

3. THE PAINTBAR AND SHOWME STUDIES

The next type of studies to become familiar with will be the **PaintBar** and **ShowMe**. With either study, you can define the conditions you desire and when they occur TradeStation will change the color of the bar or mark the bar based upon the criteria selected. A PaintBar Study, as its name implies, will color (paint) the bar a different color. PaintBar Studies are best used whenever a condition is expected to occur frequently. ShowMe Studies will place a mark, a dot, a cross, or a line above or below the bar. ShowMe Studies are best used when the condition does not occur frequently. To better understand the PaintBar and ShowMe Studies, we will develop different ones of each type.

GET SET LONG PAINTBAR

This PaintBar Study will display Blue when the Low of the current bar is the lowest of the last 3 bars and the Close is less than the average Close of the last NBars. This method of identifying possible entry points will be used to develop a trading system. We will incorporate the Moving Average indicator developed in the previous chapter.

From within the EasyLanguage Editor, select File from the Menu Bar and then select New and then select PaintBar. Complete the dialog box with the name of this new indicator. Type the name "Get Set Long" and click OK. The completed code for the "Get Set Long" PaintBar is displayed in Sidebar 3:1.

```
Inputs: Len(32);
IF Close > Average(Close,Len) and
   LowestBar(Low,3) = 0 Then Begin
   PlotPaintBar(High,Low,"GetLong");
End;
```

Sidebar 3:1 Get Set Long

The input 'Len(32)' is the number of bars which will be used to calculate the Moving Average. The IF THEN BEGIN statement has 2 conditions, both of which must be true before executing the code between the IF THEN BEGIN and the END. The first condition requires the close of the current bar be greater than the Moving Average of the close. The second condition requires the lowest bar number of the low for the last 3 bars be equal to 0, which means the current bar. The LowestBar function returns a number, which tells how many bars back from the current bar the lowest price (low) for the specified length (3) has occurred.

```
TradeStation

'Style' Tab
  Color = Blue
  Style = Solid
  Weight = Heavy

'Properties' Tab
  Max Number of Bars Study will Reference
  Auto-Detect
```

Table 3:1 Get Set Long PaintBar Properties

With all the code completed for this PaintBar, press Function Key 3 (F3) to verify the code. You will be notified if there is an error. Set the properties (color of bar and style) according to Table 3:1. Figure 3:1 shows the Get Set Long PaintBar Study applied to the Daily S&P 500 Chart along with the Moving Average and the OverBought/OverSold Indicator. The Get Set Long PaintBars appear thicker than the rest of the bars. Each of these represents a potential buy. Where to buy and when to buy will be discussed when these indicators are used to develop a System in a later chapter.



Figure 3:1 GET SET LONG PaintBar

GET SET SHORT PAINTBAR

Now create the "Get Set Short" PaintBar Study by selecting File from the Menu Bar and then select New. Select PaintBar and click on OK. Complete the dialog box with the

TradeStation

'Style' Tab

Color = Red

Style = Solid

Weight = Heavy

'Properties' Tab

Max Number of Bars Study will Reference

Auto-Detect

Table 3:2 Get Set Short PaintBar Properties

```
Inputs: Len(32);
IF Close > Average(Close,Len) and
  LowestBar(Low,3) = 0 Then Begin
  PlotPaintBar(High,Low,"GetLong");
End;
```

Sidebar 3:2 Get Set Short

name of this new indicator. Type the name "Get Set Short" and click OK. The completed code for the "Get Set Short" PaintBar is displayed in Sidebar 3:2. The code is very similar to the "Get Set Long" PaintBar. The difference between this PaintBar and the "Get Set Long" is in the conditional statements. The first condition requires the

close of the current bar be less than the Moving Average of the close. The second condition requires the highest bar number of the high for the last 3 bars be equal to 0. The HighestBar function returns a number, which tells how many bars back from the current bar the highest price (high) for the specified length (3) has occurred.

With all the code completed for this PaintBar, press Function Key 3 (F3) to verify the code. Then set the properties (color of bar and style) according to Table 3:2. Code for both these PaintBars can be written in as one. This is possible because TradeStation allows us to change the colors and width of the PaintBar from the code. Since the same code will be used for both long and short, we will simply name the PaintBar ('Get Set'). The code in the adjacent Sidebar 3:2b shows how to incorporate both conditions. The 'SetPlotColor' function has two inputs. The first identifies the plot number we want to change. The second specifies the color to be used.

```
Inputs: Len(32);

IF Close < Average(Close,Len) and
  HighestBar(High,3) = 0 Then Begin
  PlotPaintBar(H,L,"GetSet");
  SetPlotColor(1,red);
End;
If Close > Average(Close,Len) and
  HighestBar(High,3) = 0 Then Begin
  PlotPaintBar(H,L,"GetSet");
  SetPlotColor(1,blue);
End;
```

Sidebar 3:2b Get Set

SHORT-TERM TREND PAINTBARS

Another PaintBar Study which is simple to develop is one that will show when the short-term trend is up or down. For an Up Trend, this study will look for any bar in which the

Typical Price (Pivot or Trend Reaction) is greater than the Typical Price of some previous bar. For a Down Trend, this study will look for any bar whose Typical Price is Less than the Typical Price of some previous bar. The Typical Price will be calculated in 2 different ways:

1. Average of the High, Low, Close
2. Average of the Open, High, Low, Close

Besides the Typical Price, the High, the Low or the Close could be used by themselves. Let's make this study a little more flexible by having an Input which will be used to define what price the study should use. The study will be called: Cautionary ST Up Trend. Cautionary because it is for a short term trend and subject to fluctuations and because it will be used with other studies to confirm a trend and potential entries in a later chapter. The completed code can be found in Sidebar 3:3.

The program has two inputs (Len and Price). The Len Input is used to determine how many previous bars is the price being compared. The Price Input is being used to tell the program which of six different prices to use. The variable (TP) will contain the price selected by the input Price. A series of IF... THEN Statements are used to identify which price to use and then set the appropriate value of the variable TP. If the value of the variable 'TP' is greater than the value of 'TP' three bars ago (expressed as TP(Len)), then the bar is painted Blue. Similar code can be used to create the Cautionary ST Dn Trend.

PAINTBAR WITH DIFFERENT COLORS

There may be a specific market condition that would best be displayed as a PaintBar painted with two different colors. If the mid-point of the bar was determined, a bar could be plotted from the Mid-Point to the High for the upper half and plotted from the Mid-Point to the Low for the lower half. This cannot be done with a single PaintBar Study but requires two. Using information developed in previous PaintBar example, the criteria for painting will be the same for each study. The only difference will be the color of the plot and what prices to plot. Sidebar 3:4 shows the completed code for both of the PaintBar Studies. Notice the same

```

Inputs: Len(3), Price(1);
Vars: TP(0);

If Price = 1 then TP = (H+L+C)/3;
If Price = 2 then TP = (O+H+L+C)/4;
If Price = 3 then TP = (H+L)/2;
IF Price = 4 then TP = H;
IF Price = 5 then TP = L;
IF Price = 6 then TP = C;

IF TP > TP[Len] Then Begin
    PlotPaintBar(H,L,"STTrend");
    SetPlotColor(1,blue);
End;

```

{ First PaintBar Study }

```

Inputs: Len(32);

If Close > Average(Close,Len) and
LowestBar(Low,3) = 0 Then Begin
    Value1 = (High+Low)/2;
    PlotPB(High,Value1,"High");
End;

```

{ Second PaintBar Study }

```

Inputs: Len(32);

If Close > Average(Close,Len) and
LowestBar(Low,3) = 0 Then Begin
    Value1 = (High+Low)/2;
    PlotPB(Low,Value1,"Low");
End;

```

Sidebar: 3:4 Different Colors