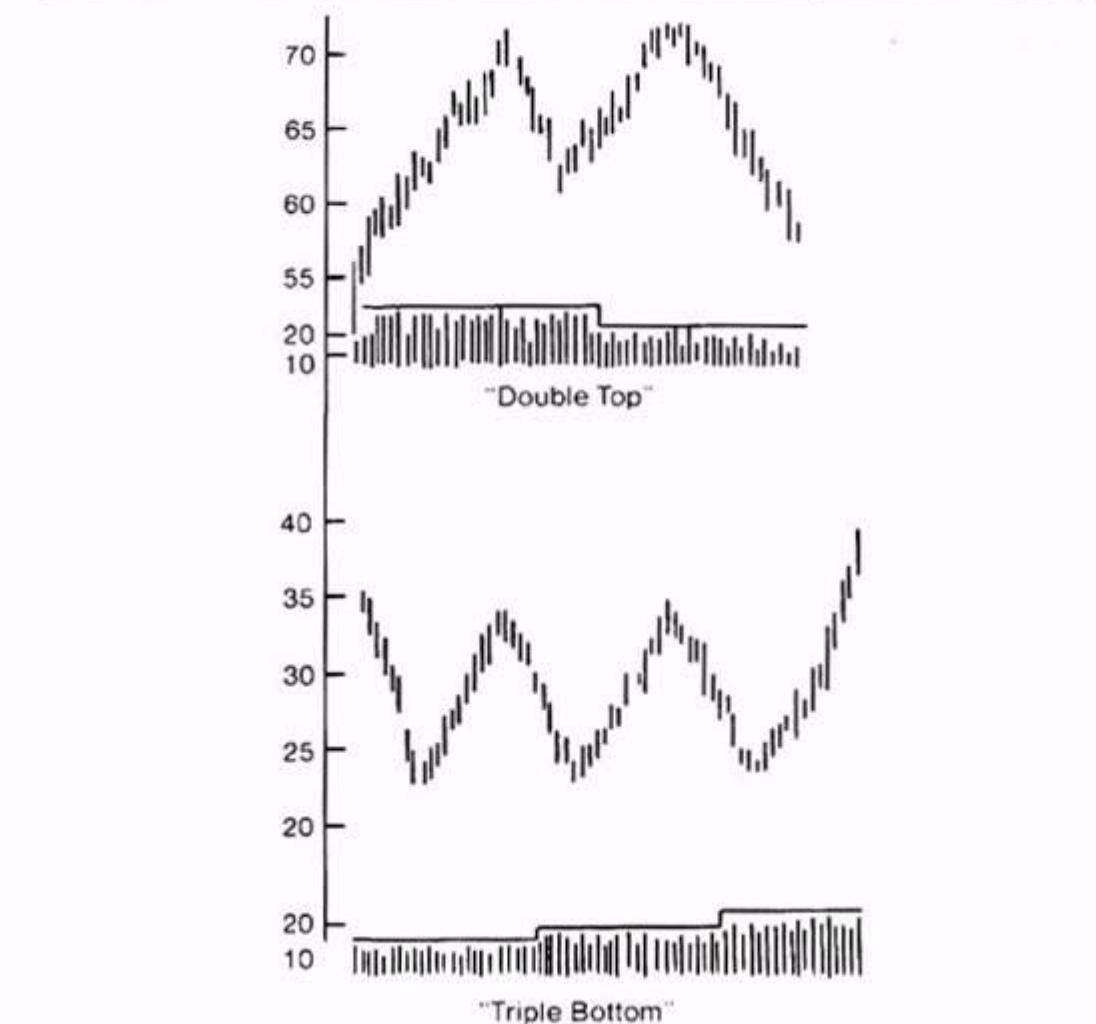
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**FIGURE 14**

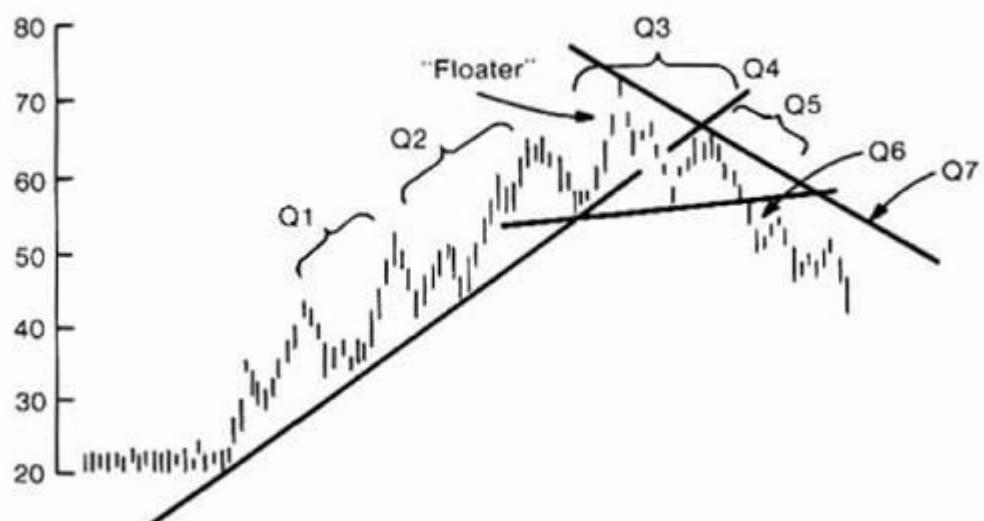
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**FIGURE 15**

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THE SEVEN QUESTIONS (WITH A "FLOATER")

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If the first question is answered yes, we then ask "Has the stock fulfilled readable price objectives?" As mentioned earlier, technical analysis does afford the occasional opportunity to calculate price objectives. Various methods can be employed, and we shall be more explicit in the discussion regarding point and figure charting.

If the answer to question 2 is yes, we can then move to question 3, "Has the stock violated its trends?" If a trend violation does occur, it could be the forerunner or an early warning for a reversal in the major direction of the stock's price movement,

Question 4 then asks, "Are there signs of distribution (or accumulation) evident?" Evidence of distribution can take on many forms. Bar charts display certain patterns (head and shoulders, as an example), and point and figure charts display others. This question does pivot off our second basic assumption as reviewed earlier.

"// distribution (or accumulation) is evident, is it significant enough to imply that a more than minor movement in price could be in the offing?" This fifth question is in reference to our basic assumption number three.

If we have answered the first five questions in an affirmative manner, Question 6 asks, "Has the stock violated a readable support (or resistance) level?" A yes answer here takes us to the last question (7) in the sequence, which the market technician of experience should not have to reach; and that is, "Has the stock initiated a downward (or an upward) trend?"

The floater question, which can be inserted in between any of the above seven, asks, "1\$ there any evidence of unusual price and/or volume action?" Sharp upward or downward runs following a major move can often be an indication of a "climactic" phase of market action, especially if accompanied by a bulge in turnover.

All analysis should be practiced with the thought of anticipating and not reacting. A good fundamental analyst should be anticipating trends of earnings, product development, and so on; a good technician attempts to anticipate stock price trends. Thus, an astute technician should be turning bearish during a stock's top formation rather than afterward, or turning bullish during a bottom pattern rather than during the following upward trend. But reacting to a change is certainly not a crime.

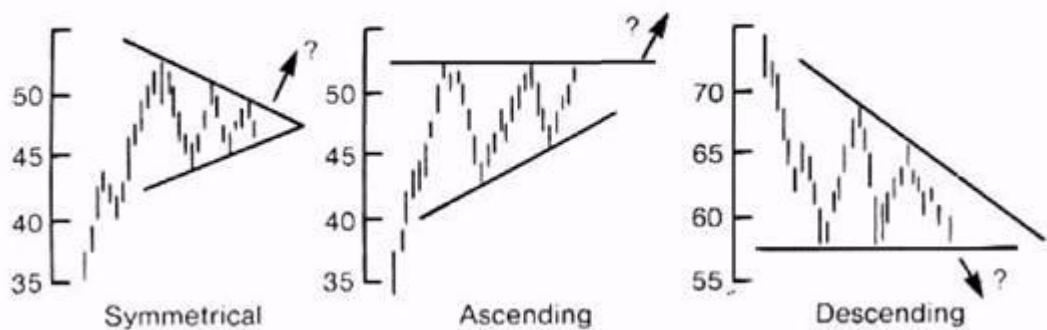
Although the head and shoulders reversal pattern, as well as the double and the triple tops, can be observed on both bar charts and point and figure charts, there are certain price configurations more easily identified on bar charts; point and figure charts have a number of peculiar patterns of their own.

Although primarily continuation patterns, the triangles (Figure 16) are an example of a formation more readily apparent on a bar chart than on a point and figure. The three types of triangles that are most often found are the symmetrical, the ascending, and the descending. Two of

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**FIGURE 16** Triangles

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the triangle patterns have some predictive value; namely, the ascending and descending. These two configurations reveal a positive force of market action versus a neutral force. The ascending triangle, for example, illustrates a positive force of buying (higher lows) versus the neutral force of selling (the flat top). In most cases, the positive force will eventually win out, indicating that the ascending triangle is a consolidation phase most often found in an uptrend. Conversely, the descending triangle has the same qualifications; an aggressive force of selling (the descending highs) against a neutral force of buying (the flat bottoms). The descending version is, therefore, most often found within a major downtrend.

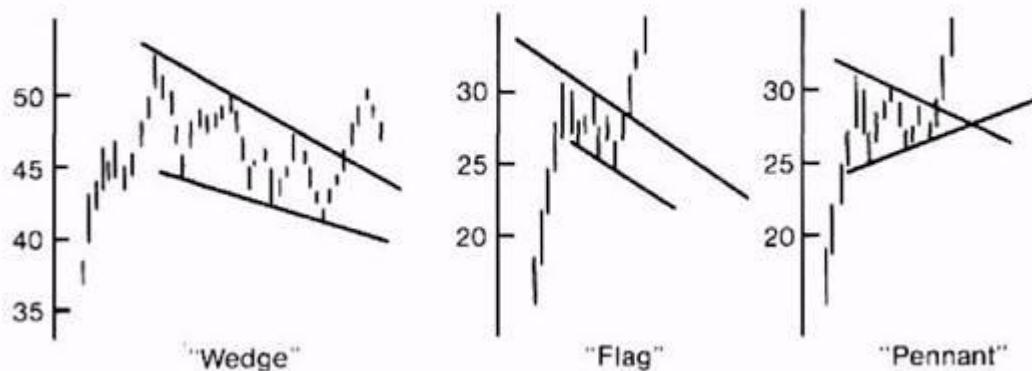
The symmetrical triangle, as illustrated, is made up of two positive forces—the buying side (the ascending bottoms) and the selling side (the descending tops). Although such a triangle is often completed with a move in the direction from which the stock came, we caution that there have been times when a symmetrical triangle has also been a reversal pattern. By using trendlines and following closely a stock's movement within the neutral trend, a hint is often given as to the possible direction of the impending move. Volume trends and relative strength analysis can often be additional aids toward determining the eventual direction of the breakout.

Aside from the triangles, there are a number of other technical configurations that qualify as consolidation patterns. In particular, there is a pattern called the wedge and then there are two short-term configurations that go by the names of flag and pennant. The wedge, as a consolidation configuration, is illustrated in Figure 17. The pattern is somewhat similar to the triangular variety except that the trendlines move in the same direction. The falling wedge usually occurs in a major uptrend pattern. The slope of the trendlines indicates that the sellers may be aggressive but the buyers are relatively less timid. This is indicated by the fact that the slope of the underlying trendline is not as great as the slope of the overhead downtrend line. In addition, as this

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**FIGURE 17**

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short-term phase of profit-taking occurs, volume usually shows a marked decrease.

The flag and pennant formations are very short term in nature and indicative of a spritely market for the stock under observation. These patterns will most often occur early in an upward or downward trend. The flag is illustrated in Figure 17. As you can see, it is made up of a few quick days of sharp moves which are then followed by a short-term phase of profit-taking. The stock will usually resume its upward trend. The pennant is nothing more than a small symmetrical triangle attached to a staff. It again is most often an illustration of short-term consolidation before a resumption of the underlying trend.

An explanation of bar chart analysis would not be complete without some explanation of the technical configuration known as a gap. Although there are a number of gaps readily formed within the market\* place, there are only three that the market technician is concerned with. These are the breakaway gap, the runaway gap, and the exhaustion gap.

Let us first point out that there is an old market legend that states: since nature abhors a vacuum, so does the stock market. Therefore, as the theory goes, a gap must be "filled." This is not necessarily true. By definition, a gap is a void of price action, only to be found on a bar chart, where a stock has opened at a level higher than the previous day's intraday high, and either maintains that opening level or, in fact, moves up and closes higher during the day's trading. Although some gaps are often filled and perhaps quickly so, one should not be wedded to the old belief that this will always occur.

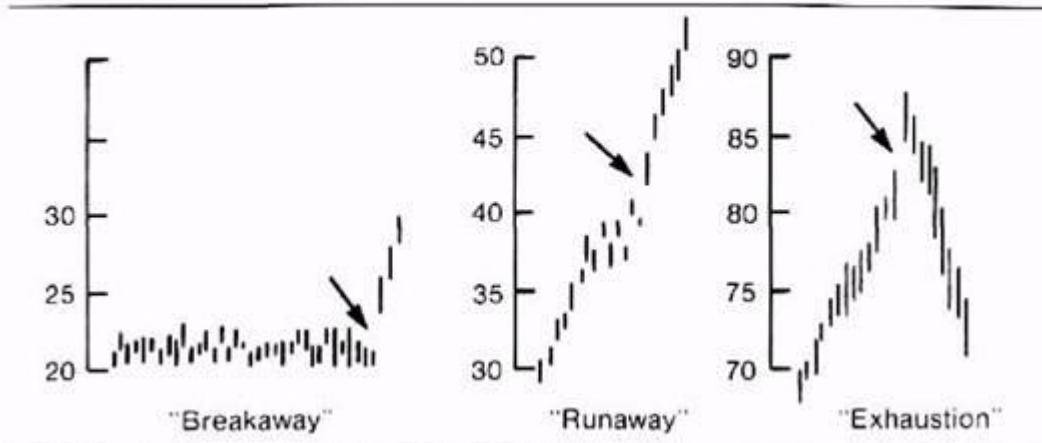
The breakaway gap, by definition, is a void in price that occurs after a phase of consolidation. A stock will break away vibrantly from the consolidation zone and leave a gap in its wake. If, in fact, it is a true breakaway gap, it will not be immediately filled.

The runaway gap most often occurs within the framework of a trend

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**FIGURE 18**

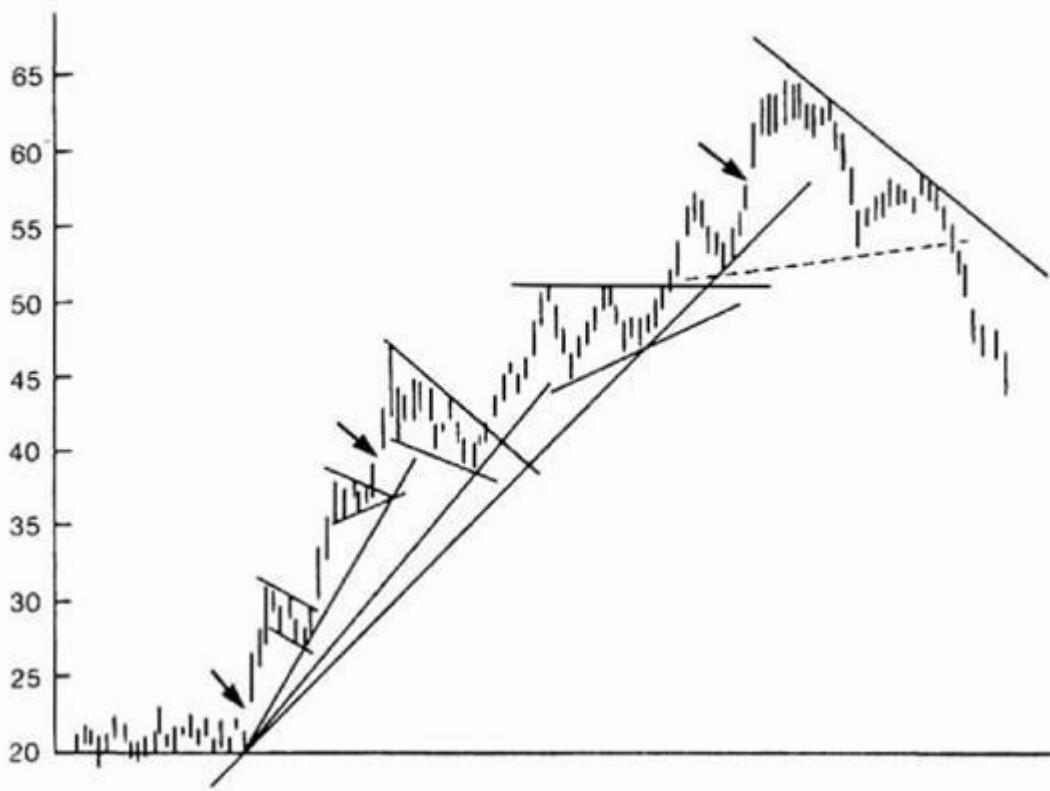
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**FIGURE 19**

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itself and the major trend draws to an end, a major reversal pattern becomes obvious.

### Point and Figure Analysis

In a number of ways, point and figure chart analysis differs markedly from bar chart analysis. As mentioned earlier, because a point and figure chart only indicates price movement of a certain magnitude, and only when such a move occurs is it plotted, there is no element of time or volume included on the graph. A one-point reversal chart of IBM on a full sheet of point and figure chart paper could represent only a few months of price activity, while for an issue like American Telephone & Telegraph, the same space could represent almost 10 years. The volatility and the price level of the stock will have a great bearing on the number of price reversals that are most apt to occur within a given time period. In our view, the two most important functions of point and figure charting is that the experienced practitioner is afforded the opportunity to analyze from time to time—perhaps more discernable than on a bar chart—(1) whether or not a stock is undergoing a phase of distribution

or accumulation while in fact the basic price trend is neutral, and (2) by utilizing the point and figure "count" theory, a determination can often be made as to the extent of a price movement in either an upward or downward direction. One cannot always project a time parameter for an impending move.

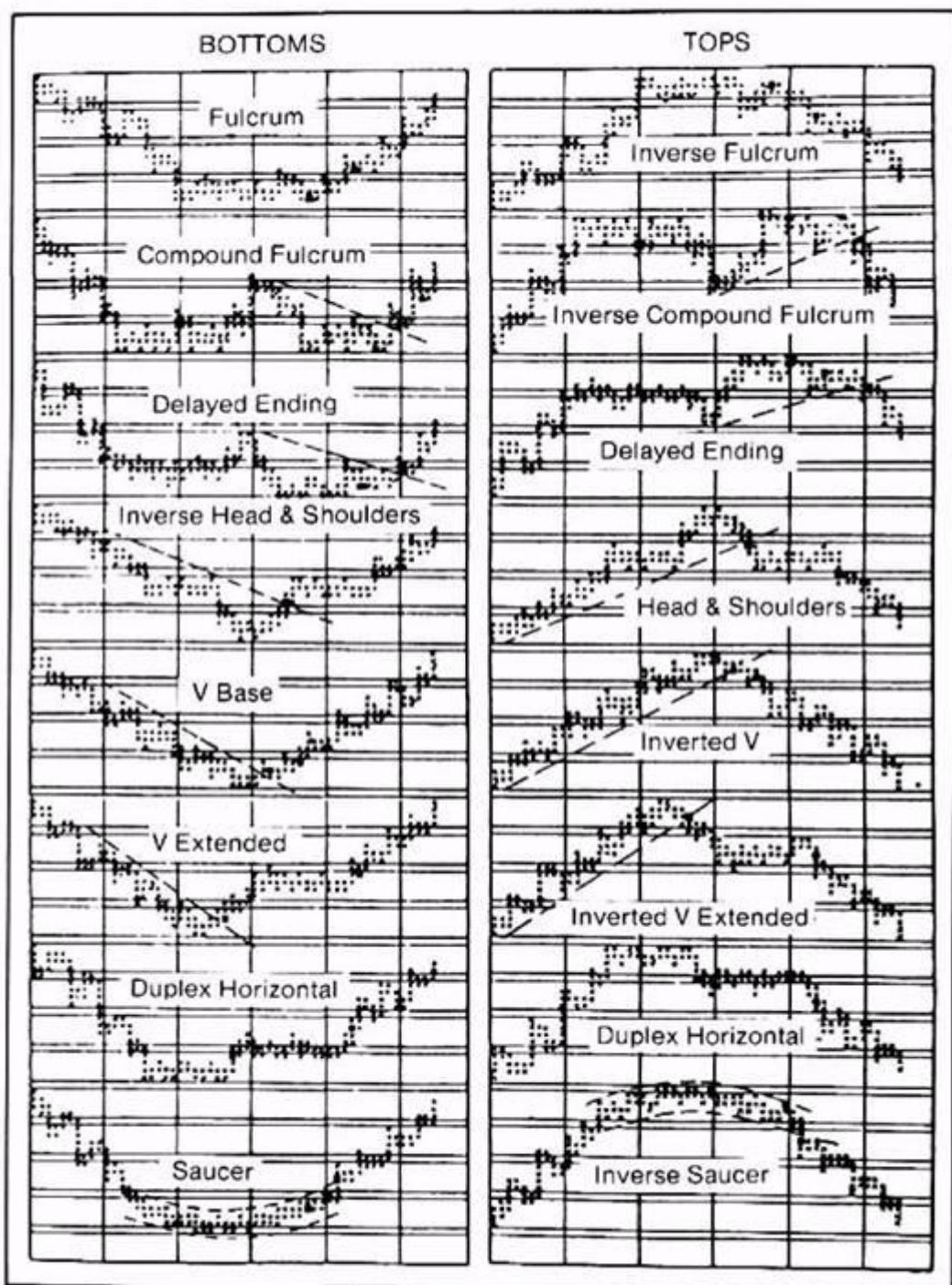
Like bar charts, point and figure charting affords the opportunity to analyze stock price trend\*, as well as support and resistance levels. In addition, there are certain technical price configurations such as the head and shoulders reversal, a rounding top or bottom, a V pattern, or a double or triple top that can be observed on a point and figure graph as well AS on a bar chart. But as the bar chart has a number of its own peculiar formations such as the triangles, wedge, pennant, flag, and gap, so does the point and figure graph display its own peculiar patterns. Figure 20 illustrates some of these pattern formations by name.

When a stock is moving upward or downward, one need not be A technician to determine that the stock is being accumulated or distributed, respectively. On the other hand, when a stock is in fact going through a neutral phase, with neither an upward nor downward bias evident, it would be most helpful to arrive at some determination as to the direction of the next move. Point and figure charting lends itself to this type of analysis,

Figure 21 illustrates a typical consolidation phase as it might appear on a point and figure graph. You will note in our example that there are nine columns of the down variety and four columns of the up variety. Stated another way, this neutral configuration of price consolidation illustrates there are nine failures for the stock to go lower against only four failures on upside attempts. A failure to move lower indicates that demand at least equaled, if not exceeded, supply at that point, while a failure to move higher is indicative of supply at least equaling if not exceeding demand. Thus, in our illustration, demand appears to be the more prominent characteristic. Therefore,, we sense evidence of accumulation rather than distribution. Explained another way, within a point and figure price consolidation pattern, price reversals that occur in the lower portion of the congestion phase are looked upon as representing accumulation activity while price reversals in the upper portion are usually representative of distribution, If this analysis of detecting accumulation proves correct, the stock should eventually move upward instead of downward out of the congestion phase.

Of course, the technician will probably have much more price data to work with than we illustrated in Figure 21. As an example, Figure 22 reveals that the stock was in a significant downward move prior to entering into the consolidation segment illustrated in Figure 21. Often the previous pattern of the stock can further enhance the analysis of a congestion phase. In other words, the mere inability of the stock to move lower following a prolonged downtrend implies basic accumula-

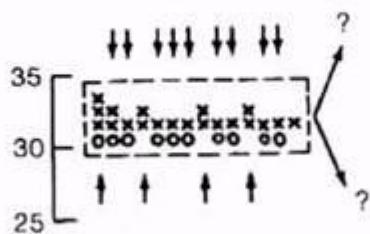
**FIGURE 20**



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**FIGURE 21**

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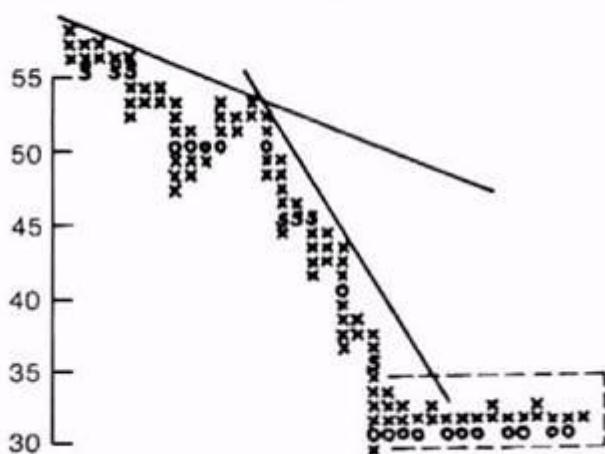
tion, while the inability to continue higher after a significant uptrend would indicate distribution. Figure 23 illustrates the type of point and figure configuration that could very well follow a stock's upward trend. In this regard, you will note the number of excessive failures in the up portion of the congestion pattern versus the reversals in the lower portion. This consolidation phase is in all likelihood a top reversal pattern. The resulting move from such n configuration should be downward.

Within the confines of a major uptrend, consolidation phases will, of course, occur. Figure 24 is a typical consolidation pattern in an upward trend. The trading range between 51 and 58 is considered to be the entire consolidation zone. But note the distinct phases of distribution and accumulation in the illustration. At the 58 level, the stock refuses to move higher, thus giving evidence of encountering either resistance or supply. This is the distribution segment of the consolidation zone and should be followed by some type of a setback or profit-taking phase. This correction occurs as indicated by the decline to 51. But note how the

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**FIGURE 22**

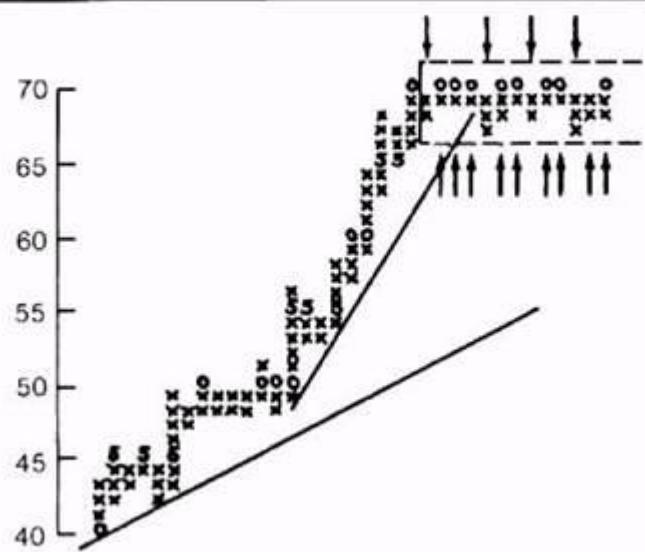
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**FIGURE 23**

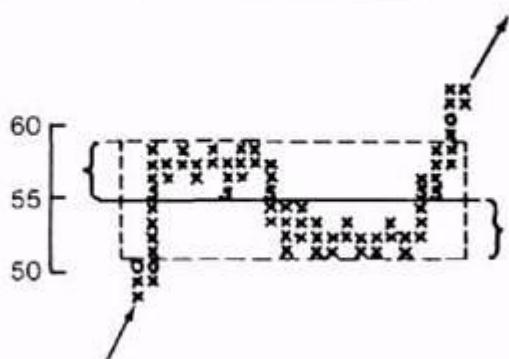
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**FIGURE 24**

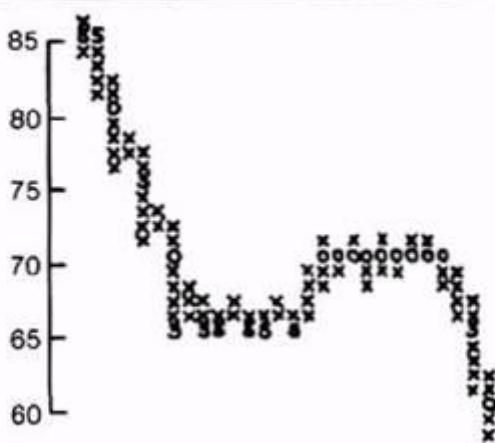
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**FIGURE 25**

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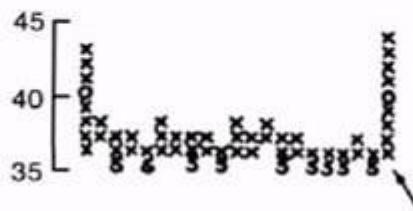
It stands to reason that the more supply that is eliminated from the marketplace (accumulation), the greater the impact should be on the following move (upward). Therein lies the logic or rationale behind the so-called point and figure objective theory (sometimes called the con fit). Once a consolidation pattern has been determined to be either distribution or accumulation, the mere extent of that lateral consolidation usually will have a bearing upon the extent of the ultimate move. The bigger the base, the bigger the upward move; the larger the top, the greater the downside adjustment,

According to one approach, a point and figure count is accomplished by merely counting the number of boxes within the consolidation phase, placing emphasis on the price level with the greater fill-ins. In Figure 26 this would be a count across the 36 price line; the example shows the greater number of .vs falling on this level. In addition, the 36 line also indicates the initiation point of the new upward trend phase (arrow). In our illustration, a count of 21 points results, which added to the price level of 36 offers an upside price target of approximately 57.

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**FIGURE 26**

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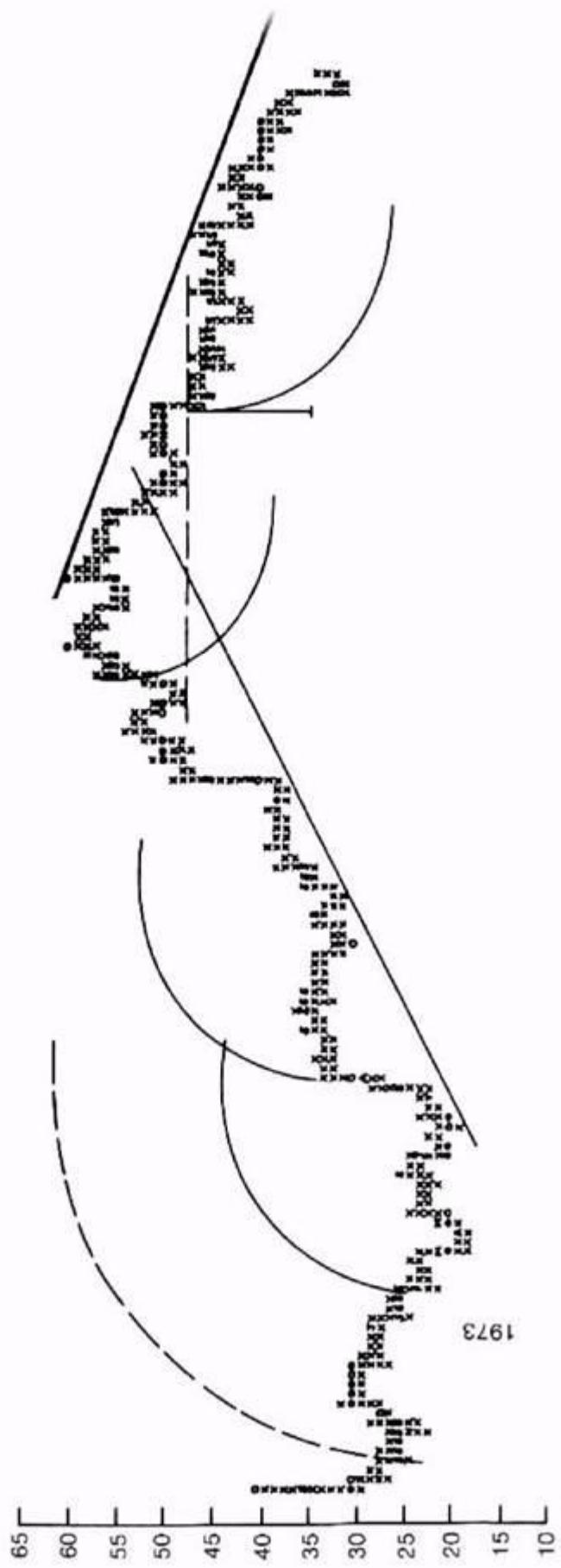
Application of the point and figure count should, of course, be done with great caution and only after much experience. A stock's volatility or popularity in the marketplace can have an influence on an objective's validity. For instance, a glamour stock in vogue at the time may tend to exceed projected price targets as market enthusiasm leads to greater extremes. On the other hand, to utilize the count theory for a utility stock could be foolhardy, as objectives of great magnitude can result from consolidation phases.

The point and figure objective theory is simply another tool. Obviously, the type of market background will play a great role in the validity in the projected targets. A bull market will enhance upward objectives, and a bear market will usually be marked by a number of downside calculations. The count approach can also be used on the other reversal charts. On a three-point reversal chart, as an example, the number of lateral boxes in a consolidation phase would be multiplied by three to achieve an upside or downside objective potential. We caution, however, that objectives calculated off the three-point reversal chart should not be used as a primary input, but more or less as a confirmation to the one-point calculation. Figures 27A and 27B afford good examples of the count technique as it could have been applied to Bausch & Lomb in 1973, a year that fundamentals were little changed.

In 1980, we participated in the Fifth Annual Market Technicians Association's seminar sharing some thoughts on the point and figure approach. Some of the above points were explained and a number of "past" illustrations were used. At the close of our presentation we felt it could be of interest to leave the audience with an illustration for the "future/" since most of the discussion had been academic. We used the attached charts of Marion Labs (Figure 28) showing what appeared to be a major base on both the one-point and three-point reversal graphs. Take your own counts off the charts. Where would you have been a buyer? Where was the breakout? Marion has split 2 for 1 three times since 1980 making the original Si4 price about 1%. Said another way, with Marion recently trading around 45 per share, adjusted for the three splits, that would work to 360 for the original 14 stock. Our "count," taken across the entire width of the base using the 13 or 14 price line would have been about 95 points to "only" 109.

Our description of bar chart and point and figure chart utilization has primarily focused on the more common aspects. By no means could a complete dissertation be accomplished in our allocated space, Technical students of the market will need to experiment for themselves with each of the two charting techniques to discover which one they would feel most comfortable with. Obviously, the use of both approaches would be most ideal for both short- and long-term stock analysis.

**FIGURE 27A** Baush & Lomb One-Point Reversal

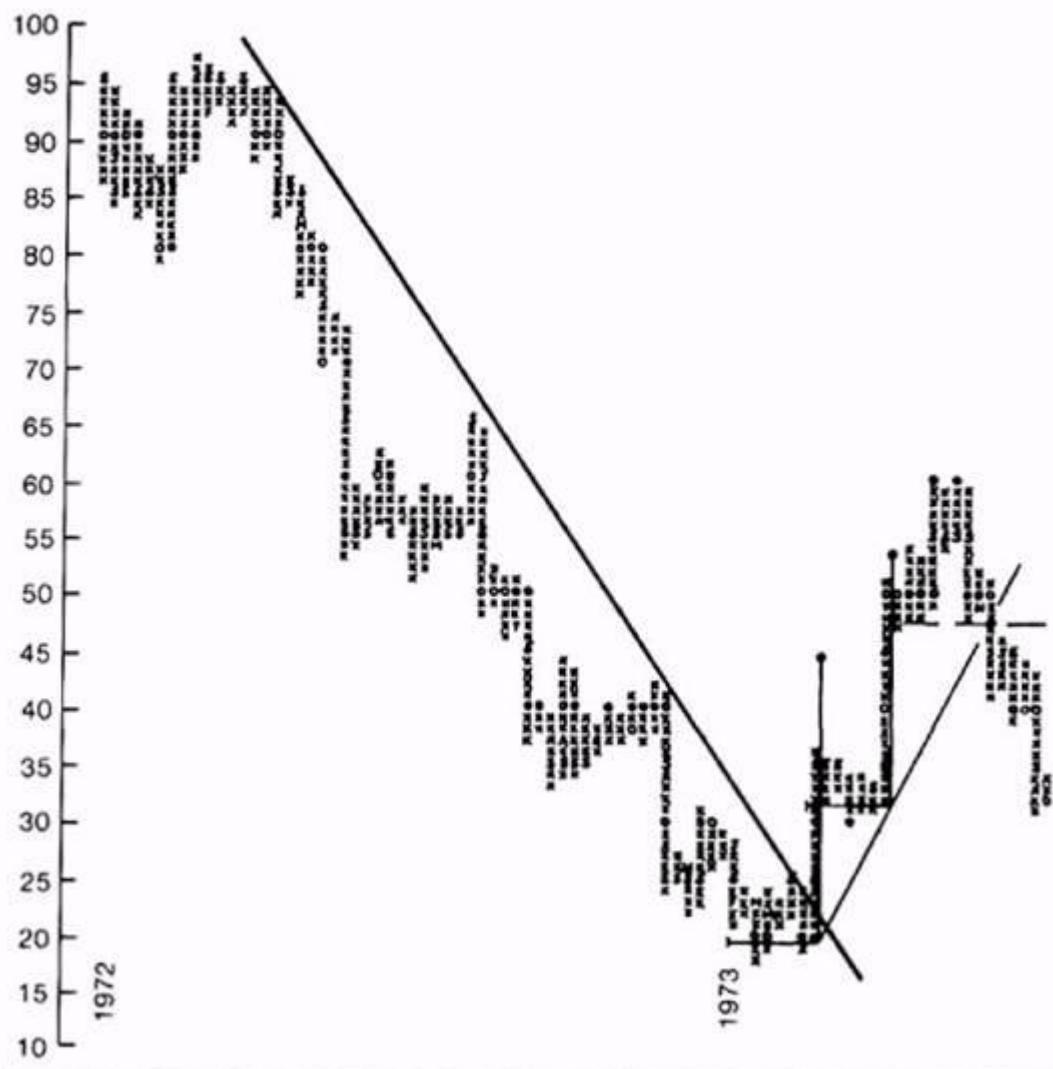




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**FIGURE 27B** Baush & Lomb Three-Point Reversal

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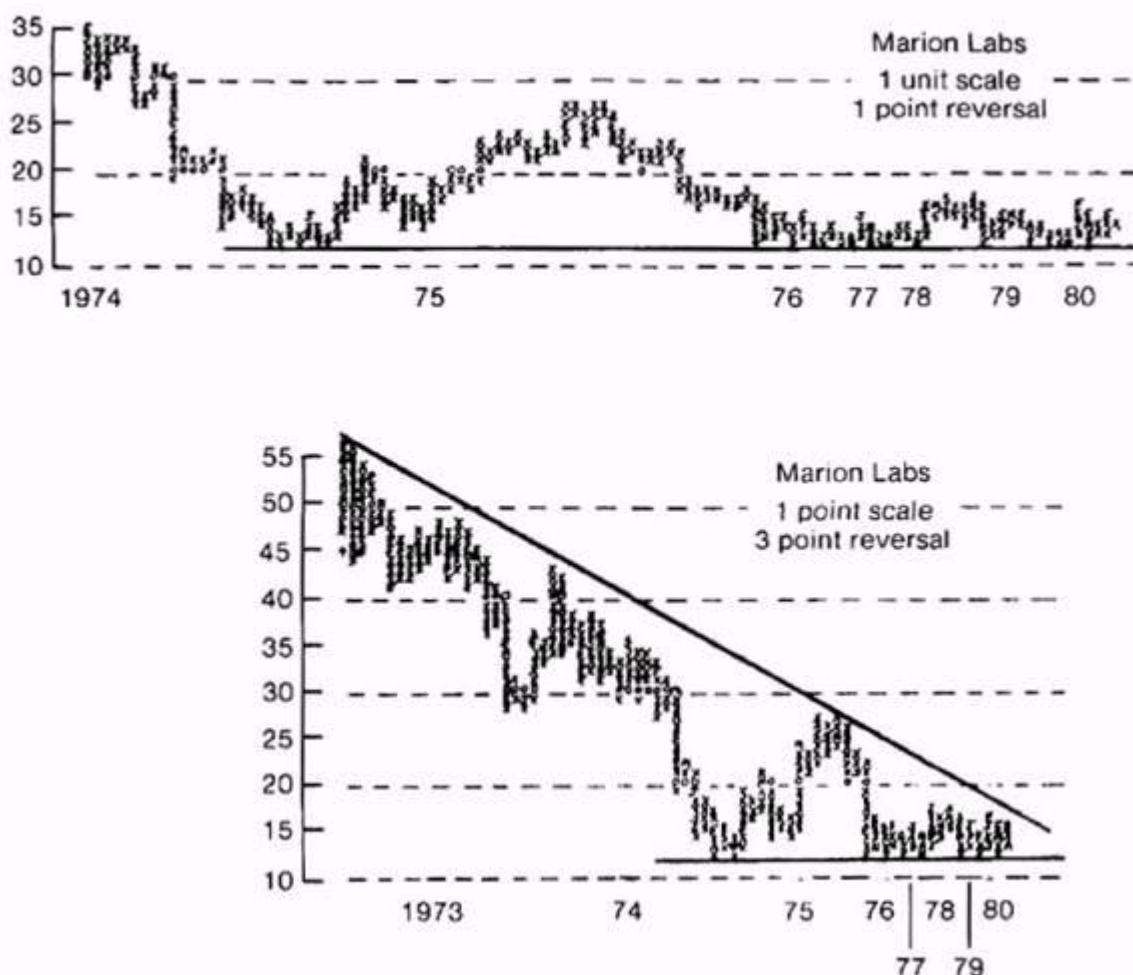
### Group or Sector Analysis

The final result of a totally integrated analysis will more than likely be the purchase or sale of an individual stock. More often, the casual technician's style will be more oriented to the use of methods already discussed to follow the trends of individual issues. The more complex or integrated approach will include some type of technical analysis of the market's many sectors or groups. Fortunately, there are a number of readily available data sources to support group analysis, with the more popular being the Barron's groups published each week in the named-for magazine, and the weekly Standard & Poor's group statistics that must be subscribed to at a more expensive monetary outlay. We have

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**FIGURE 28**

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personally followed the Standard & Poor's (S&P) data over the years as there is a great deal more history to deal with, and we have found that the majority of the professional world relates more so to the S&P definitions.

Group analysis should be practiced, if time permits. Finding a strong group can be a great shortcut in finding strong stocks. Equally important is that the trend of the group can have a strong tidal influence on the success of your individual stock commitment. Buying a seemingly strong stock within a poor-acting group may be akin to "fighting the tape." A good overview of the market's group activity can also allow "theme" investing to be a part of your portfolio decision making. If the foods look good, so may the soft drinks or the soaps. A consumer stock orientation could lead to better performance in certain market cycles,

while a more economically sensitive portfolio would be the better choice in other market environments.

There are a number of technical methods that can be used for group analysis. Tracking the trend of the absolute price is obviously quite simple, and standard technical disciplines like support/resistance, trendlines and moving averages lend credibility to the study. Many technicians find momentum input (price rate-of-change) a helpful tool to gauge acceleration or deceleration of price movement.

In our view, the most important tool in group analysis is relative strength. While many individual investors may tend not to compare their investment performance to the market, as we noted earlier, professional portfolio managers are closely judged on their ability to outperform the S&P 500. Relative strength leads to "portfolio weight-ing." If, for example, your individual technical analysis reveals that most of the components within the group have supportive promise, then you must overweight the group to accomplish the outperforms nee, and you will stay overweighted until your technical input dictates a change in relative trend is under way. S&P publishes the market weights for all their industry categories or you could do it yourself at any time providing you have a computer at hand. In recent years, the food group has had an S&P weight of over 3.0 percent as a percent of the total 500 Index's makeup. So if you felt strongly about o^performance, you may have had about 10 percent or so of your portfolio invested in this area. And as Figure 29 reveals, you would have significantly outperformed the market, which itself was experiencing a major bull trend. On the other hand, even though the domestic oil group (Figure 30) was nearing past historic highs, the relative strength was negatively diverging and showing weakness. Your portfolio shoud have been underweighted as a result.

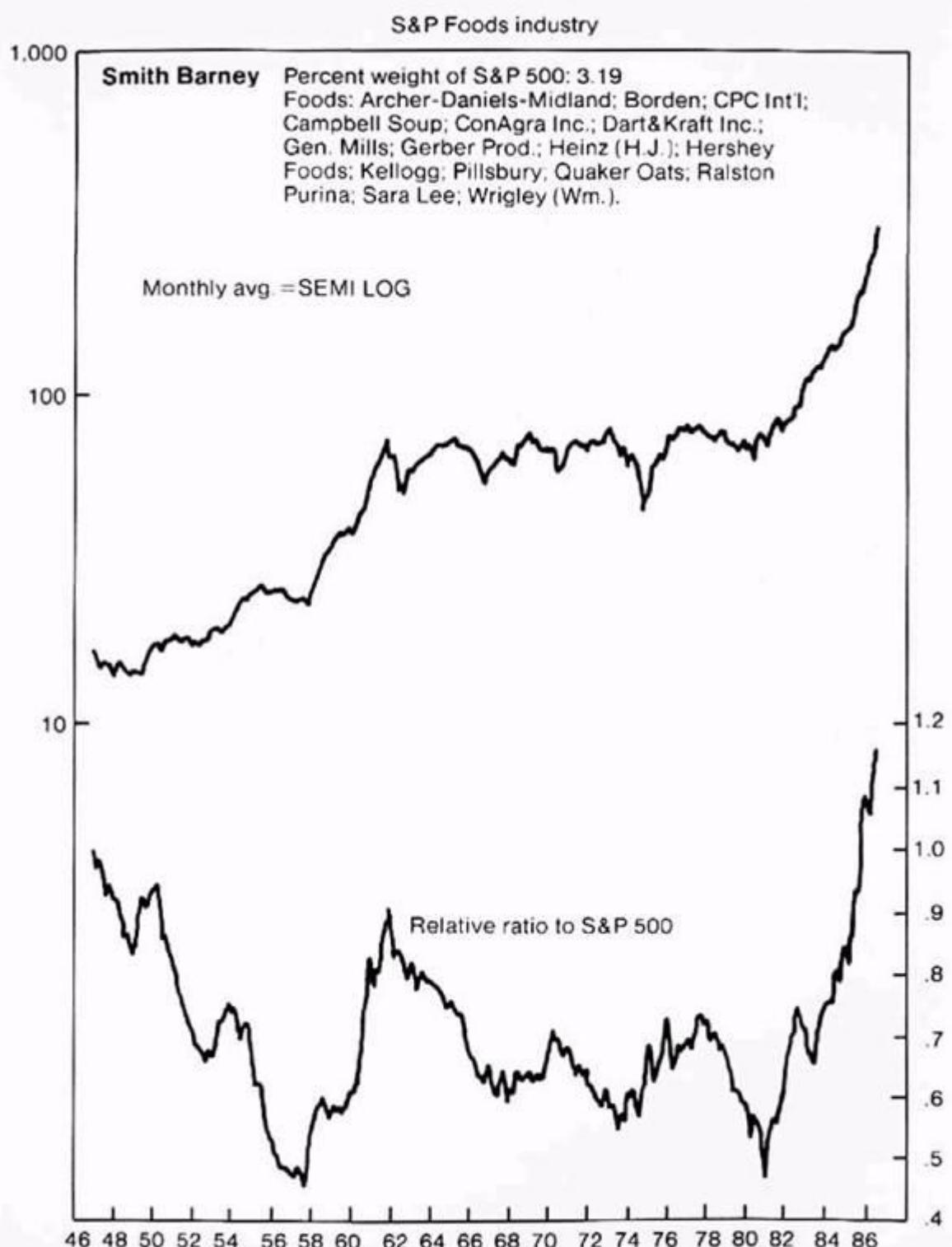
## Stock Market Analysis

The final input to the totally integrated technical effort is to study the market itself. Contrary to most beliefs, to be able to "call" the direction of the general market does not necessarily mean positive investment performance will result. One way to explain this is to scheme the total technical approach as a triangle (see Figure 31). We'll put overview or general stock market analysis at the top apex, group analysis on the lower left, and individual stock input on the Uiwer right. Indeed, a correct stock market forecast based on extensive analysis could lead one to the proper group, but this is doubtful. Infrequently, if at all, will a stock market overview correctly direct the analyst to the right stock. Group work can lead to a market forecast as well as the right direction

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**FIGURE 29**

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**FIGURE 30**

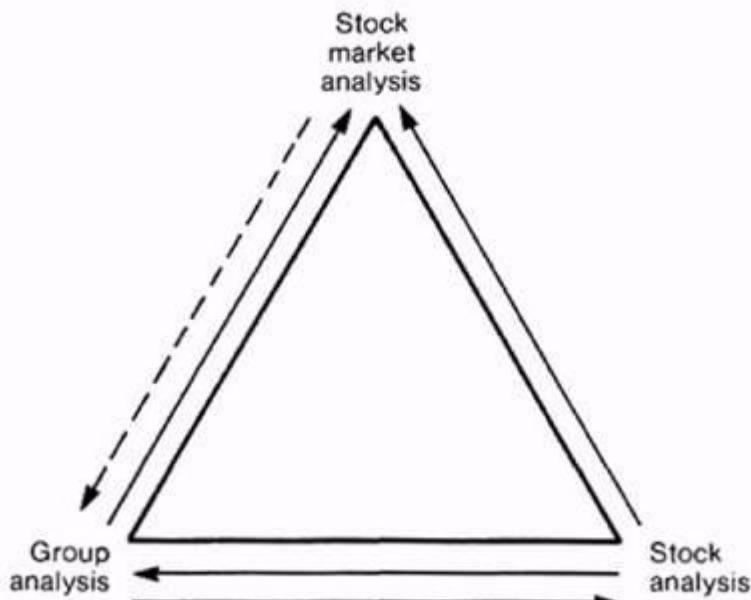
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**FIGURE 31**

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to stock picking. Correct stock picking may well lead one to the right groups and may remotely result in a correct market forecast.

But forecasting the direction of the stock market will always be a prime obsession of the technician. And with the growing number of derivatives, futures, options, and options on the futures, a correct market outlook can have more direct portfolio implications than ever before.

A review of general stock market technical approaches and indicators could, without difficulty, be a book in itself. We shall only highlight some of the more popular techniques practiced by most stock market technicians,

To analyze the "market," one first has to have a good grasp of what the "market" is. Is it an average of 30 stocks, an index of 500 issues, a cumulative number of daily advances versus declines, an unweighted index of 1,700 issues? We remember overhearing a stockbroker telling his client that the Dow Jones Industrial Average was making new highs, climbing through 1200, and thus the investor should be joyful of his newfound wealth. Our broker friend was quickly, but politely informed by his client, "That's your Dow, sonny, mine's at 850!" Investors make the quick mistake that the averages are the market. Of course, yardsticks are necessary to evaluate performance, but they may not be totally indicative of individual or even institutional portfolio performance.

Understanding the makeup and the calculation of the leading stock market indexes goes a long way toward successful forecasting, or just

better comprehension of "what's goin' on." We are sometimes amazed at stock market predictions that seem to ignore the basic construction of the index that's being forecast. Back in 1973, we read a famous adviser's annual forecast that the popular Dow Jones Industrial Average would climb to over 1500 by Easter! The Dow was just a bit under 1000 at the time. According to our calculations, by looking carefully at the prices of each of the 30 component stocks and understanding their different "price weights" within the index, the adviser was really forecasting that a significant economic boom would hit the country in less than five months. While 5 of the 30 stocks were trading at all-time highs at the time of the forecast, to reach 1500 we figured that no fewer than 10 others would probably have to accomplish the same feat, and for some of them this meant a move over 100 percent. Possible, but not probable. We confronted our adviser friend with this input and, after some thought, he recognized the folly of his forecast. He simply had not thoroughly thought out the mathematical ramifications.

The Dow is a simple mathematical average, but highly distorted in its makeup. The divisor was never 30 (due to reconstruction through the years), but if you were to start your own Dow today, you would do so by picking 30 stocks, adding up the closing prices, and dividing by 30. The Dow's divisor has been reduced through the years due to substitutions and/or stock splits. The divisor today has actually fallen under 1.00 to become a "multiplier." Each move of a point in each stock now translates into a greater than one point move in the average. If each of the 30 stocks were to close the day up one point, using the current divisor of .889, the Dow would end up the day 3575 points.

The weight of a stock in the Dow Jones averages (transportation and utility alike) is simply determined by the current price of the stock. Study Figure 32 for a quick review. IBM is the highest priced stock and thus is the heaviest weighted, while Navistar, being the lowest priced component, has the smallest influence. If, let's say, each of the above components worked hard to double its earnings in an effort to double their share price, while both companies would be congratulated for their efforts, the effect of the double for IBM on the DJIA would be almost 20 times the effect of Navistar. Fair? Not really, but that's the inherent problem with the Dow, and when a stock splits 2:1, it immediately loses a great deal of its clout on the average's performance.

The Dow Jones Utility Average is followed by many market students as a so-called interest rate sensitive barometer. It is thus perceived as being a leading indicator for the general market. While we would generally subscribe to this view, we also realize that the DJUA is not made up entirely of electric utility stocks—there are four natural gas components. At one time these four energy-related issues commanded about 65 percent of the weight of the DJUA and were almost directly responsible for the average's movements. Yet we would read in the

**FIGURE 32 Dow Jones Industrial Average Components Ranked by Price\***

DJIA Component	Price	Percent Weight
International Business Machines	138	8.3%
Merck	114	6.8
Minnesota Mining & Manufacturing	113	6.8
American Can Co.	89	5.3
DuPont	81	5.0
Procter & Gamble	78	4.7
Phillip Morris	76	4.6
General Electric	75	4.5
General Motors	73	4.4
International Paper	67	4.0
McDonald's	65	3.9
Exxon	65	3.9
American Express	64	3.8
Westinghouse	58	3.5
Eastman Kodak	56	3.4
Sears	47	2.8
United Technologies	44	2.6
Owens Illinois	43	2.6
Woolworth	43	2.6
Chevron	43	2.6
Allied Signal Inc.	42	2.5
Aluminum Co. of America	36	2.2
Goodyear Tire & Rubber	34	2.0
Texaco Inc.	31	1.9
American Telephone & Telegraph	23	1.3
Union Carbide	22	1.3
USX Corp.	19	1.1
Inco Ltd.	12	.7
Bethlehem Steel	8	.5
Navistar	7	.4
	1666	100%
Total ÷ by current divisor of .889 =	1874	- DJIA level

\* Prices as of 8/21/86.

**FIGURE 33** Dow Jones Utility Average Components Ranked by Price\*

DJUA Component	Price	Percent Weight
Consolidated Edison	52	10.6%
Public Service Electric & Gas	47	9.5
Panhandle Eastern†	44	8.9
Columbia Gas†	41	8.3
Southern California Edison	38	7.7
Houston Ind.	36	7.3
Commonwealth Edison	33	6.7
American Electric Power	31	6.2
Consolidated Natural Gas†	30	6.0
Pacific Gas & Electric Co.	27	5.5
Centerior Energy	26	5.3
Niagra Mohawk Power	24	4.9
People's Energy†	23	4.7
Philadelphia Electric	23	4.7
Detroit Edison	18	3.7
	493	100%

Total ÷ by current divisor of 2.277 = 217 - DJUA

\* Prices as of 8/21/86.

† Four natural gas components equal 28 percent.

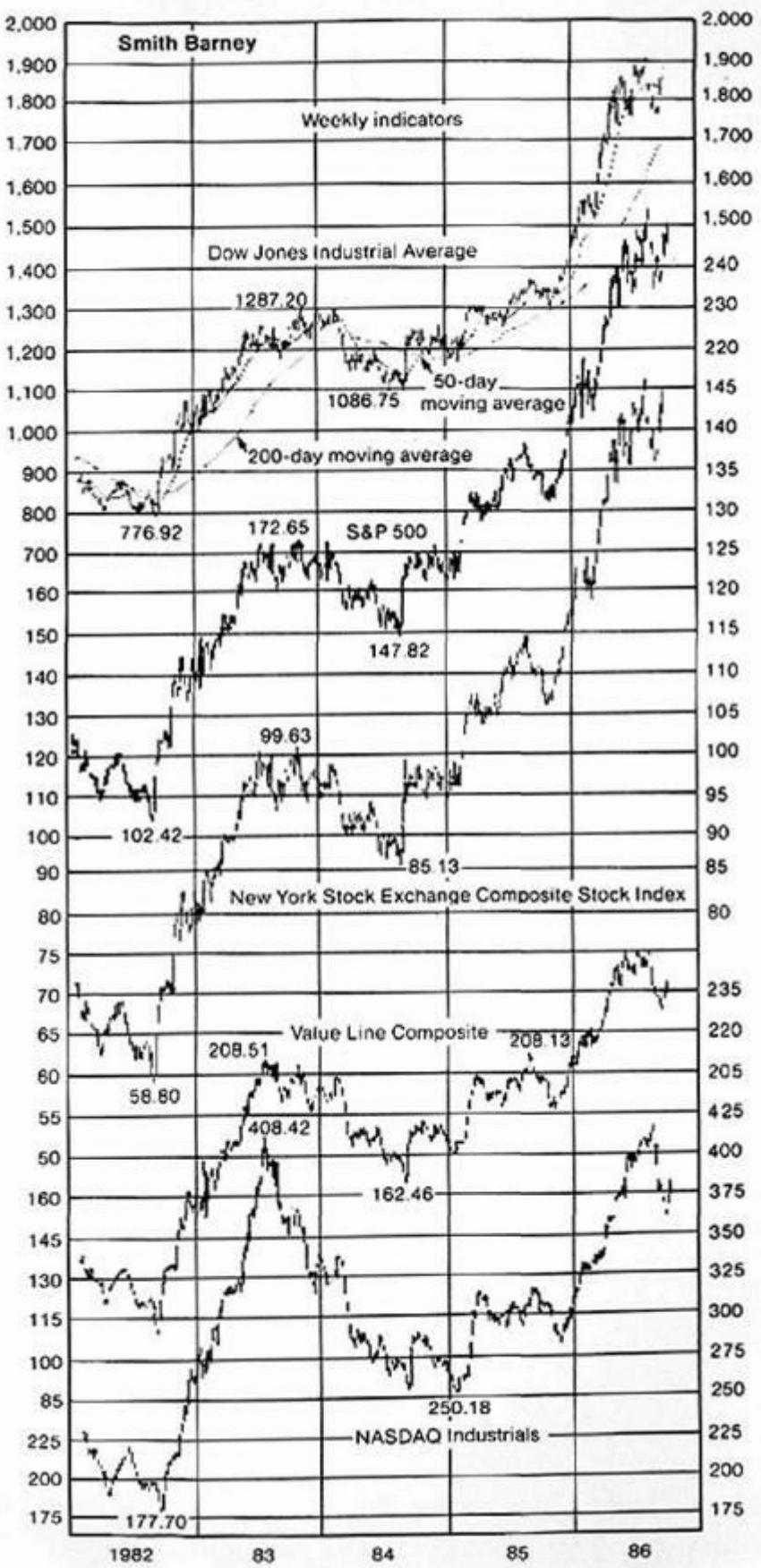
**FIGURE 34**

<i>Jun 10, 1986</i>	<i>Stock</i>	<i>% Mkt Wt</i>	<i>Mkt Value (Millions)</i>
1	INTERNATIONAL BUS MACH	5.38	91339.6
2	EXXON CORP	2.51	42711.8
3	GENERAL ELEC CO	2.15	36478.1
4	AMERICAN TEL&TELEG CO	1.53	26064.9
5	GENERAL MTRS CORP	1.43	24318.4
6	ROYAL DUTCH PETE CO	1.23	20873.4
7	DU PONT E I DE NEMOURS	1.20	20322.3
8	BELLSOUTH CORP	1.00	16904.1
9	SEARS ROEBUCK & CO	0.99	16748.8
10	PHILLIP MORRIS COS INC	0.93	15814.0
11	AMOCO CORP	0.92	15653.0
12	FORD MTR CO DEL	0.86	14655.4
13	COCA COLA CO	0.86	14538.7
14	CHEVRON CORPORATION	0.80	13641.6
15	WAL MART STORES INC	0.80	13560.4
16	MERCK & CO INC	0.80	13508.3
17	EASTMAN KODAK CO	0.79	13412.8
18	BELL ATLANTIC CORP	0.78	13233.2
19	AMERICAN EXPRESS CO	0.77	13131.1
20	NYNEX CORP	0.75	12711.2
21	PROCTER & GAMBLE CO	0.74	12652.6
22	AMERICAN HOME PRODS CP	0.74	12561.5
23	MOBIL CORP	0.74	12556.8
24	JOHNSON & JOHNSON	0.73	12423.6
25	MINNESOTA MNG & MFG CO	0.72	12239.9
26	RJR NABISCO INC	0.71	12089.8
27	AMERICAN INFORM TECH	0.71	12023.0
28	BRISTOL MYERS CO	0.67	11350.4
29	ABBOTT LABS	0.66	11152.2
30	HEWLETT PACKARD CO	0.65	10983.1
31	PACIFIC TELESIS GROUP	0.64	10815.8
32	DOW CHEM CO	0.64	10791.6
33	GTE CORP	0.63	10618.5
34	LILLY ELI & CO	0.62	10514.7
35	STANDARD OIL CO OHIO	0.61	10349.7
36	PFIZER INC	0.61	10343.2
37	DIGITAL EQUIP CORP	0.60	10260.0
38	ATLANTIC RICHFIELD CO	0.57	9710.2
39	U S WEST INC	0.57	9611.4
40	SOUTHWESTERN BELL CORP	0.56	9513.7

**FIGURE 35 MARKET VALUE RANKING OF AMEX STOCKS AS OF 8/21/86**

		Mkt Value	Weight	Cum Wt
1	B A T IND S LTD	9174.4	11.11	11.11
2	IMPERIAL OIL LTD	4905.4	5.94	17.06
3	IMPERIAL GROUP PLC	3828.3	4.64	21.70
4	NEW YORK TIMES CO	2878.1	3.49	25.18
5	TEXACO CDA INC	2385.2	2.89	28.07
6	WANG LABS INC	2029.9	2.46	30.53
7	WASHINGTON POST CO	1999.9	2.42	32.95
8	I C H CORP	1476.2	1.79	34.74
9	COURTAULDS PLC	1422.4	1.72	36.47
10	HASBRO INC	1372.7	1.66	38.13
11	AFFILIATED PUBNS INC	1145.2	1.39	39.52
12	DILLARD DEPT STORES	1111.4	1.35	40.86
13	BRASCAN LTD	1082.7	1.31	42.17
14	PALL CORP	1039.3	1.26	43.43
15	GIANT FOOD INC	952.8	1.15	44.59
16	HOME GROUP INC	933.5	1.13	45.72
17	PLACER DEV LTD	908.4	1.10	46.82
18	DOMTAR INC	893.8	1.08	47.90
19	WICKES COS INC NEW	882.7	1.07	48.97
20	AMDAHL CORP	842.9	1.02	49.99
<hr/>				
544	WICHITA IND S INC	3.6	0.00	99.95
545	BETHLEHEM CORP	3.5	0.00	99.96
546	WESPERCORP	3.1	0.00	99.96
547	ANGLO ENERGY LTD	3.0	0.00	99.96
548	ICO INC	3.0	0.00	99.97
549	GENERAL EMPLOYMENT ENT	2.9	0.00	99.97
550	DIGICON INC	2.8	0.00	99.97
551	ENERSERV PRODS INC	2.8	0.00	99.98
552	PLYMOUTH RUBR INC	2.8	0.00	99.98
553	SFM CORP	2.7	0.00	99.98
554	LA POINTE IND S INC	2.7	0.00	99.99
555	AUDIOTRONICS CORP	2.7	0.00	99.99
556	CUSTOM ENERGY SVCS INC	2.4	0.00	99.99
557	USR IND S INC	2.3	0.00	100.00
558	PREMIER RES LTD COLO	1.9	0.00	100.00
559	ORMAND IND S INC	1.2	0.00	100.00
560	CASTLE IND S INC	0.9	0.00	100.00
561	IMPERIAL IND S INC	0.6	0.00	100.00
562	U N A CORP	0.6	0.00	100.00
563	BELTRAN CORP	0.0	0.00	100.00
TOTAL MARKET VALUE		82543.8		

**FIGURE 36**





Canada, A comparison of the Value Line to the S&P will illustrate small stock-big stock relative performance. Figure 36 illustrates the above-mentioned indexes, and you can perhaps note some different patterns.

Aside from the price averages and indexes, there are a vast number of other indicators that technicians use to judge the "health" of the market. Perhaps the most popular stock market indicator is the advance/decline (A/D) statistic. A/D data are followed to measure the market's "breadth" or the range of stock participation. Our research indicates that the A/D statistics were first compiled and plotted back in the mid-1920s and prior to the use of broad-based averages.

The A/D data are readily available in any newspaper that has a half way decent business section. The presentation usually includes the number of issues that traded on the exchanges {NYSE, AMEX, and OTC) along with the number that advanced, declined, and were unchanged. The easiest and most popular breadth indicator is the advance/decline line in which the daily difference between the advancing and declining issues is accumulated. Some technicians may ratio the data or create a more complex index, but our findings suggest the simple way is sufficient.

The theory behind the A/D data is also quite simple. As long as the "army" (breadth) stays in step with the "generals" (e.g., DJIA), then the trend, by definition, is healthy and should sustain. It's when the army starts to show signs of retreating, or not keeping pace with the generals, that the technician becomes concerned about the viability of the underlying trend. Lagging breadth is empirical evidence of a growing selectivity in the market, a good sign that the market averages may be nearing a point of correction or consolidation. Such behavior carries the technical label "negative breadth divergence." We don't have the space to fully explain the intricacies of breadth analysis, but you can observe the outlined trends on Figure 37 to gain a quick insight to the points described above.

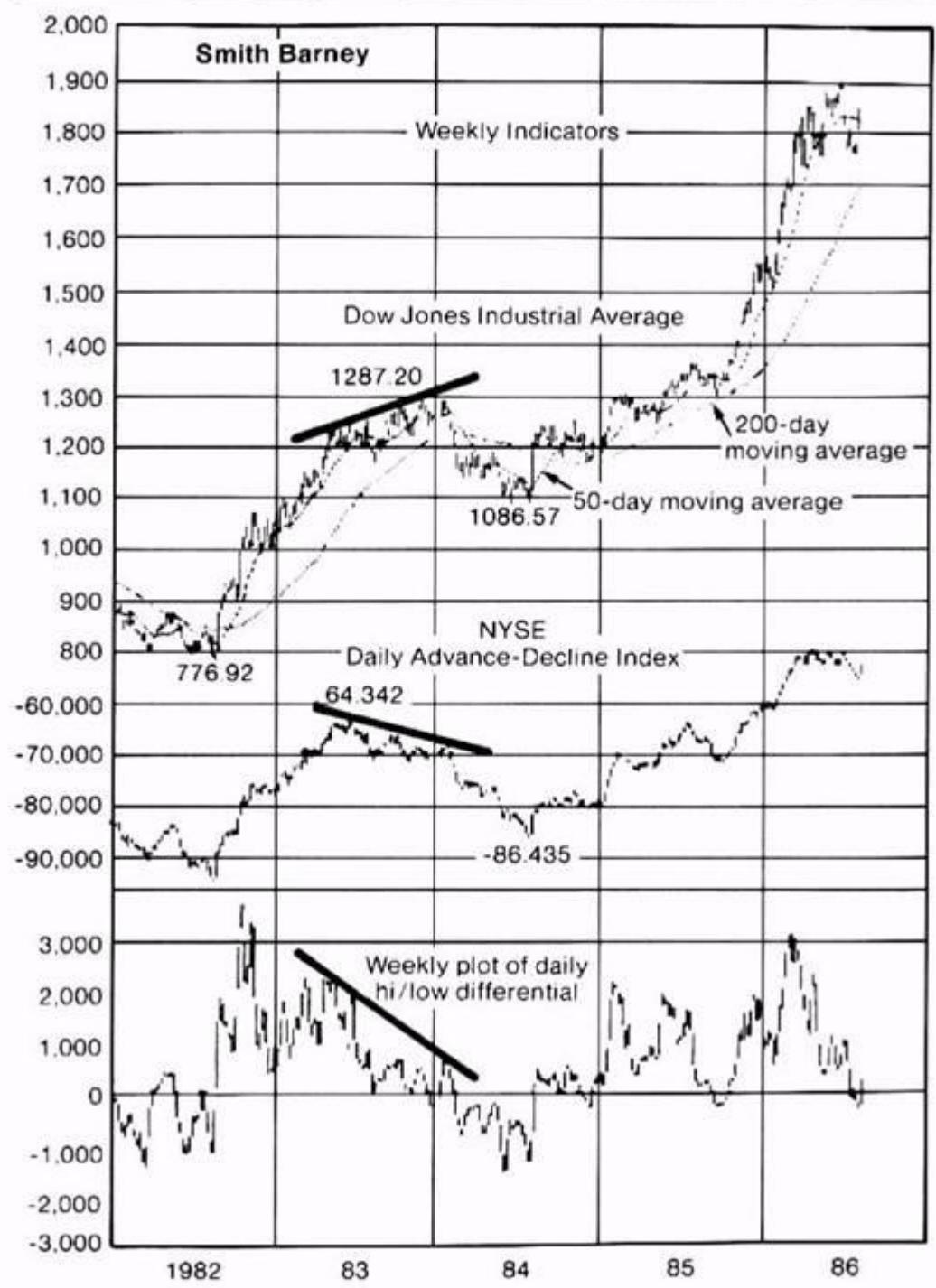
Another simple way to keep tabs on the health of the market is by tracking the number of stocks that are hitting new 12-month highs and lows each day (week). The more common calculation involves a 10-day (week) smooth of the high-low data. An expansion of the indicator in a rising market provides a strong confirmation of the trend. If the averages were to rise without such a high-low expansion, a sign of narrowness would be flashed which could be a negative omen.

You often hear of the market being overbought, or oversold. These are often misused terms in the statistical sense and often merely reflect some observer's feeling for the day. Technicians have statistical methods for determining an overbought state (or oversold), but even here, sometimes we sense a misinterpretation of the data. Actually, in our view, the ability of the market to register an overbought condition during an advance is not a negative, but a positive sign of the vitality of

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**FIGURE 37**

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of the A/D differential creates the indicator. While the thresholds of importance may vary, our approach has been to appreciate a reading of + 1600 as indicating an overbought, with -1600 the level of an oversold. The market student may find a further refinement of the calculation also helpful (e.g., extreme overbought).

To try and understand the implications of an overbought market consider the following example. The hot dog vendor on the corner is setting up his stand about 11 A.M., still some time before the lunch hour crowds. An early line of customers begins to form (demand), and the vendor assesses his inventory of weiners (supply), and sets a price of \$1.00 for the product (quote). A number of things begin to happen. The price must be right as the line begins to lengthen; the demand makes itself felt as the vendor looks into his pot and notes a rapidly dwindling supply. He raises the price again. There's still a good line. He raises the price again. The line now starts to shorten, but not entirely due to his higher price. After all, the demand or appetite for the product is being satisfied as well. Somewhere the combination of higher price, demand satisfaction (if not supply depletion), for the time being, will result in an "overbought" condition for the vendor. A new demand factor, renewed supply, and possibly a lower price may be needed to start the procedure over again. Maybe not the best explanation, but it's kind of what happens in the equity market over and over again.

Volume data are just as important in overview work as in individual stock analyses. Expanding volume in a rising trend tells us that the bull is putting one of his most important tools to work. Volume can be tracked a number of ways. A simple histogram, a running total, or a comparison of daily up-volume to down-volume can be helpful.

We have only touched the tip of the technical iceberg in our indicator discussion. The following bibliography has been carefully put together for your use assuming we have sufficiently whetted your appetite to further explore the world of technical analysis. There are literally hundreds of stock market indicators that can be followed. Some are good, and some are bad. Over recent years the growth of the derivatives (options, futures, and so on) has reduced the importance of a number of heretofore potent and reliable statistics. The monthly short interest, margin debt, odd-lot trading are but three of the more popular series that have been affected by the derivatives. New indicators, particularly on the sentiment front, have evolved thanks to the derivatives. The Put/Call ratio, spread of futures to spot markets are a couple that have a wide following.

All in all, time is the greatest ingredient needed for technical stock market analysis. The average investor will no doubt only be able to follow some of the easiest indicators as he tries to keep tabs on his portfolio as well. Furthermore, technical analysis doesn't stop with the stock market. Technical work can be extremely useful for the bond market (interest rates), commodities, as well as for tracking foreign stock

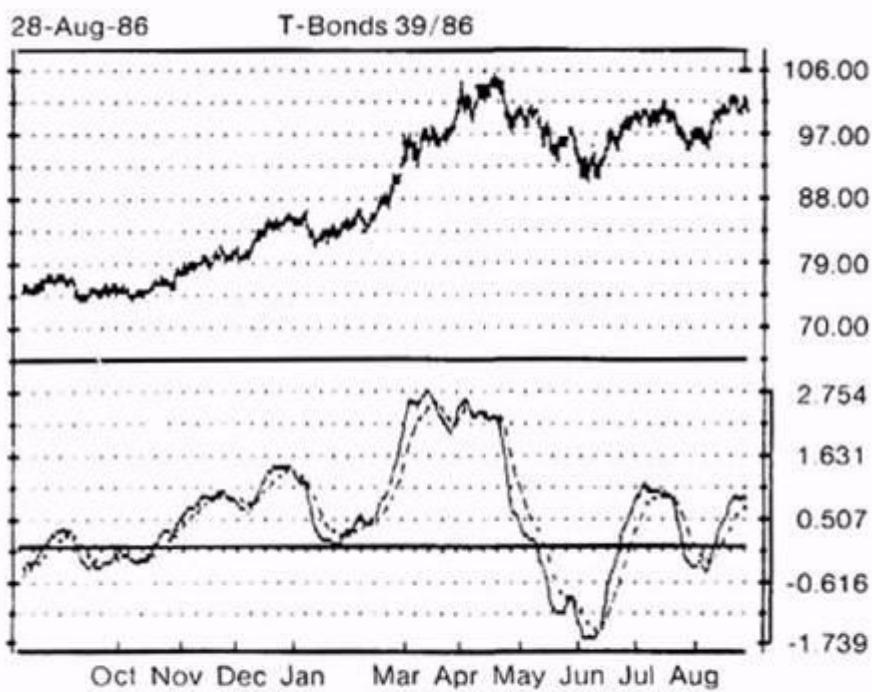
**FIGURE 38**



DOW JONES INDUSTRIAL AVERAGE—  
DAILY BAR CHART WITH 50-  
DAY AND 200-DAY MOVING AVERAGES



S&P 500 COMPANY INDEX—  
DAILY BAR CHART WITH 50-  
DAY AND 200-DAY MOVING AVERAGES

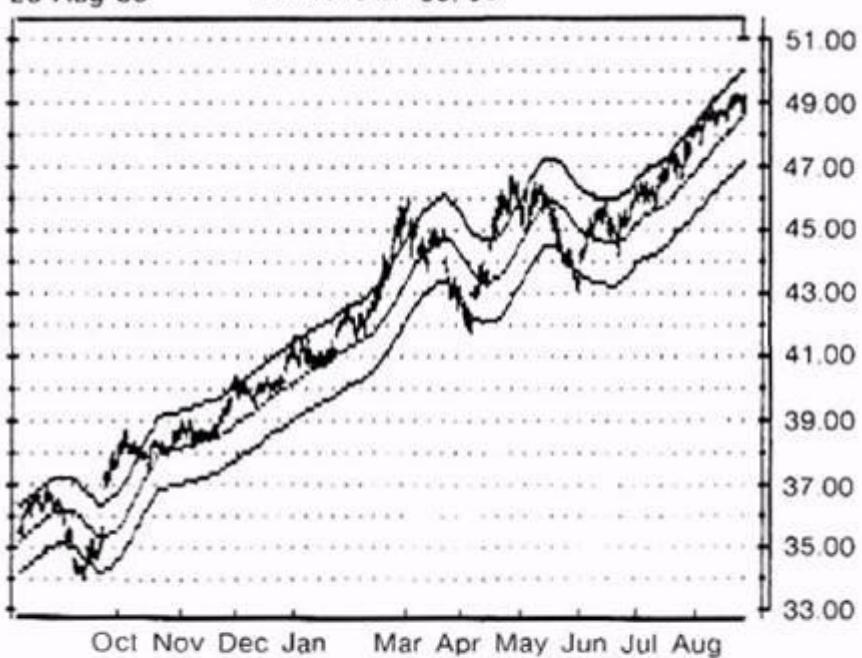



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T-BOND FUTURES—  
PERPETUAL CALCULATION—  
DAILY BAR CHART WITH  
AN EXPONENTIAL MOVING AVERAGE

28-Aug-86

Deutsche M 39/86



DEUTSCHE MARK FUTURES—  
PERPETUAL CALCULATION  
DAILY BAR CHART WITH  
ENVELOPE BANDS

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**FIGURE 39**

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GENERAL MOTORS—  
DAILY BAR CHART  
50- AND 200-DAY MOVING AVERAGES  
VOLUME HISTOGRAM  
RELATIVE STRENGTH TO S&P 500

**FIGURE 39 (Concluded)**



GENERAL MOTORS—  
WEEKLY BAR CHART  
10- AND 30-WEEK MOVING AVERAGES  
VOLUME HISTOGRAM  
RELATIVE STRENGTH TO S&P 500

markets and currencies. As one of my colleagues used to say, "if it moves, we chart it."

The personal computer is becoming a mandatory tool for the average technician or investor to excel. For over two decades the large IBM-type mainframe has provided support for stock screening, indicator testing and computation, and so on. The personal computer allows quick and automated daily, weekly, and monthly reviews. There's a lot of software out there to choose from. Our staff had the pleasure (and sometimes chore) of reviewing over 50 technically oriented software packages recently over a 12-month period. The findings were published in PC Magazine, April 15, 1986. We<sup>1</sup> found some very good programs and some that were so bad there wasn't even sufficient documentation. We advise technical students to request samples, demo disks, or whatever before shelling out hundreds of dollars for something that won't do the job. Of the better software packages, we have found the Compu-Trac system a very helpful and complete technical software package. We close the chapter with a number of computer drawn studies with appropriate labels affixed where necessary {see Figures 38 and 39).

Remember, you needn't buy a stock at the bottom, or sell it at the top to experience profitable stock market transactions. To catch and ride the intervening trends should be sufficient for handsome profits. Investing requires the maintenance of disciplines. And technical analysis, the oldest form of stock market analysis, contains the rigors needed for much of that discipline.

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