THE GHOST TRADER TRADING STRATEGY

The code for the Ghost Trader is designed more as a template than a complete trading strategy. Some trading strategies incorporate the success of the last trade signal in the calculation/determination of the next trade signal. We have tested several methodologies that only initiate new positions after a losing trade. Some traders feel that there exists a high probability of failure on the next trade signal if the last trade was closed out with a profit. This approach is much easier to trade than historically back test. It's easy to keep track of your trades and then skip the hypothetical trades that don't meet your criteria. In our example of waiting for a losing trade before initiating a new trade, you would simply stop trading your account after a winning trade and start paper trading and wait until you have a loser on paper. Once a paper loser occurs, the next trade would be initiated in the real world. The code for Ghost Trader demonstrates how to keep track of simulated trades and only issue the trades that meet a certain criteria.

The core trading strategy of the Ghost Trader is based off of an exponential moving average and a RSI indicator.

```
if(marketPosition = 0 and myProfit < 0 and Xaverage(Close,9) >
   Xaverage(High,19) and
       RSI(Close,9) crosses below 70) then
       begin
               buy next bar at High stop;
       end;
if(marketPosition = 0 and myProfit < 0 and Xaverage(Close,9) <
   Xaverage(Low,19) and
       RSI(Close,9) crosses above 30) then
       begin
               sellShort next bar at Low stop;
       end;
```

Long positions are initiated on the next day at today's high on a stop order. This order is only issued if the nine day exponential moving average of closes is greater than the 19 day exponential moving average of high prices and the nine day RSI of closing prices is crossing from above to below the 70 reading. Short positions are initiated in just the opposite fashion. Long positions are liquidated if today's market action penetrates the lowest low of the past 20 days and short positions are liquidated if today's market action penetrates the highest high of the past 20 days. These entry/exit techniques are interesting but are not the main focus of the Ghost Trader. The main focus of the Ghost Trader is to keep track of a trading system and issue only the trade signals that meet a certain criteria. In our case, actual trade signals should only be issued after a real or simulated losing trade. The following code keeps track of all trades—real and simulated.

Ghost System Code

```
{Ghost system}
{Look to see if a trade would have been executed today and keep track
of our position and our entry price. Test today's high/low price
against the trade signal that was generated by offsetting our calculations
by one day.}
if(myPosition = 0 and Xaverage(Close[1],9) > Xaverage(High[1],19) and
      RSI(Close[1],9) crosses below 70 and High >= High[1]) then
begin
      myEntryPrice = MaxList(Open,High[1]); {Check for a gap open}
      myPosition = 1;
end;
if(myPosition = 1 and Low < Lowest(Low[1],20) )then
begin
      value1 = MinList((Lowest(low[1],20)),Open); {Check for a gap open}
      myProfit = value1 - myEntryPrice          {Calculate our trade
          profit/loss}
      myPosition = 0;
end;
if(myPosition = 0 and Xaverage(Close[1],9) < Xaverage(Low[1],19) and
      RSI(Close[1],9) crosses above 30 and Low <= Low[1]) then
begin
      myEntryPrice = MinList(Open,Low[1]);
      myPosition =-1;
end;
if(myPosition =-1 and High > Highest(High[1],20)) then
begin
      value1 = MaxList((Highest(High[1],20)),Open);{Check again for a gap
          open}
      myProfit = myEntryPrice - value1;    {Calculate our trade profit/loss}
      myPosition = 0;
end;
```

See how we compare today's market action against the signal that was poten-
tially generated on yesterday's bar:

```
if(myPosition = 0 and Xaverage(Close[1],9) > Xaverage(High[1],19) and
RSI(Close[1],9) crosses below 70 and High >= High[1]) then
```

We are checking to see if yesterday's nine day exponential moving average of
closes crossed above yesterday's 19 day exponential moving average if highs
and yesterday's nine day RSI of closes reading crossed down below 70 and
today's high price penetrated yesterday's high price. If all of these criteria were
met yesterday and today, then we know we should be in a long position (real or
simulated) and the following block of code is executed:

```
begin
      myEntryPrice = MaxList(Open,High[1]); {Check for a gap open}
      myPosition = 1;
end;
```

Notice that we did not instruct TradeStation to issue an order. We are just simply trying to keep track of all trades and we do so by setting our own variables, myEntryPrice and myPosition, accordingly. Remember that we are placing stop orders for the next day at the price of today's high, and since we are keeping track of myEntryPrice, we need to check and see if the Open price of today gapped above our stop price. If the Open did gap above our stop, then we need to manually set myEntryPrice equal to the Open. We also keep track of liquidated trades:

```
if(myPosition = 1 and Low < Lowest(Low[1],20) )then
begin
      value1 = MinList((Lowest(low[1],20)),Open); {Check for a gap open}
      myProfit = value1 - myEntryPrice;    {Calculate our trade profit/loss}
      myPosition = 0;
end;
```

Since TradeStation is not keeping track of all our trades, in addition to myPosition and myEntryPrice, we must keep track of the profit/loss from the last trade by storing the information in myProfit.

Once myProfit is negative (a loss occurred) we can start issuing real trade orders. The following code issues the real signals based on the entry technique and the value of myProfit.

Real System Code

```
{Real System}
{Only enter a new position if the last simulated or real trade was a loser.
If last trade was a loser, myProfit will be less than zero.}

   if(marketPosition = 0 and myProfit < 0 and Xaverage(Close,9) >
      Xaverage(High,19) and
   RSI(Close,9) crosses below 70) then
   begin
         buy next bar at High stop;
   end;
   if(marketPosition = 0 and myProfit < 0 and Xaverage(Close,9) <
      Xaverage(Low,19) and
   RSI(Close,9) crosses above 30) then
   begin
         sellShort next bar at Low stop;
   end;
```

```
if(marketPosition = 1) then sell next bar at Lowest(Low,20) stop;
if(marketPosition =-1) then buytocover next bar at Highest(High,20) stop;
```

The core entry/exit strategy issued the following signals:

```
12/1/2000     Sell   1     .9446   $0.00   $0.00   Short
2/5/2001      SExit  1     .9098   $0.00   $0.00   Cover    4350.0000
3/14/2001     Sell   1     .8674   $0.00   $0.00   Short
5/3/2001      SExit  1     .8563   $0.00   $0.00   Cover    1387.5000
7/3/2001      Sell   1     .8272   $0.00   $0.00   Short
7/20/2001     SExit  1     .8342   $0.00   $0.00   Cover    (875.0000)
8/13/2001     Buy    1     .8433   $0.00   $0.00   Buy
10/11/2001    LExit  1     .8385   $0.00   $0.00   Sell     (600.0000)
10/30/2001    Sell   1     .8323   $0.00   $0.00   Short
11/8/2001     SExit  1     .8443   $0.00   $0.00   Cover    (1500.0000)
11/21/2001    Sell   1     .8250   $0.00   $0.00   Short
3/6/2002      SExit  1     .7669   $0.00   $0.00   Cover    7262.5000
3/11/2002     Buy    1     .7903   $0.00   $0.00   Buy
4/1/2002      LExit  1     .7543   $0.00   $0.00   Sell     (4500.0000)
5/1/2002      Buy    1     .7861   $0.00   $0.00   Buy
```

The core entry/exit technique with the last trade was a loser criteria issued the following trades:

```
12/1/2000     Sell   1     .9446   $0.00   $0.00   Short
2/5/2001      SExit  1     .9098   $0.00   $0.00   Cover    4350.0000
8/13/2001     Buy    1     .8433   $0.00   $0.00   Buy
10/11/2001    LExit  1     .8385   $0.00   $0.00   Sell     (600.0000)
10/30/2001    Sell   1     .8323   $0.00   $0.00   Short
11/8/2001     SExit  1     .8443   $0.00   $0.00   Cover    (1500.0000)
11/21/2001    Sell   1     .8250   $0.00   $0.00   Short
3/6/2002      SExit  1     .7669   $0.00   $0.00   Cover    7262.5000
5/1/2002      Buy    1     .7861   $0.00   $0.00   Buy
```

Over this time period, waiting for a losing trade proved to be much more successful. The Ghost Trader was designed as a template to help in the programming of trading strategies that base the next trade signal off of the results of the prior signal. You could easily modify the code and only issue real trade signals after two consecutive losers.