

SECTION VIII

THE SWING INDEX

One of the smartest technicians I know put me on the trail of this method with the following statement:

"Somewhere amidst the maze of Open, High, Low and Close prices is a phantom line that is the REAL market. This line is also indicative of the REAL swings the market is making."

After some study, I concluded that if each day's action could be evaluated definitively, within constant parameters, the phantom line could be revealed. The problem was to compare each day's action within the day and with that of the previous day and relate this action to an absolute.

The problem is compounded by the fact that there are no less than 28 points of evaluation within a two day period. The 16 following points can be compared **between the two days**. The subscript "1" is for the first day, the subscript "2" is for the second day:

H ₂ H ₁	H ₂ L ₁	L ₂ O ₁	O ₂ C ₁
L ₂ L ₁	H ₂ O ₁	L ₂ C ₁	C ₂ H ₁
O ₂ O ₁	H ₂ C ₁	O ₂ H ₁	C ₂ L ₁
C ₂ C ₁	L ₂ H ₁	O ₂ L ₁	C ₂ O ₁

The following six points can be compared **within each day**:

H ₁ O ₁	L ₁ O ₁	H ₂ O ₂	L ₂ O ₂
H ₁ L ₁	L ₁ C ₁	H ₂ L ₂	L ₂ C ₂
H ₁ C ₁	O ₁ C ₁	H ₂ C ₂	O ₂ C ₂

After devising and testing innumerable approaches, the following factors were isolated as the most indicative:

For an UP day, the most indicative PLUS factors are as follows:

- (1) Close today above previous close.
- (2) Close today above open today.
- (3) High today above previous close.
- (4) Low today above previous close.
- (5) Previous close above previous open.

For a DOWN day, these same factors would have a MINUS value.

These factors were then weighted and evaluated relative to the highest or lowest possible value and defined on a scale with absolute limits.

- (1) The highest value for a day would be LIMIT UP from a LIMIT UP day.
- (2) The lowest value for a day would be LIMIT DOWN from a LIMIT DOWN day.
- (3) A zero value would be a NO CHANGE day from a NO CHANGE day.
- (4) The absolute limits would be +100 and -100.

The following equation was derived to satisfy these prerequisites:

$$SI = 50 \left[\frac{C_2 - C_1 + .5(C_2 - O_2) + .25(C_1 - O_1)}{R} \right] \frac{K}{L}$$

Now, before we take up the mathematics for this equation, let's look at how the equation evaluates certain plus and minus factors relative to two day's action. Assume the value of a LIMIT move is 3.00.

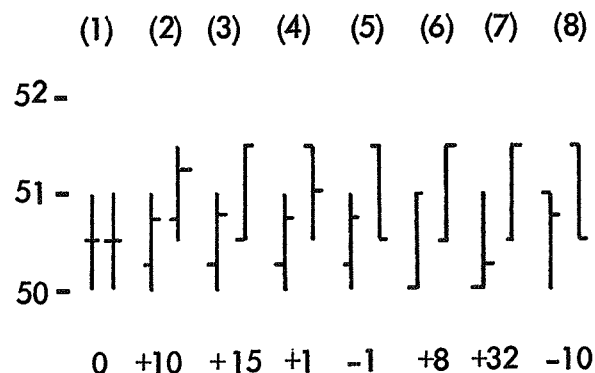


Fig. 8.1

At first glance, the above values may seem contradictory. The highs and lows for every two days are the same, yet the value for the days varies from -10 to +32. However, when each example is evaluated in light of the five PLUS factors as set out previously, then the values fall into place. Example 7 had the most weighted PLUS factors and closed UP the highest from the previous day. In examples 5 and 8, the MINUS factors outweighed the plus factors and each also closed DOWN from the previous day. In fact, most technicians would call both of these days "Key Reversal" days because the second day

- (1) Opened higher
- (2) Had a higher high
- (3) Closed lower

than the first day.

Take a few minutes and study these first eight examples in light of the five PLUS factors.

Now let's look at a few more examples. Assume the same 3.00 limit as the maximum allowable move in either direction from the previous day's close.

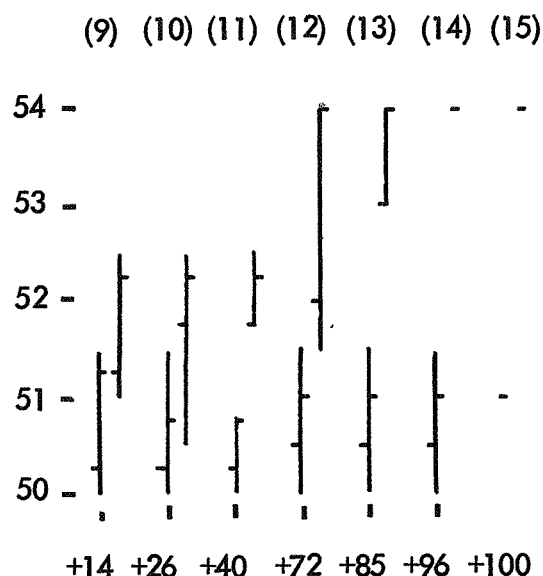


Fig. 8.2

Example 9 The configuration is the same as Example 2; however, the index value is higher because the price moved farther compared to the value of a limit move.

Example 10 The index value is higher than Example 9 because of the higher close compared to the previous day.

Example 11 The opens and closes are identical to Example 10; however, Example 11 has a higher index value because of the GAP caused by the low of Day 2 being **above** the close of Day 1. (In the equation, GAPS are measured between L_2 and C_1 , not L_2 and H_1 as is the common practice.)

Example 12 The close for Day 2 is LIMIT UP; yet the index value is 72, not 100.

Example 13 The close for Day 2 here is also LIMIT UP; yet there was trading below the limit. This larger gap indicates a stronger index value than Example 12.

Example 14 Here the price is locked LIMIT for Day 2 and the index value is greater than the previous LIMIT day which had a trading range.

Example 15 Here is **LOCKED LIMIT** from a **LOCKED LIMIT** day and the equation gives the highest possible value of 100 because there was no trading range for either day.

Now that we have an insight into the rating characteristics of the equation relative to the index value, let's look at another important feature of the **SWING INDEX** equation, that of identifying swings:

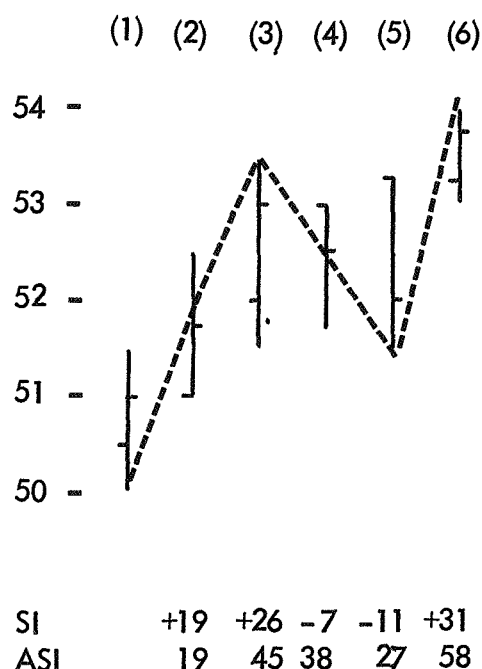


Fig. 8.3

In Fig. 8.3, most technicians would have readily identified the short-term swing as shown. The **SWING INDEX** also identified the swing, Fig. 8.4. This was done by simply accumulating the index value of each day and graphing the results.

The result is the **ACCUMULATIVE SWING INDEX (ASI)**. It is obtained by adding or subtracting (as indicated by the sign + or -) each day's value from the previous **total** value.

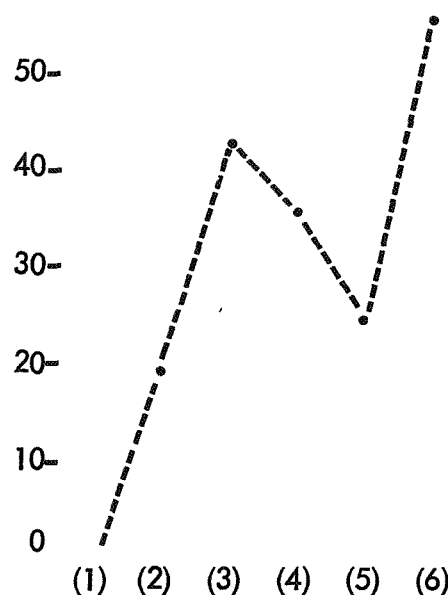


Fig. 8.4

In Fig. 8.4, we start at 0, add to this the value for the second day of +19 and the ASI for Day 2 is +19. On Day 3, the SI is 26. Add this to +19 and the ASI for Day 3 is 45. On Day 4, the SI is -7. Subtract this from 45 and the ASI for Day 4 is 38, etc.

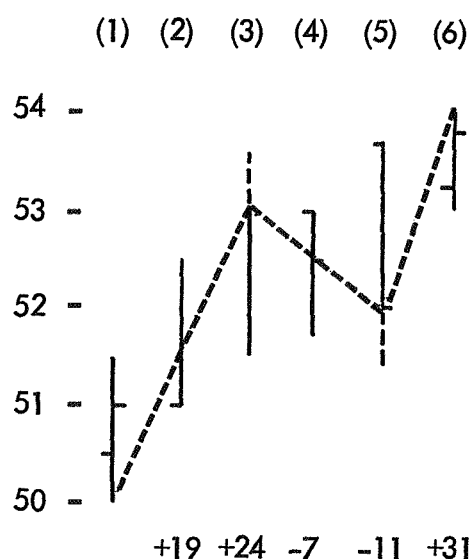


Fig. 8.5

Now look at Fig. 8.5, which is identical to Fig. 8.3 except for the high on Day 3 and the low on Day 5. Most technicians would not have identified this swing; however, by evaluating each day's action, the ASI picks up the swing.

I realize that there are few, if any, definitive rules accepted by every technician for positively identifying swings. In fact, there are probably as many different rules for identifying swings as there are swing systems. Add to these the practitioners of the Elliott Wave Theory and it is obvious that the value of an equation which will identify the short-term swings mathematically without **any rules** is certainly a significant concept.

The implications for being able to plug the four daily prices into an equation which will give a **one number relative value** for the day's trading and also identify precisely all short term swings are far reaching indeed. Those readers who like to use their own creative ability and ingenuity to devise workable systems will have a field day with this concept.

I wanted to take the time to show the reader the value and the results of this equation before explaining it. The reason is that this equation is not overly simple for the non-mathematically inclined; however, solving the equation is only a matter of adding, subtracting, multiplying and dividing.

In the SI equation, use the **ABSOLUTE VALUE** of all terms **except** those in the numerator inside the brackets. The numerator is all terms on the line above R inside the brackets.

SWING INDEX EQUATION (SI)

$$SI = 50 \left[\frac{C_2 - C_1 + .5 (C_2 - O_2) + .25 (C_1 - O_1)}{R} \right] \frac{K}{L}$$

Where K = the largest of:

- (1) $H_2 - C_1$
- (2) $L_2 - C_1$

and L = Value of a limit move in one direction.

To obtain "R", first determine the **largest** of:

- (1) $H_2 - C_1$
- (2) $L_2 - C_1$
- (3) $H_2 - L_2$

If (1) is the largest, $R = (H_2 - C_1) - .5 (L_2 - C_1) + .25 (C_1 - O_1)$

If (2) is the largest, $R = (L_2 - C_1) - .5 (H_2 - C_1) + .25 (C_1 - O_1)$

If (3) is the largest, $R = (H_2 - L_2) + .25 (C_1 - O_1)$

Where:

O_1 = Yesterday's Open
 H_1 = " High
 L_1 = " Low
 C_1 = " Close

O_2 = Today's Open
 H_2 = " High
 L_2 = " Low
 C_2 = " Close

Now let's work out an example using the following prices:

	Open	High	Low	Close
Day 1	50.50	52.00	50.00	51.50
Day 2	51.80	53.00	51.30	52.80

First we will obtain the numerator: (N)

$$N = C_2 - C_1 + .5 (C_2 - O_2) + .25 (C_1 - O_1)$$

(Substituting)

$$\begin{aligned} N &= 52.80 - 51.50 + .5 (52.80 - 51.80) + .25 (51.50 - 50.50) \\ &= 1.3 + .5 (1.00) + .25 (.100) \\ &= 1.3 + .50 + .25 \end{aligned}$$

$$N = 2.05$$

We will put the numerical equivalents in the SI Equation as they are obtained. We will assume the LIMIT (L) is 3.00. So far:

$$SI = 50 \left[\frac{2.05}{3.00} \right]$$

K = the greater of:

- or:
- (1) $H_2 - C_1$: substituting $53.00 - 51.50 = 1.50$
 - (2) $L_2 - C_1$: substituting $51.30 - 51.50 = .20$ (ABS)

K therefore is 1.50.

$$SI = 50 \left[\frac{2.05}{3.00} \right] \left[\frac{1.50}{3.00} \right]$$

To obtain R, first determine the **largest** of:

- (1) $H_2 - C_1$: substituting $53.00 - 51.50 = 1.50$
- (2) $L_2 - C_1$: substituting $51.30 - 51.50 = .20$ (ABS)
- (3) $H_2 - L_2$: substituting $53.00 - 51.30 = 1.70$

Since (3) above is the largest, we will find R by substituting in R (3) equation.

$$\begin{aligned} R &= H_2 - L_2 + .25 (C_1 - O_1) \\ R &= 53.00 - 51.30 + .25 (51.50 - 50.50) \\ R &= 1.70 + .25 (.100) \\ R &= 1.70 + .25 \\ R &= 1.95 \end{aligned}$$

Now we have all of the terms for the SI equation.

$$SI = 50 \left[\frac{N}{R} \right] \left[\frac{K}{L} \right]$$

$$SI = 50 \left[\frac{2.05}{1.95} \right] \left[\frac{1.50}{3.00} \right]$$

First divide the numbers inside the brackets

$$SI = 50 \left[1.05 \right] .50$$

Now multiply the three numbers together:

$$SI = 50 \times 1.05 \times .50$$

$$SI = 26.25$$

And round off to the nearest whole number: $SI = 26$

There are some short cuts that can be taken. For instance, when we determined the value for K we used these same values in addition to $H_2 - L_2$ to determine which of the three equations to use for R. Also the $.25 (C_1 - O_1)$ term in the R equation had already been obtained as one of the terms in the numerator.

Now let's use these short cuts and find the SI for a DOWN day:

	Open	High	Low	Close
Day 1	53.50	54.00	52.00	52.50
Day 2	52.00	52.00	51.00	51.00

First, obtain the numerator: (N)

$$N = C_2 - C_1 + .5 (C_2 - O_2) + .25 (C_1 - O_1)$$

$$\text{Substituting: } 51.00 - 52.50 + .5 (51.00 - 52.00) + .25 (52.50 - 53.50)$$

$$= -1.50 + .5 (-1.00) + .25 (-1.00)$$

$$= -1.50 - .50 - .25$$

$$N = -2.25$$

Note the term $51.00 - 52.50$ is -1.50 . Also, a plus number times a minus number gives a minus number as an answer.

$$\text{as: } +.5 (-1.00) = -.50$$

So far, our SI Equation is:

$$SI = 50 \left[\frac{N}{R} \right] \left[\frac{K}{L} \right]$$

$$SI = 50 \left[\frac{-2.25}{3.00} \right] \left[\frac{K}{L} \right]$$

The numerator is the only term in which we **do not** use absolute values. (Remember from previous chapters, the absolute value of a plus (+) number being subtracted from a minus (—) number is the difference with the sign of the larger number.)

K = the largest of:

- (1) $H_2 - C_1$: substituting $52.00 - 52.50 = .50$ (ABS)
- (2) $L_2 - C_1$: substituting $51.00 - 52.50 = 1.50$ (ABS)

K = 1.50 (the largest absolute value)

To find the equation to use for R, first determine the largest of:

- (1) $H_2 - C_1$: found above = .50
- (2) $L_2 - C_1$: found above = 1.50
- (3) $H_2 - L_2$: substituting $52.00 - 51.00 = 1.00$

The largest value is in (2) above, so we use the R(2) equation to find R.

$$R = (L_2 - C_1) - .5 (H_2 - C_1) + .25 (C_1 - O_1)$$

We found in obtaining the numerator that $.25 (C_1 - O_1)$ was $-.25$. The absolute value is .25 therefore;

$$\begin{array}{rclclcl} R & = & (51.00 - 52.50) & - & .5 & (52.00 - 52.50) & + & .25 \\ R & = & 1.50 & - & .5 & (-.50) & + & .25 \\ R & = & 1.50 & & & -.25 & + & .25 \\ R & = & 1.50 & & & & & \end{array}$$

therefore:

$$\begin{array}{rcl} SI & = & 50 \left[\frac{-2.25}{1.50} \right] \left[\frac{1.50}{3.00} \right] \\ SI & = & 50 \left[-1.50 \right] .50 \\ SI & = & -37.50 \end{array}$$

Note that the sign (+ or —) of the SI is determined by the numerator. If the numerator has a —sign, the index will be minus. If the numerator has a +sign, the index will be plus.

Now for the benefit of those who find the mathematics of the equation a bit tedious, let's look at the work sheet with a set of "cook book" instructions which will work this equation. The headings on the work sheet indicate when to use the absolute value ABS (when to drop the minus sign) and when to use the + or — value (when to keep the minus sign). The following is for the second day on the work sheet.

USE ABSOLUTE VALUES

Put $H_2 - C_1$ in Column #1
 Put $L_2 - C_1$ in Column #2
 Put $H_2 - L_2$ in Column #3
 Put $C_1 - O_1$ in Column #4

$44.00 - 41.50 = 2.50$
 $42.00 - 41.50 = .50$
 $44.00 - 42.00 = 2.00$
 $41.50 - 40.50 = 1.00$

USE +/- VALUES

Put $C_2 - C_1$ in Column #5
 Put $C_2 - O_2$ in Column #6
 Put $C_1 - O_1$ in Column #7

$$\begin{aligned} 43.00 - 41.50 &= 1.50 \\ 43.00 - 42.00 &= 1.00 \\ 41.50 - 40.50 &= 1.00 \end{aligned}$$

$$\begin{aligned} N &= \text{Col. \#5} & + & \frac{1}{2} (\text{Col. \#6}) & + & \frac{1}{4} (\text{Col. \#7}) \\ &= 1.50 & + & \frac{1}{2} (1.00) & + & \frac{1}{4} (1.00) \\ &= 1.50 & + & .50 & + & .25 \\ N &= 2.25 \end{aligned}$$

Put N in Column #8.

Find the largest number in Column #1 or Column #2.

Put this in Column #9 (2.50).

Find the largest number in Columns #1, #2, or #3

If in #1, $R = \text{Col. \#1} - \frac{1}{2} (\text{Column \#2}) + \frac{1}{4} (\text{Column \#4})$
 If in #2, $R = \text{Col. \#2} - \frac{1}{2} (\text{Column \#1}) + \frac{1}{4} (\text{Column \#4})$
 If in #3, $R = \text{Col. \#3} + \frac{1}{4} (\text{Column \#4})$

Since the largest number is in Column #1, we substitute in the R(1) equation.

$$\begin{aligned} R &= 2.50 - \frac{1}{2} (.50) + \frac{1}{4} (1.00) \\ R &= 2.50 - .25 + .25 \\ R &= 2.50 \end{aligned}$$

Put R in Column #10 (2.50).

Put the LIMIT in Column #11 (3.00).

$$\begin{aligned} SI &= 50 \left[\frac{\text{Column 8}}{\text{Column 10}} \right] \left[\frac{\text{Column 9}}{\text{Column 11}} \right] \\ &= 50 \left[\frac{2.25}{2.50} \right] \left[\frac{2.50}{3.00} \right] \\ &= 50 \left[.90 \right] \left[.83 \right] \\ &= 50 \times .90 \times .83 \\ &= 37.35 \end{aligned}$$

Round off to the nearest whole number:

$$SI = 37$$

Now let's follow the procedure on the work sheet for a DOWN day. Day 2 (today) is the third day on the work sheet; Day 1 (yesterday) is the second day on the work sheet.

USE ABSOLUTE VALUES

Put $H_2 - C_1$ in Column #1	$43.50 - 43.00 = .50$
Put $L_2 - C_1$ in Column #2	$41.50 - 43.00 = 1.50(\text{ABS})$
Put $H_2 - L_2$ in Column #3	$43.50 - 41.50 = 2.00$
Put $C_1 - O_1$ in Column #4	$43.00 - 42.00 = 1.00$

USE +/- VALUES

Put $C_2 - C_1$ in Column #5	$42.00 - 43.00 = -1.00$
Put $C_2 - O_2$ in Column #6	$42.00 - 42.80 = -.80$
Put $C_1 - O_1$ in Column #7	$43.00 - 42.00 = 1.00$

$$\begin{aligned}
 N &= \text{Col. \#5} + \frac{1}{2} (\text{Column \#6}) + \frac{1}{4} (\text{Column \#7}) \\
 &= -1.00 + \frac{1}{2} (-.80) + \frac{1}{4} (1.00) \\
 &= -1.00 + -.40 + .25 \\
 N &= -1.15
 \end{aligned}$$

Put N in Column #8 (-1.15).

Find the largest of Column #1 or Column #2 (1.50).

Put K in Column #9 (1.50).

Use R(3) equation because Column #3 is the largest of Columns #1, #2, or #3.

$$\begin{aligned}
 R &= \text{Column \#3} + \frac{1}{4} (\text{Column \#4}) \\
 &= 2.00 + \frac{1}{4} (1.00) \\
 &= 2.00 + .25 \\
 R &= 2.25
 \end{aligned}$$

Put R in column #10 (2.25).

Put the LIMIT in Column #11 (in this example, 3.00)

$$\begin{aligned}
 SI &= 50 \left[\frac{\text{Column 8}}{\text{Column 10}} \right] \left[\frac{\text{Column 9}}{\text{Column 11}} \right] \\
 &= 50 \left[\frac{-1.15}{2.25} \right] \left[\frac{1.50}{3.00} \right] \\
 &= 50 \times -51 \times 50 \\
 &= -12.75 \\
 &= -13 \quad (\text{rounded off to the nearest whole number})
 \end{aligned}$$

The ASI is the ACCUMULATIVE SWING INDEX which is obtained by accumulating each day's SI as indicated by the sign (+ or —) of the latest SI. The accumulative index may be either minus or plus. If the long-term trend is **up**, the accumulative index will be a plus. If the long-term trend is **down** the accumulative index will be a minus. If the long-term trend is non-directional, the ASI will fluctuate from plus to minus.

In the work sheet example, the ASI is the same as the SI on the first day. On the second day, the SI of —13 subtracted from the previous ASI of 37 makes the ASI 24 for the second day, etc.

At the top of the work sheet are brief instructions for obtaining the SI and the ASI using only the work sheet with the column headings and the open, high, low and close prices for the day. By using the work sheet in this manner, even the non-mathematically inclined should have little problem in obtaining the SI and ASI for each trading day. It's like "cook book" engineering. Simply fill in the columns, follow the instructions and it all falls into place.

On the work sheet, the columns have been left blank for days 4 through 8 for those who would like to stop at this point and solve the equation for those five days. The correct answers for each day are filled in under the SI and ASI columns. As with all systems and indexes in this book, there is a blank work sheet for this system in the Appendix. This work sheet can be removed and reproduced on a copier for following the markets on a daily basis.

Let's pause for a minute at this point and consider the significance of the SWING INDEX. The SWING INDEX gives us a numerical value for each day's trading which will always fall between 0 and +100 or 0 and —100. Second, the SWING INDEX gives us definitive short-term swing points. Third, the SWING INDEX gives us a line which cuts through the maze of high, low and close prices and indicates the real strength and direction of the market. Many good systems and

methods could be devised based on **one** or a **combination** of these indicators. Those who already use a good swing method or wave method can use this index as an additional tool to indicate by simple mathematics the short-term swings without spending a lot of time with the rules trying to figure out whether a swing is a swing or not. The SWING INDEX can also be used supplementary to other methods as a breakout indicator. A breakout is indicated when the value of the ASI **exceeds** the ASI value on the day when a previous significant HIGH SWING POINT was made. A downside breakout would be indicated when the value of the ASI drops **below** the ASI value on a day when a previous significant LOW SWING POINT was made.

When the SWING INDEX is plotted on the same chart as the daily bar chart, trend lines drawn on the ASI can be compared to trend lines drawn on the bar chart. For those who know how to draw meaningful trend lines, the ASI can be a good tool to confirm trend-line breakouts. Often erroneous breaking of trend lines drawn on bar charts will not be confirmed by the trend lines drawn on the ASI. Since the ASI is heavily weighted in favor of the close price, a quick run up or down during a day's trading does not adversely affect the index.

The system I have devised using the ACCUMULATIVE SWING INDEX is a very simple swing system. The swing points are the HIGH SWING POINTS and LOW SWING POINTS as indicated by the ASI.

SWING INDEX SYSTEM

Initially, the market is entered on a breakout. For instance, we would go **LONG** (Fig. 8.6) the next day when the value of the ASI exceeded the value posted on the day of a previous significant HIGH SWING POINT; or go **SHORT** (Fig. 8.7) the next day when the ASI dropped below the ASI on a day that a previous significant LOW SWING POINT was made.

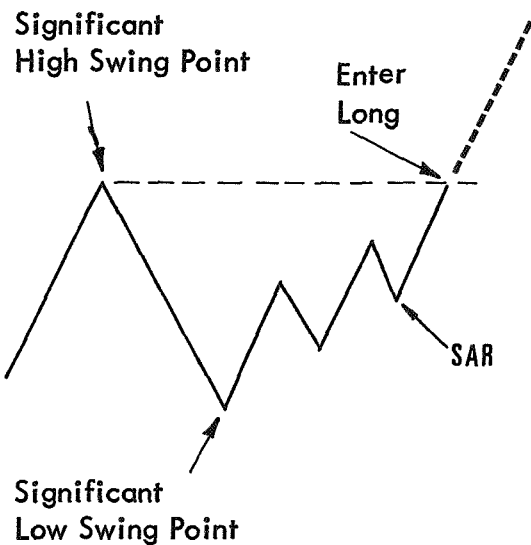


Fig. 8.6

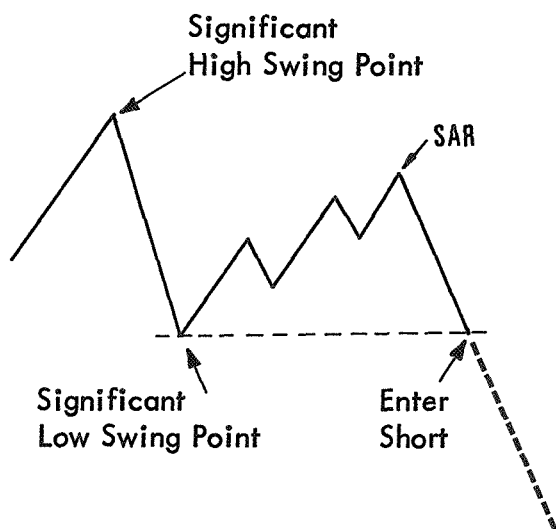


Fig. 8.7

Once in the market, we use the previous swing point as the INDEX STOP AND REVERSE (SAR). If **LONG**, the INDEX SAR is the previous **LOW SWING POINT**. If **SHORT**, the INDEX SAR is the previous **HIGH SWING POINT**. In addition, we use an INDEX SAR trailing stop which is 60 points on the ASI from the extreme favorable ASI high (if **LONG**) and from the extreme favorable ASI low (if **SHORT**). This 60 point trailing SAR is 60 points on the **ACCUMULATIVE SWING INDEX**. The 60 points are **NOT** in terms of the **PRICE** of the commodity being followed.

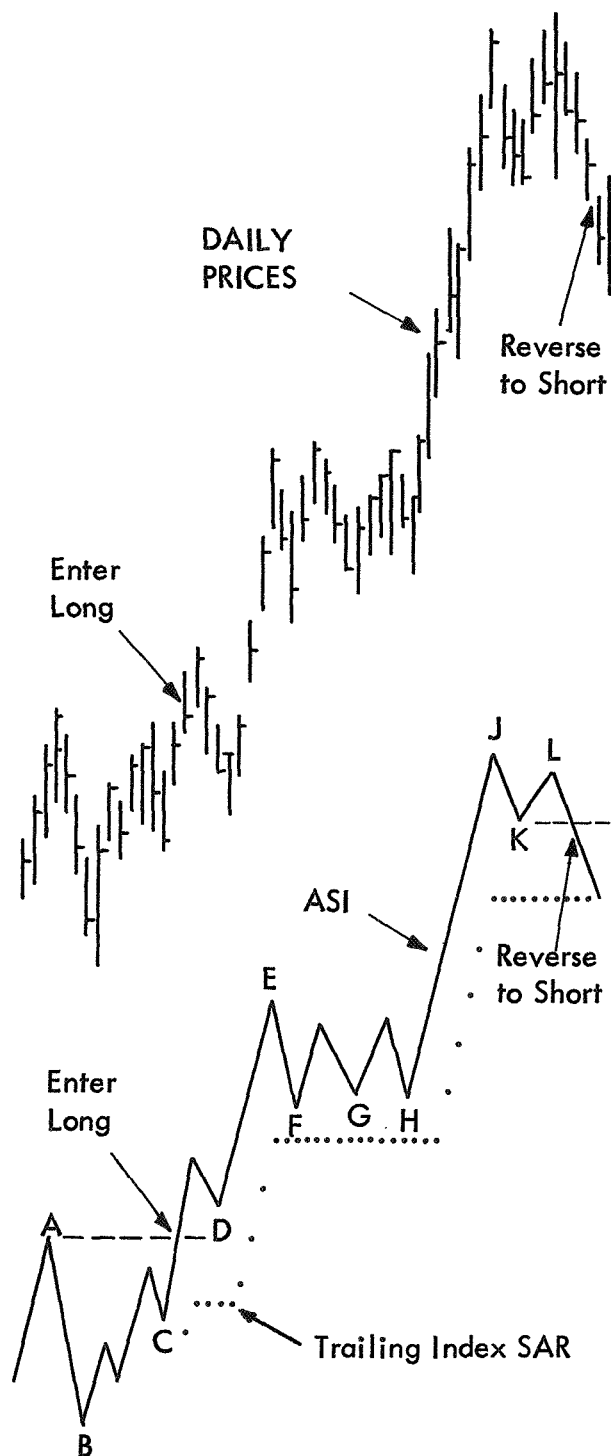


Fig. 8.8

We go **LONG** initially (Fig. 8.8) when the ASI exceeds the ASI at the significant **HIGH SWING POINT** (A). The INDEX SAR is point (C) since this is a closer stop than the 60 point trailing INDEX SAR. When point (D) is formed, the INDEX SAR becomes point (D).

There is one more important rule which must be followed in order to cut down the whipsaws when the market stalls; if we are in a **LONG** trade, as in the example, use the **first** LOW SWING POINT after a new HIGH SWING POINT as the INDEX SAR. Then keep the INDEX SAR at this point until the ASI makes a **new high**. After the new high is made, then the **first** LOW SWING POINT formed after the new high becomes the new INDEX SAR.

In Fig. 8.8, after the ASI made a new high at (E), the first LOW SWING POINT was formed at (F). We moved the INDEX SAR to (F) as soon as this point was defined and left it there until the ASI made a new high at point (J) and then reacted to point (K). Notice that the 60 point trailing INDEX SAR levels out after every new HIGH SWING POINT is made because the trailing stop is **always** measured from the most favorable ASI point. The 60 point trailing INDEX SAR is always a Stop and Reverse.

Point (K) is the first LOW SWING POINT after making a new HIGH SWING POINT. The ASI then moves up to (L), making a classic failure swing and then breaks below the INDEX SAR at (K) where we reverse and go **SHORT**. After going **SHORT**, the INDEX SAR is the previous HIGH SWING POINT at (L) because it is closer than the 60 point trailing INDEX SAR.

Now let's pick up the **SHORT** trade on Fig. 8.9. The ASI made a new LOW SWING POINT at (A). The **first** HIGH SWING POINT after making the new low is point (B), which becomes the SAR. Now watch what happens here. The ASI drops to point (D) then forms the **first** HIGH SWING POINT at (E). The ASI then drops straight down to point (F) and reacts straight up. Since no swing points were formed between (E) and (F), the 60 point ASI trailing stop becomes the closest INDEX SAR. We reverse to **LONG** at the trailing stop.

After making the new high for the trade at point (G), the **first** LOW SWING POINT is (H) which remains the INDEX SAR until the ASI makes a new HIGH SWING POINT and then the first LOW SWING POINT is formed. The INDEX

SAR is then the **first** LOW SWING POINT after the new HIGH SWING POINT is made.

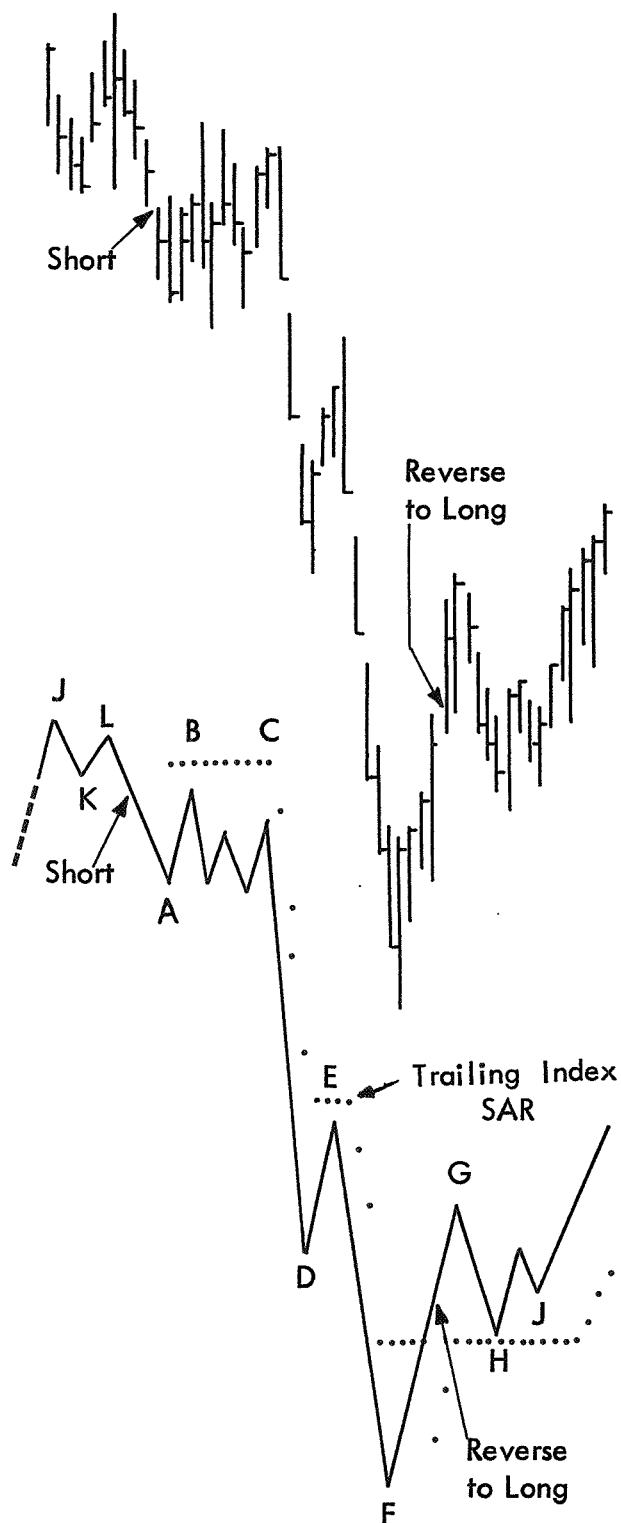


Fig. 8.9

I have explained this system by referring to LOW SWING POINTS and HIGH SWING POINTS for simplicity. All of the swing points are made by the ACCUMULATIVE SWING INDEX (ASI). In following this system on the work sheet, I have used the abbreviation LSP for LOW SWING POINT and HSP for HIGH SWING POINT. This abbreviation is put in the SI column beside the swing index value for the day the LSP and HSP is made. Of course, the swing point cannot be determined until the next day after it occurs.

Now that you understand the concept of this system, there is one thing left to define; that is, the relationship of the HSP, LSP and the INDEX SAR (made by the SWING INDEX) to the actual HIPS and LOPS (made by the price). We have to know which price points correspond to HSPs and LSPs and INDEX SARs in order to ascertain the exact market price to enter and exit the trade.

In effect, what we are really doing is **trading the line** which is made by connecting the ACCUMULATIVE SWING INDEX points for each day. The ENTRY, EXIT and REVERSE signals do not come from price points directly; the signals come from the SWING INDEX points generated by the SI equation.

Once the signal has been made by the ASI, it is then necessary to translate the signal points into price action points.

The price action points which correspond to the HSPs and LSPs on the SWING INDEX are the HIPS and LOPs (as previously defined) which are made by the daily prices.

Remember, a HIP is a daily high price with a lower daily high price the day before it and the day after it. A LOP is a daily low price with a higher daily low price the day before it and the day after it.

Usually the HIP will occur on the same day as the HSP. In this case, the HIP is the SAR and is simply the highest price made on that day. If the lowest price occurs on the same day as the LSP, then the lowest price made that day, the LOP, is the SAR.

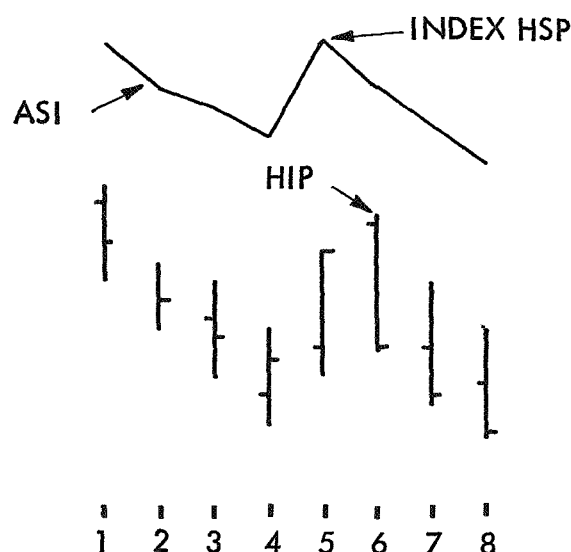


Fig. 8.10

In Fig. 8.10, the HSP occurred on Day 5; however, the HIP was made on Day 6. Although the price was higher on Day 6 than on Day 5, Day 6 will show up on the SWING INDEX as a minus (—) value . . . which it should . . . because it opened high, closed low, and also closed significantly lower than the previous day's close.

In Fig. 8.10, if we were *SHORT*, it is obvious that we would want to use the HIP on Day 6 as our SAR rather than the High on Day 5 which corresponds with the HSP.

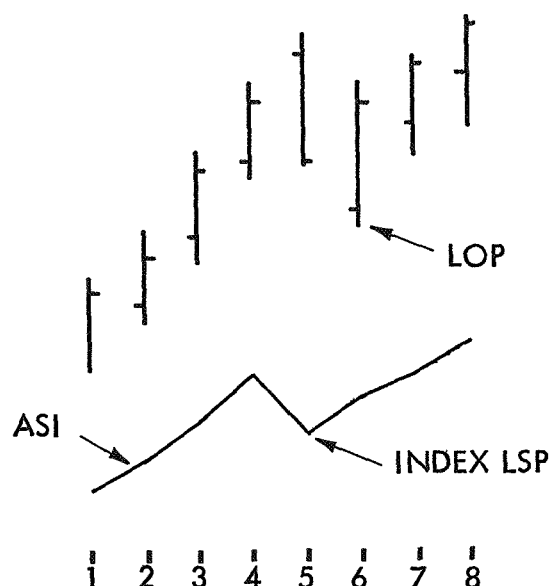


Fig. 8.11

In Fig. 8.11, the LOP is made on Day 6, but the LSP is made on Day 5. It is not unusual for the HSP and LSP to precede the HIP and LOP (made by the price) by one day.

In Fig. 8.11, if we were *LONG*, we would want to use the LOP made on Day 6 as our SAR even though the LSP occurred on Day 5.

As long as the HIP made by the price occurs on the same day as the HSP, then both the HIP and the HSP are recognized the next day after the high is made. However, suppose we are *SHORT* as in Fig. 8.10, and the market has closed on Day 6. The index HSP has formed, but we do not have a corresponding HIP. What SAR do we give our broker for Day 7? The answer is that we give him the high price made on Day 6. **We must assume that the HSP has preceded the HIP by one day.**

If we were *LONG*, as in Fig. 8.11, the same reasoning would apply to the LOP as shown. The SAR is the low price made on Day 6.

Now suppose our closest SAR is determined by the 60 point trailing INDEX SAR. Let's say that the market has closed and we calculate the ASI for the day and find that since the ASI high point was made, we have accumulated —65 points against the *LONG* position as illustrated in Fig. 8.12. What do we do? **We do not reverse on the open the next day.** We use the **lowest price** made since we began counting the 60 point drop on the ASI as our SAR. As will usually be the case, the SAR is the **low made today.**

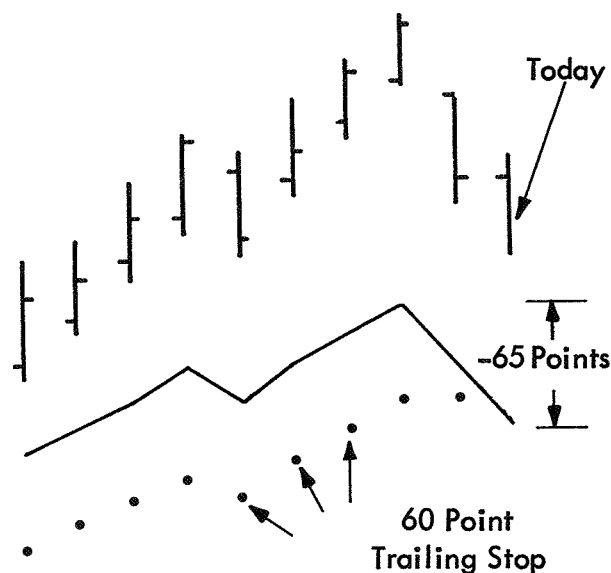


Fig. 8.12

In using this system, I have found that many times the price will turn around the next day and go to new highs without going through the low made on the day that —60 or more points was calculated. Also, I refrain from placing my order the next day until about five minutes after the open, if the price action is near my order. The first and last five minutes of trading are the most likely times for meaningless wide swings to pick off a stop order. Personally, I just don't like to give them something to "shoot at" on the open if my order is near the price action. Sometimes I even change a regular "stop" order to a "Stop on Close Only" order about 15 minutes before the close if the market action is near my order.

On the following pages are the definitions and rules for the SWING INDEX SYSTEM, which will be followed by a work sheet example and explanation.

DEFINITIONS

HSP	A HIGH SWING POINT is defined by the Accumulative Swing Index as any day with an ASI number that is higher than the ASI number the day before it and the day after it.
LSP	A LOW SWING POINT is defined by the Accumulative Swing Index as any day with an ASI number that is lower than the ASI number the day before it and the day after it.
SI	The SWING INDEX number generated by the Swing Index equation for a particular day.
ASI	The ACCUMULATIVE SWING INDEX number obtained for each day by adding or subtracting (as applicable) that day's SI number from the previous day's ASI number.
INDEX SAR	The STOP AND REVERSE points generated by the swing points of the ASI.
SAR	The STOP AND REVERSE points applicable to the price.
TRAILING INDEX SAR	An ASI number which is 60 ASI POINTS behind the most favorable ASI number while in the trade.

RULES SWING INDEX SYSTEM

INITIAL ENTRY

- A. Enter *LONG* when the ASI crosses **above** the previous significant HSP.
- B. Enter *SHORT* when the ASI crosses **below** the previous significant LSP.

INDEX STOP AND REVERSE (SAR)

- A. *LONG*.
 - (1) Immediately after being reversed to *LONG* the SAR is the previous LSP.
 - (2) Thereafter, the SAR is the **first** LSP after a new HSP is made for the trade.
- B. *SHORT*.
 - (1) Immediately after being reversed to *SHORT*, the SAR is the previous HSP.
 - (2) Thereafter, the SAR is the **first** HSP after a new LSP is made for the trade.

INDEX

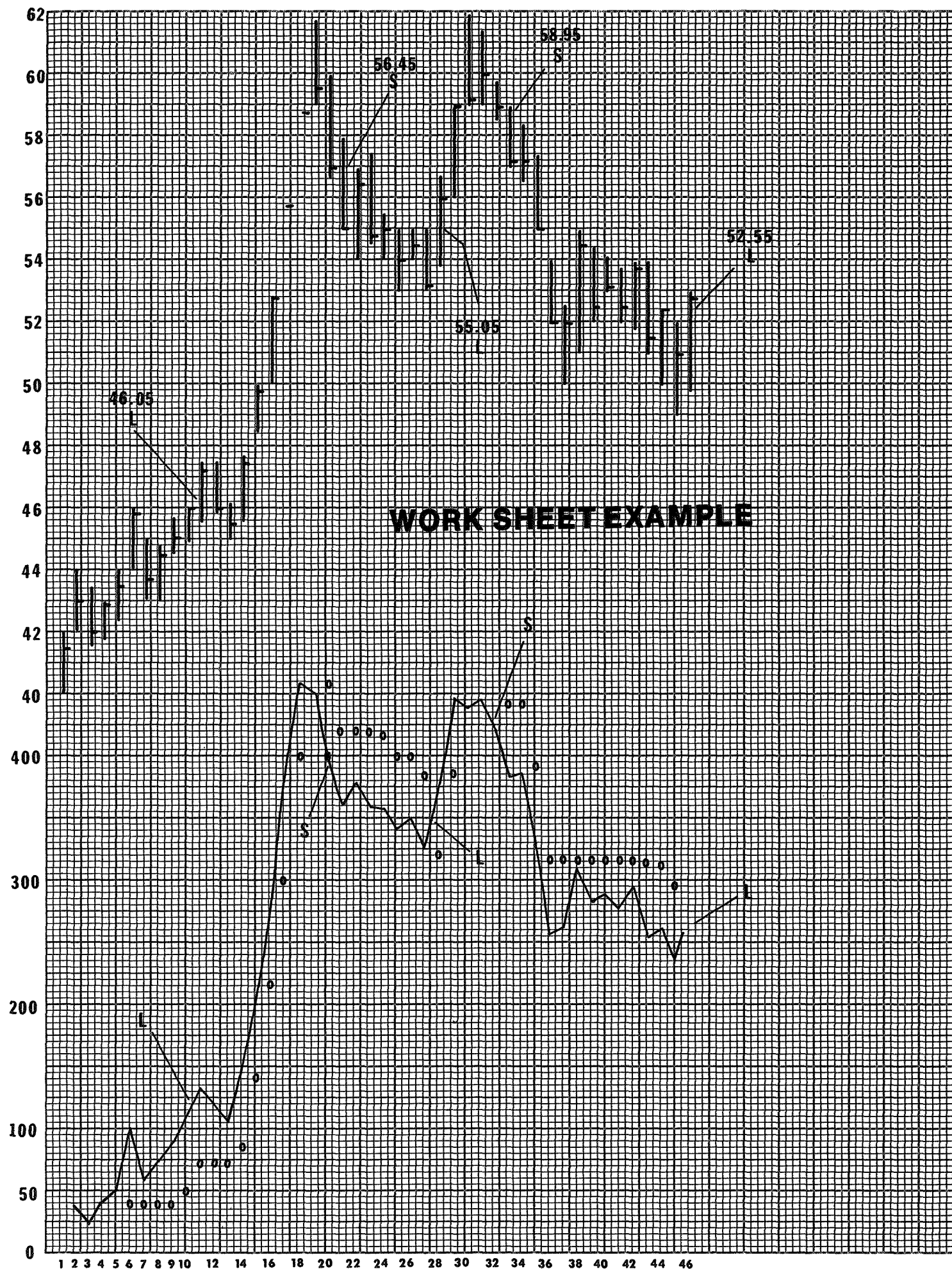
TRAILING STOP AND REVERSE (SAR)

- A. *LONG*: The SAR is the **lowest daily low** made between the highest HSP and the close of the day on which the ASI decreased 60 points or more.
- B. *SHORT*: The SAR is the **highest daily high** made between the lowest LSP and the close of the day on which the ASI increased 60 points or more.

Note: The RULES are given in accordance with the ACCUMULATIVE SWING INDEX only, and must be correlated with the PRICE ACTION POINTS as explained in the text.

SWING INDEX SYSTEM — WORK SHEET EXAMPLE

- Day 10 The previous significant HSP was 104 (Col. #13) made on Day 6. The HIP of 46.00 was also made on Day 6. On Day 10, the ASI exceeded 104 for the first time. We therefore entered an order on Day 11 to Buy at 46.05 (a tick or two above 46.00). The entry stop point is 43.00, which is the LOP, the lowest low price which corresponds to the previous LSP made on Day 7.
- Day 14 The **first** LSP was formed after a new high of 133 on the ASI. Note that the LSP made by the ASI occurred on the same day as the LOP made by the price. On Day 14, the SAR therefore is the low of 45.00 made on Day 13. From there, the price moved straight up to 61.80 on Day 19.
- Day 20 The ASI has backed up a total of 64 points without making an LSP after the ASI high of 459, thus triggering the trailing INDEX SAR. The lowest low price made between the highest ASI (while in the trade) and the close on Day 20 is, as usual, the **low** on Day 20. We therefore enter our SAR on Day 21 of 56.45 which is a tick or two below the lowest low.
- Day 21 Our SAR at 56.45 is touched off and we are *SHORT* at 56.45. Our new SAR, the previous HSP, is the HIP made on Day 19 at 61.80.
- Day 23 An HSP is identified as having occurred on Day 22. The HIP, however, is not recognized on Day 23. We therefore assume the HSP preceded the HIP by one day so we use the HIP made on Day 23 as our SAR. The HSP on Day 20 is the **first** HSP after a new LSP was made by the ASI on Day 21. The SAR is now 57.50 plus a tick or two.
- Day 27 The ASI made a new low, 340, on Day 25 and the first HSP is now identified as having occurred on Day 26. The HIP of 55.00 is the same for Days 26 and 27, so 55.00 becomes the new SAR.
- Day 28 The price went through our SAR and we are *LONG* at 55.05. Our new SAR is the LOP corresponding to the previous LSP made on Day 27. The SAR is therefore 53.00.
- Day 31 After making a new high for the trade, 447 HSP on Day 29, the first LSP was identified on Day 31. The SAR which corresponds to the LSP is 59.00.
- Day 32 We are *SHORT* at 58.95. The SAR which corresponds to the previous HSP is 61.50.
- Day 35 The ASI made a new low for the trade, 383, on Day 33 and then swung up and made the **first** HSP on Day 34 at 385. This HSP is identified on Day 35 and the corresponding SAR is 58.50.
- Day 39 The ASI made a new low for the trade, 257, on Day 36. The **first** HSP is now recognized at 310, made on Day 38.
- Day 41 An HSP is identified as having occurred on Day 40; however, since it was not preceded by a new ASI low for the trade, the SAR remains at 55.00.



DAILY WORK SHEET

SWING INDEX SYSTEM

					← USE ABSOLUTE VALUE →				← USE + OR - VALUE →			
DATE	OPEN	HIGH	LOW	CLOSE	(1) H2-C1	(2) L2-C1	(3) H2-L2	(4) C1-O1	(5) C2-C1	(6) C2-O2	(7) C1-O1	(8) N
1	40.50	42.00	40.00	41.50								
2	42.00	44.00	42.00	43.00	2.50	.50	2.00	1.00	1.50	1.00	1.00	2.25
3	42.80	43.50	41.50	42.00	.50	1.50	2.00	1.00	-1.00	-.80	1.00	-1.15
4	41.70	43.00	41.70	42.90								
5	43.00	44.00	42.30	43.50								
6	44.50	(46.00)	44.00	45.80								
7	44.80	45.00	(43.00)	43.50								
8	43.00	44.80	(43.00)	44.50								
9	44.70	45.70	44.50	45.00	1.20	0	1.20	1.50	.50	.30	1.50	1.03
10	45.00	46.00	44.90	46.00	1.00	.10	1.10	0	1.00	1.00	.30	1.58
11	45.80	47.50	45.50	47.20	1.50	.50	2.00	1.00	1.20	1.40	1.00	2.15
12	47.00	47.50	45.80	46.00	.30	1.40	1.70	1.40	-1.20	-1.00	1.40	-1.35
13	46.20	46.20	(45.00)	45.50	.20	1.00	1.20	1.00	-1.00	-.70	-1.00	-1.10
14	45.80	47.70	45.50	47.50	2.20	0	2.20	.70	2.00	1.70	-.70	2.67
15	48.50	50.00	48.40	49.80	2.50	.90	1.60	1.70	2.30	1.30	1.70	3.38
16	50.00	52.80	50.00	52.80	3.00	.20	2.80	1.30	3.00	2.80	1.30	4.73
17	55.80	55.80	55.80	55.80	3.00	3.00	0	2.80	3.00	0	2.80	3.70
18	58.80	58.80	58.80	58.80	3.00	3.00	0	0	3.00	0	0	3.00
19	61.80	(61.80)	59.00	59.50	3.00	.20	2.80	0	.70	-2.30	0	-.45
20	60.00	60.00	(56.50)	57.00	.50	3.00	3.50	2.30	-2.50	-3.00	-2.30	-4.58
21	57.50	58.00	55.00	55.00	1.00	2.00	3.00	3.00	-2.00	-2.50	-3.00	-4.00
22	54.00	57.00	54.00	56.50	2.00	1.00	3.00	2.50	1.50	2.50	-2.50	2.12
23	57.00	(57.50)	54.70	54.80	1.00	2.00	3.00	2.50	-1.70	-2.20	2.50	-2.17
24	54.50	55.50	54.00	55.00	.70	.80	1.50	2.20	.20	.50	-2.20	-.10
25	54.50	(55.00)	53.00	54.00	0	2.00	2.00	.50	-1.00	-.50	.50	-1.12
26	54.00	55.00	54.00	54.50	1.00	0	1.00	.50	.50	.50	-.50	.62
27	55.00	55.00	(53.00)	53.20	.50	1.50	2.00	.50	-1.30	-1.80	.50	-2.07
28	53.80	56.80	53.80	56.00	3.60	.60	3.00	1.80	2.80	2.20	-1.80	3.45
29	56.50	59.00	56.00	59.00	3.00	0	3.00	2.20	3.00	2.50	2.20	4.80
30	62.00	62.00	(59.00)	59.20	3.00	0	3.00	2.52	.20	2.80	2.52	-.57
31	59.50	(61.50)	59.00	60.00	2.30	.20	2.50	2.80	.80	.50	-2.80	.35
32	59.50	59.80	58.50	59.00	.20	1.50	1.30	.50	-1.00	-.50	.50	-1.12
33	58.50	59.00	57.00	57.20	0	2.00	2.00	.50	-1.80	-1.30	-.50	-2.58
34	57.00	(58.50)	56.50	57.50	1.30	.70	2.00	1.30	.30	.50	-1.30	.22
35	57.00	57.50	55.00	55.00	0	2.50	2.50	.50	-2.50	-2.00	.50	-3.37
36	54.00	54.00	52.00	52.00	1.00	3.00	2.00	2.00	-3.00	-2.00	-2.00	-4.50
37	50.00	52.50	50.00	52.00	.50	2.00	2.50	2.00	0	2.00	-2.00	.50
38	52.00	(55.00)	51.00	54.50	3.00	1.00	4.00	2.00	2.50	2.50	2.00	4.25
39	54.00	54.50	52.00	52.50	0	2.50	2.50	2.50	-2.00	-1.50	2.50	-2.12
40	53.00	54.20	53.00	53.20	1.70	.50	1.20	1.50	.70	.20	-1.50	.42
41	53.50	53.80	52.00	52.50	.60	1.20	1.80	.20	-.70	-1.00	.20	-1.15
42	52.00	54.00	51.80	53.80	1.50	.70	2.20	1.00	1.30	1.80	-1.00	1.95
43	54.00	54.00	51.00	51.50	.20	2.80	3.00	1.80	-2.30	-2.50	1.80	3.10
44	51.00	(52.50)	50.00	52.50	1.00	1.50	2.50	2.50	2.50	1.50	-2.50	1.12
45	52.00	52.00	(49.00)	51.00	.50	3.50	3.00	1.50	-1.50	-1.00	1.50	-1.62
46	51.00	53.00	49.80	52.80	2.00	1.20	3.20	1.00	1.80	1.80	-1.00	2.45
47	52.40	54.20	52.00	54.00	1.40	.80	2.20	1.80	1.20	1.60	1.80	2.45

Col 8 = (5) + $\frac{1}{2}$ (6) + $\frac{1}{4}$ (7)
 Col 9 = larger of (1) or (2)

COMMODITY _____

CONTRACT MONTH _____

If (1) largest col 10 = (1) - $\frac{1}{2}$ (2) + $\frac{1}{4}$ (4)
 If (2) largest col 10 = (2) - $\frac{1}{2}$ (1) + $\frac{1}{4}$ (4)
 If (3) largest col 10 = (3) + $\frac{1}{4}$ (4)

Col 11 = limit
 Col 12 = $50 \times (8) \div (10) \times (9) \div (11)$

(9) K	(10) R	(11) L	(12) SI	(13) ASI	SAR	ACTION and ORDER		
2.50	2.50	3.00	37	37				
1.50	2.25	3.00	-13LSP	24				
			15	39				
			11	50				
			54HSP	(104)				
			-45LSP	59				
			15	74				
1.20	1.58		13	87				
1.00	1.18		22	109				
1.50	2.25		24HSP	133	43.00	L-46.05		
1.40	2.05		-16	117				
1.00	1.45		-13LSP	(104)				
2.20	2.38		41	145	45.00			
2.50	2.48		57	202				
3.00	3.23		73	275				
3.00	2.20		84	359				
3.00	1.50		100HSP	459				
3.00	2.90		-8	451				
3.00	4.08	-64	-56	395	56.50		Accum	
2.00	3.75		-36LSP	359	61.80	S-56.45	+10.40	
2.00	3.63		20HSP	379				
2.00	3.63		-20	359	57.50			
.80	2.05		-1	358				
2.00	2.13		-18LSP	340				
1.00	1.13		9HSP	(349)				
1.50	2.13		-25LSP	324	55.00			
3.60	3.75		65	379	53.00	L-55.05	+1.40	+11.80
3.00	3.55		68HSP	447				
3.00	3.63		-8LSP	439				
2.30	3.20		4HSP	(443)	59.00			
1.50	1.53		-19	424	61.50	S-58.95	+3.90	+15.70
2.00	2.13		-41LSP	383				
1.30	2.33		2HSP	(385)				
2.50	2.63		-53	332	58.50			
3.00	3.00		-75LSP	257				
2.00	3.00		6	263				
3.00	4.50		47HSP	(310)				
2.50	3.13		-28LSP	282	55.00			
1.70	1.83		7HSP	(289)				
1.20	1.85		-13LSP	276				
1.50	2.45		20HSP	296				
2.80	3.45		-42LSP	254				
1.50	3.13		9HSP	(263)				
3.50	3.62		-27LSP	236	52.50			
2.00	3.45		24	260	49.00	L-52.53	+6.40	+22.10
1.40	2.65		22	282				

- Day 42 The ASI at 296 goes above the previous HSP of 289. However, we do not take action until or if the ASI breaks the **first** upswing after the 257 low which is 310.
- Day 45 The ASI made a new low for the trade of 254 on Day 43. The **first** upswing after the new low is confirmed on Day 45. The SAR is the HIP on Day 44 of 52.50.
- Day 46 We went *LONG* at 52.55. The new SAR is the LOP of 49.00 corresponding to the previous LSP made on Day 45.

This system performs best on those entities which are high on the Average Directional Movement Index Rating (ADXR). One option that can be used with this system is to simply stop trading after two consecutive loss trades and then use the initial entry procedure for the next trade.

The following chart shows the system trading Cocoa for one full year.

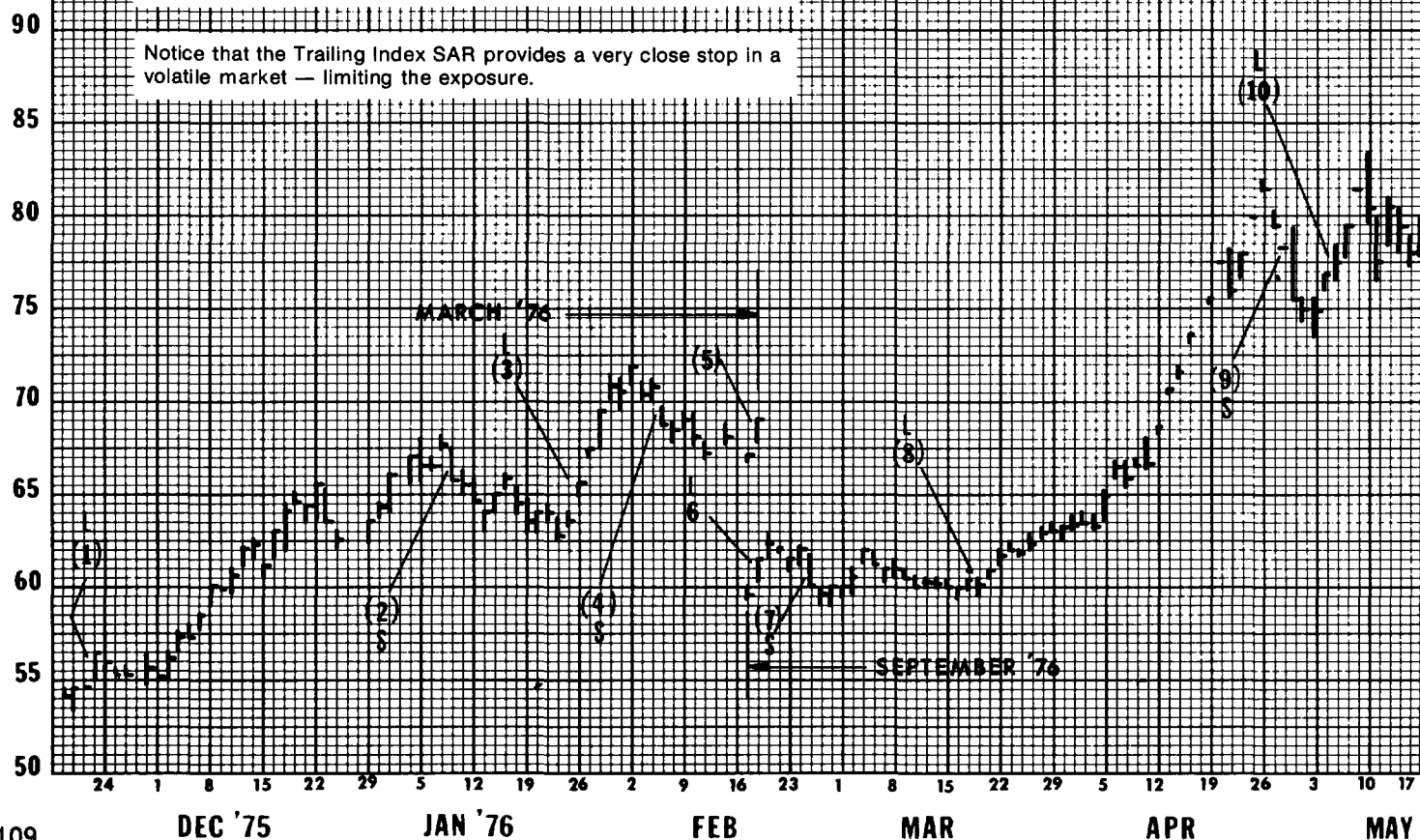
Cocoa

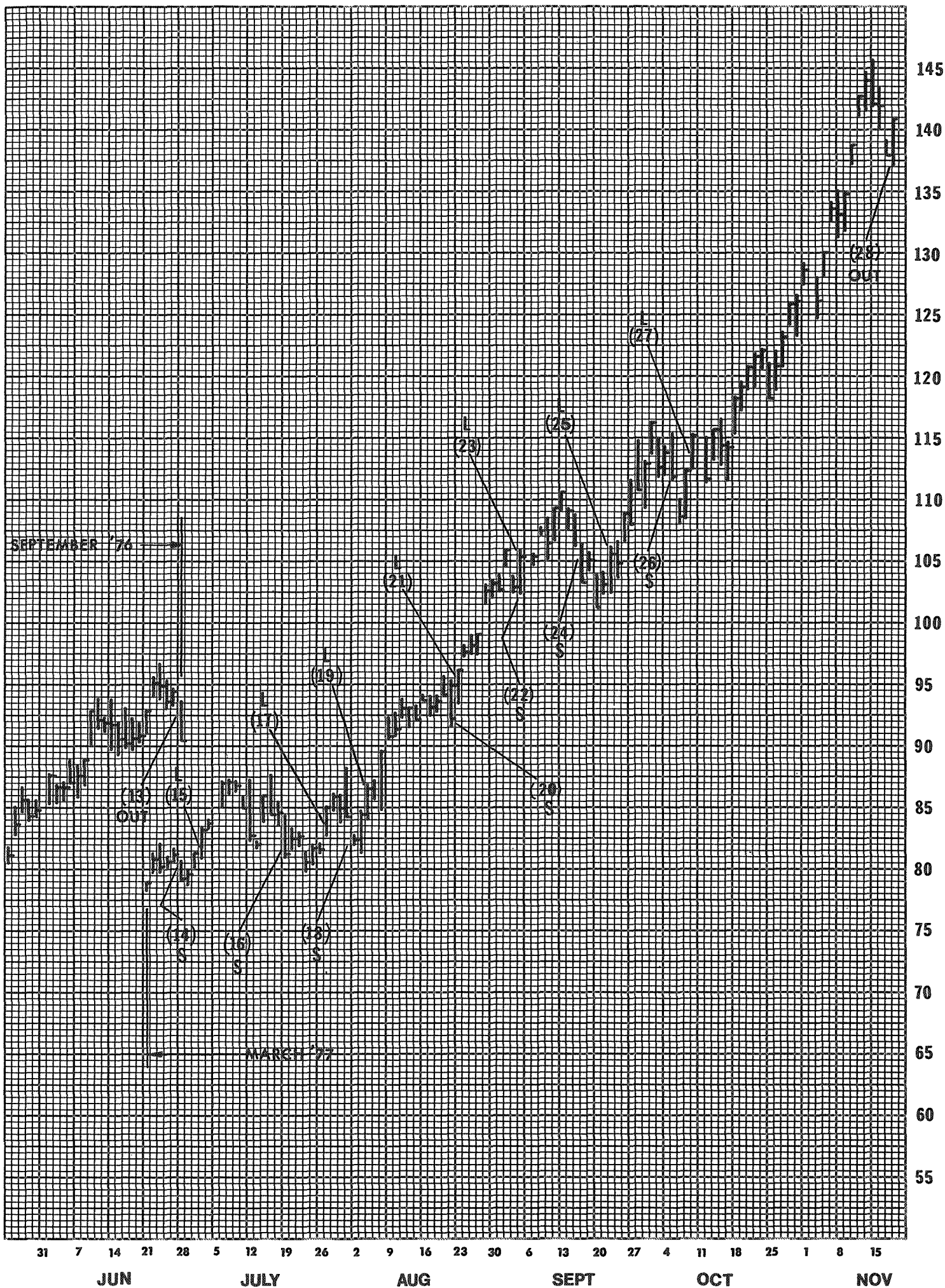
(Swing System)

Trade No.	Date	Position	Price	P & L	Accum
(March 1976)					
1	11/21/75	Long	55.45		
2	1/ 8/76	Short	65.98	+10.53	
3	1/26/76	Long	64.60	+ 1.38	11.91
4	2/ 5/76	Short	69.50	+ 4.90	16.81
5	2/18/76	Out	68.52	+ .98	17.79
(September 1977)					
6	2/18/76	Long	61.00		
7	2/25/76	Short	60.58	— .42	17.37
8	3/18/76	Long	60.27	+ .31	17.68
9	4/29/76	Short	77.90	+17.63	35.36
10	5/ 5/76	Long	76.62	+ 1.28	36.64
11*	5/18/76	Short	75.80	— .82	35.82
12*	5/20/76	Long	80.97	— 5.17	30.65
13	6/28/76	Out	92.98	+12.01	42.66
(March 1977)					
14	6/28/76	Short	80.08		
15	7/ 1/76	Long	81.82	— 1.02	41.64
16	7/19/76	Short	81.68	— .14	41.50
17	7/27/76	Long	83.50	— 1.82	39.68
18	8/ 2/76	Short	82.25	— 1.25	38.43
19	8/ 4/76	Long	86.27	— 4.02	34.41
20	8/20/76	Short	92.43	+ 6.16	40.57
21	8/23/76	Long	95.82	— 3.39	37.18
22	9/ 3/76	Short	102.48	+ 6.66	43.84
23	9/ 3/76	Long	106.07	— 3.59	40.25
24	9/16/76	Short	105.50	— .57	39.68
25	9/22/76	Long	105.82	— .32	39.36
26	10/ 5/76	Short	111.93	+ 6.11	45.47
27	10/ 8/76	Long	112.60	— .67	44.80
28	11/19/76	Out	137.10	+24.50	69.30

*Not shown due to lack of space.

Notice that the Trailing Index SAR provides a very close stop in a volatile market — limiting the exposure.





SECTION IX

THE COMMODITY SELECTION INDEX

From Section III, we learned how to rate the commodities or stocks being followed as to which are the most VOLATILE.

In Section IV, we learned how to rate the same entities relative to their DIRECTIONAL MOVEMENT.

Volatility is also an indicator of movement. The paradox is that volatility is always accompanied by movement, but movement is not always accompanied by volatility. A commodity can move up very slowly and be high on the Average Directional Movement Index Rating (ADXR) but still be low on the Volatility Index.

For this reason, the most important index to use for a trend-following system is the ADXR; however, generally the most money is made in the shortest period of time when the stock or commodity is volatile. For those who don't like the risk associated with volatile markets, they should stay with the ADXR and trade the commodities on the higher end of the scale which suit their inclinations and pocketbooks.

For those who have the capital and are looking for the best overall situation, then the Commodity Selection Index (CSI) equation takes in all of the following factors:

- (1) Directional Movement
- (2) Volatility
- (3) Margin Requirement
- (4) Commission costs

The factors are individually weighted in the order listed above. Here is the COMMODITY SELECTION INDEX EQUATION.

$$CSI = ADXR \times ATR_{14} \left[\frac{V}{\sqrt{M}} \times \frac{1}{150 + C} \right] 100$$

Where ADXR = Average Directional Movement Index Rating

ATR_{14} = 14-Day Average True Range

V = Value of a 1¢ move (or the basic increment of the ATR_{14} in Dollars)

M = Margin Requirement in Dollars $\sqrt{M}$ = Square root of M

C = Commission in Dollars

NOTE: the result of the term $\frac{1}{150 + C}$ must be carried to **four** decimal places

Now let's look at an example. Suppose the factors for two commodities are as follows:

	ADX _R	ATR ₁₄	M	C	V
Soybeans	50	15¢	\$3000	\$45	\$ 50
Pork Bellies	37	1.7¢	\$1500	\$60	\$360

Substituting in the equation for **Soybeans**:

$$\begin{aligned}
 \text{CSI} &= 50 \times 15.00 \left[\frac{50}{\sqrt{3000}} \times \frac{1}{150 + 45} \right] 100 \\
 &= 50 \times 15.00 \left[\frac{50}{54.77} \times \frac{1}{195} \right] 100 \\
 &= 50 \times 15.00 \times .91 \times .0051 \times 100 \\
 &= 348 \text{ (for Soybeans)}
 \end{aligned}$$

Substituting in the equation for **Pork Bellies**:

$$\begin{aligned}
 \text{CSI} &= 37 \times 1.70 \left[\frac{360}{\sqrt{1500}} \times \frac{1}{150 + 60} \right] 100 \\
 &= 37 \times 1.70 \left[\frac{360}{38.73} \times \frac{1}{210} \right] 100 \\
 &= 37 \times 1.70 \times 9.30 \times .0048 \times 100 \\
 &= 280 \text{ (for Pork Bellies)}
 \end{aligned}$$

Therefore, Soybeans has the higher rating of the two.

Now let's look again at the CSI equation and point out a short cut that can be used:

All the values inside the brackets are **constant** as long as the margin requirement and the commission cost do not change. The 100 is also a constant.

The equation then, can be rewritten so that "K" represents all of the constants:

$$\text{CSI} = \text{ADX}_R \times \text{ATR}_{14} \times K$$

We can therefore calculate "K" one time for each commodity being followed and use that value every day multiplied times the ADXR and the ATR₁₄ to obtain the CSI for that day. We only have to recalculate K when and if either the margin requirement changes or the commission rate changes.

In the previous CSI equation for **Soybeans**:

$$\text{CSI} = 50 \times 15.00 \left[\frac{50}{\sqrt{3000}} \times \frac{1}{150 + 45} \right] 100$$

$$\begin{aligned}
 K &= \left[\frac{50}{\sqrt{3000}} \times \frac{1}{150 + 45} \right] \times 100 \\
 &= .91 \times .0051 \times 100 \\
 &= .4641
 \end{aligned}$$

$$\begin{aligned}
 \text{Therefore, CSI} &= \text{ADX} \times \text{ATR}_{14} \times K \\
 &= 50 \times 15 \times .4641 \\
 &= 348
 \end{aligned}$$

For Bellies:

$$\begin{aligned}
 K &= \left[\frac{360}{\sqrt{1500}} \times \frac{1}{150 + 60} \right] \times 100 \\
 &= 9.30 \times .0048 \times 100 \\
 &= 4.464
 \end{aligned}$$

$$\begin{aligned}
 \text{Therefore, CSI} &= \text{ADX} \times \text{ATR}_{14} \times K \\
 &= 37 \times 1.70 \times 4.464 \\
 &= 280
 \end{aligned}$$

The last three columns on the **Directional Movement Index** work sheet are entitled ADXR, ATR_{14} and CSI. Just above the three columns is a space for K. The CSI can be calculated daily by using K and the values already obtained for the Directional Movement Index work sheet.

The ADXR is the latest ADX plus the ADX 14 days ago, divided by 2, as explained in the section on DIRECTIONAL MOVEMENT.

The ATR_{14} is the value in the ATR column divided by 14.

To obtain the CSI for each day, simply multiply $\text{ADX} \times \text{ATR}_{14} \times K$ and insert the value in the CSI column.

Now let's look at an extreme example. Suppose Coffee is highest on the ADXR at 70 and the Volatility Index shows that its Average True Range (ATR_{14}) is 3.75¢.

At \$375.00 for a 1¢ move, the average dollar movement per day is $3.75 \times 375 = \$1,406.25$. Sounds good so far, but if the margin requirement is \$9,000 per contract and the commission is \$85.00, then how does Coffee compare with trading Soybeans in the previous example? The factors are as follows:

	ADX	ATR_{14}	M	C	V
Soybeans	50	15¢	\$3000	\$45	\$ 50
Coffee	70	3.75¢	\$9000	\$85	\$375

For Coffee:

$$\begin{aligned}
 \text{CSI} &= 70 \times 3.75 \left[\frac{375}{\sqrt{9000}} \times \frac{1}{150 + 85} \right] \times 100 \\
 &= 70 \times 3.75 \left[\frac{375}{94.87} \times \frac{1}{235} \right] \times 100 \\
 &= 70 \times 3.75 \times 3.95 \times .0043 \times 100 \\
 &= 318 \text{ (for Coffee)}
 \end{aligned}$$

The CSI for Soybeans was 348; therefore, Soybeans is the better overall deal. Now let's analyze the Soybean situation:

The Average True Range (ATR_{14}) is $15\text{¢} \times 50.00 = \750 average dollar movement per day. This is only about half that of Coffee, and in addition, Soybeans has less directional movement than Coffee.

To give you an idea of what the CSI equation does, let's make two general suppositions; let's say that we traded both Coffee and Soybeans:

- (1) Suppose we got 70% of the move in Coffee since ADXR for Coffee was 70, the same reasoning would give us 50% of the Soybean move.
- (2) Suppose we are in each trade for ten days, so that our money is tied up for the same period of time.

For Coffee:

\$1,406.25 per day for ten days x 70% =	\$9,843.75
Less commission	85.00
Profit	\$9,758.75

For Soybeans:

\$750 per day for ten days x 50% =	\$3,750.00
Less commission	45.00
Profit	\$3,705.00

However, due to the difference in margin requirement, we could have traded **three** contracts of Soybeans for **each** contract of Coffee; therefore, $3 \times \$3,705 = \$11,115$.

The profit on Soybeans was	\$11,115.00
The profit on Coffee was	9,758.75

The COMMODITY SELECTION INDEX for Soybeans was	348
The COMMODITY SELECTION INDEX for Coffee was	318

$$30 \div 318 = 9\%$$

The ADXR indicated that Soybeans was a 9% better deal than Coffee. Actually, in the example Soybeans was a 13.9% better deal than Coffee.

$$\begin{array}{r} \$11.115.00 \\ - \quad 9,758.75 \\ \hline \$ \quad 1,356.25 \end{array} \div 9758.75 = 13.9\%$$

I realize that what we are dealing with here is not an exact science. The margin requirements will not be set, nor could they be set to maintain a constant relationship with volatility or directional movement, nor any other variable, for that matter. There is, however, a direct — though not constant — relationship between margin requirement, volatility and directional movement. The CSI equation constantly analyzes all of these factors and points out the most advantageous situations.

As a rule, margin requirements lag market action. They are slow to go up and slow to go down. The COMMODITY SELECTION INDEX also enables the trader to take advantage of this lag to obtain the best return on invested capital.

Most technical systems are trend-following systems; however, most commodities are in a good trending mode (high directional movement) only about 30% of the time. **If the trader follows the same commodities or stocks all of the time, then his system has to be good enough to make more money 30% of the time than it will give back 70% of the time. Compare that approach to trading only the top five or six commodities on the CSI scale. This is the underlying concept . . . the reason this book was written.**

SECTION X

CAPITAL MANAGEMENT

The message of this book is that there are three parts to a good technical trading plan:

- (1) Using a good technical system.
- (2) Using the system on the right market(s) at the right time.
- (3) Using a good money management technique.

Of these three, the third is the most important, the easiest to learn . . . and the hardest to do.

It is the hardest to do because at one time or another, most of us have put all our marbles in one basket, timed it just right, and made a tremendous profit. When this happens, the results are usually two-fold. One, it boosts our ego and confidence to the point that we think we can do it at least one more time; second, the profit was made so quickly that we don't consider it in the same light as if it took us several years to earn it.

One of the smartest businessmen I know started out with a horse, a homemade sawmill and a fourth grade education. Over the years, he became a multimillionaire, dealing in land and timber. He made a statement that I have never forgotten. He said, "Boys, when you really make a big profit fast, you have got to get **used** to having it. Don't do anything with it for six months. By that time, you will be **used** to having it and you will treat it prudently."

This man had learned something that many of us never learn.

I can sum up my concept of money management in two sentences:

- (1) Don't margin more than 15% of total capital on any one commodity.
- (2) Don't margin more than 60% of total capital at any one time.

These are the limits. I prefer to trade the six top commodities on the CSI scale with not over 10% of total capital on any one commodity. I use this criteria on my own account and on the accounts which I manage.

There is one more concept I would like to leave with you. This is not new — it was old when the Phoenicians were trading with the Romans and the Greek Philosophers cornered the olive oil market. The concept is this . . .

The percent gain it takes to recover a loss increases geometrically with the loss. For example, if we lose 15% of our capital, we have to make 17.6% gain on the balance to get even. However, if we lose 30% of our capital, it will take 42.9% gain on the balance we have left to get even; and if we lose 50% of our capital, it will take 100% gain on the balance to get even.

This concept is set out in the little table which follows. I have a copy of this table posted on the wall near my desk as a reminder of the importance of capital management.

<u>% Loss of Initial Capital</u>	<u>% Gain on Balance Required to Recover</u>
5	5.3
10	11.1
15	17.6
20	25.0
25	33.3
30	42.9
35	53.8
40	66.7
45	81.8
50	100.0
55	122.0
60	150.0
65	186.0
70	233.0
75	300.0
80	400.0
85	567.0
90	900.0

CONCLUSION

At the beginning of this book, I made the statement that I had never seen a technical trading system that **consistently** makes profits in *ALL* markets. Trend-following systems can make

consistent profits in a **directional** market and consistent losses in a **non-directional** market. The answer, therefore, is to discover a way to define directional movement and translate this definition to a rating scale within known parameters.

The DIRECTIONAL MOVEMENT INDEX (Average Directional Movement Index Rating ADXR) is my answer to this problem. The ADXR may not be the best answer, nor may it be the final answer; but to my knowledge, it is the first truly definitive answer.

Several times in the past, I have come to the conclusion after perfecting and testing a system that it was the 'ultimate' method. I would decide to stop searching and researching and be content to just trade the system . . . and then . . . as I did this morning, I will awake about 3 o'clock a.m., with another new concept to explore. It seems to be a never-ending search.

Perhaps if the early morning Revelations continue, someday there will be NEW CONCEPTS IN TECHNICAL TRADING SYSTEMS — BOOK II.

Good luck and good trading.

APPENDIX

GLOSSARY OF TERMS AND ABBREVIATIONS

ABS	Absolute value
ADX	Average Directional Movement Index
ADXR	Average Directional Movement Index Rating
AF	Acceleration Factor
ARC	Average Range times Constant
ATR	Average True Range
B ₁	Buy Point
C	Close
CSI	Commodity Selection Index
DIFF	Difference between two prices
+DI ₁	UP directional indicator for one day
—DI ₁	DOWN directional indicator for one day
+DI ₁₄	Sum of +DI ₁ for 14 days
—DI ₁₄	Sum of —DI ₁ for 14 days
+DM ₁	UP directional movement for one day
—DM ₁	DOWN directional movement for one day
+DM ₁₄	Sum of +DM ₁ for 14 days
—DM ₁₄	Sum of —DM ₁ for 14 days
DX	Directional Movement Index
EP	Extreme Price
H	High
HBOP	High Break Out Point
HIP	High Point
HI SIP	Significant High Point
HSP	High Swing Point
K	Constant
L	Low
LBOP	Low Break Out Point
LOP	Low Point
LO SIP	Significant Low Point
LSP	Low Swing Point
MF	Momentum Factor
O	Open
RS	Relative Strength
RSI	Relative Strength Index
S ₁	Sell Point
SAR	Stop and Reverse Point
SI	Swing Index
SIC	Significant Close
SIP	Significant Point
TBP	Trend Balance Point
TR ₁	Today's True Range
TR ₁₄	Sum of TR ₁ for 14 days
<u>VI</u>	Volatility Index
X	Average of the High, Low and Close Price for one day

DAILY WORK SHEET

PARABOLIC TIME / PRICE SYSTEM

[illegible]

COMMODITY _____ CONTRACT MONTH _____

[illegible]

CONTRACT MONTH _____

[illegible]

COMMODITY _____

CONTRACT MONTH _____

•

DAILY WORK SHEET

DIRECTIONAL MOVEMENT INDEX

[illegible]

CONTRACT MONTH

K

1

DAILY WORK SHEET

TREND BALANCE POINT SYSTEM

[illegible]

CONTRACT MONTH

[illegible]

DAILY WORK SHEET

THE REACTION TREND SYSTEM

[illegible]

COMMODITY _____ CONTRACT MONTH _____

[illegible]

SWING INDEX SYSTEM

- USE ABSOLUTE VALUE

- USE + OR - VALUE

Col 9 = larger of (1) or (2)

COMMODITY _____

CONTRACT MONTH _____

If (3) largest col 10 = (3) + $\frac{1}{4}$ (4)

Col 11 = limit

$$\text{Col 12} = 50 \times (8) \div (10) \times (9) \div (11)$$
[illegible]