

*A Classic Application For Modern Markets*

# Darvas-Style Trading

*The markets have changed since the 1960s, with the weekly trading volumes of those days often exceeded by a single day of trading now. With that in mind, can classic techniques such as Darvas-style trading still work?*

*by Daryl Guppy*



Nicholas Darvas was a Hungarian-born dancer who successfully traded the market in the early 1960s. His book, *How I Made Two Million Dollars In The Stock Market*, is a classic. It describes a unique approach to understanding the nature of trend behavior. The Darvas trading

style uses trend analysis based entirely on dynamic support and resistance concepts. It is a complete and standalone trading approach. It is not combined with straight-edge trendlines, or with moving averages, or with the Guppy multiple moving average, or any other indicator.

## **WHY DARVAS?**

Darvas trading defines an uptrend by constructing a series of imaginary boxes based on a price chart. Each box contains a set of price moves. Each new box sits on top of the previous box like a set of rising stairs. When price moves above the upper edge of the box, it means the continuation of a trend is confirmed. The trend ends when prices close below the bottom of the current box. These upper and lower limits create a Darvas box and define the acceptable bullish and bearish range of prices.

For several years, this approach was tested in current markets with real trades and modifications consistent with the logic of the Darvas method, but taking into account changes in volatility that characterize modern markets. These included applications to breakout trading using a different set of initiating triggers while applying the basic method.

The Darvas trading technique provides a useful way to manage longer-term trending positions. It is designed as a

## CLASSIC TECHNIQUES

method of capturing the strength of the trend. The buy signals are generated on new bullish strength, managed by using the six-day volatility range to set a stop-loss. The limits of this strength and weakness set the perimeters of the Darvas box (D\_Box). The bottom of the box is used as a stop-loss point. Ideally, the box construction moves steadily upward with the trend, with a trailing stop-loss lagging just behind current price action (Figure 1).

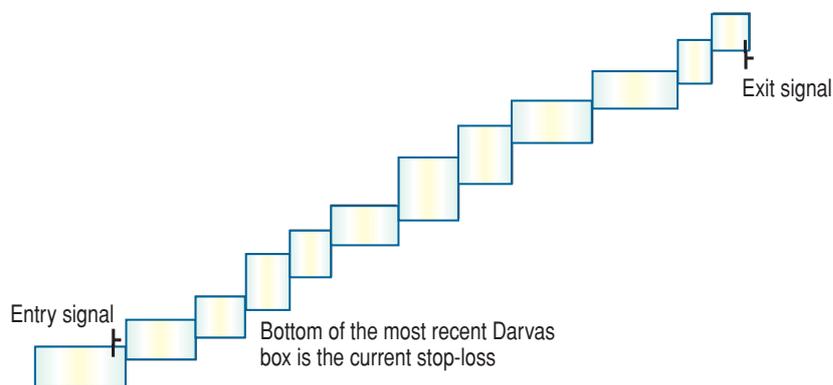
### HERE'S HOW IT WORKS

The D\_Box uses a range-based measure of bullish and bearish sentiment to set the parameters of significant price action. The importance of a price breakout to a new high is confirmed when price overcomes a measure of immediate bullish strength. This combination provides greater certainty about the trend continuation, which is counterbalanced by an immediate measure of bearish strength. A close below this level set by the bottom of the Darvas box suggests not just an exit from the trade, but a significant decline in trend strength and the potential for a trend collapse.

The Darvas approach uses its own internal logic to understand trend behavior, which can lead to some counterintuitive situations where classic indicators signal a trend exit but the D\_Box remains intact. So when applying this method, it's best to ignore all other indicator-based signals. Nicholas Darvas used a new 12-month high as his starting point. He would then wait for several confirming conditions to develop before acting on a buy trigger.

It is these confirming conditions that create the rules for

### Ideal Darvas Box Trend Tracking



**FIGURE 1: IDEAL DARVAS BOX TREND TRACKING.** In an ideal scenario, the construction of the boxes moves steadily upward with the trend. The bottom of the most recent Darvas box serves as the stop-loss level.

constructing the Darvas box. There are three variations to this strategy:

- 1 The classic Darvas approach
- 2 Modern adaptations, *and*
- 3 Downtrend breakout opportunities.

The differences are summarized in Figure 2.

A filter is applied to price movements to help determine which price moves are significant. The price move is significant because it signals the end of a current trend, triggers a stop-loss condition, or tips the balance of probability away from the current trend conditions.

The classic Darvas application looked for an increase in volume with a price breakout. Our research indicates this is no longer an important identification or verification feature.

Darvas-Style Trading				
Classic	Modern	Breakout		
<ul style="list-style-type: none"> <li>■ Trade initiated by a new high for the rolling 12-month period.</li> <li>■ All decisions based on the high or low of the series.</li> <li>■ Action triggered by first trade at the trigger price.</li> <li>■ Method of stop-loss calculation remains constant.</li> <li>■ Volume increase with breakout.</li> </ul>	<ul style="list-style-type: none"> <li>● Trade initiated by a new high for the rolling 12- or 6-month period.</li> <li>■ All entry decisions based on the high of the series.</li> <li>● All exit decisions based on the close of the series.</li> <li>■ Entry action triggered by first trade at the trigger price.</li> <li>● Exit action managed on the day after the trigger close.</li> <li>● Stop-loss calculation uses “ghost boxes” where necessary to handle modern volatility.</li> </ul>	<ul style="list-style-type: none"> <li>● Trade initiated by the second valid Darvas box after initial downtrend breakout.</li> <li>■ All entry decisions based on the high of the series.</li> <li>■ All exit decisions based on the close of the series.</li> <li>■ Entry action triggered by first trade at the trigger price.</li> <li>■ Exit action managed on the day after the trigger close.</li> <li>● Stop-loss calculation uses “ghost boxes” where necessary to handle modern volatility.</li> </ul>		
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="background-color: #800000; color: white; text-align: center; padding: 2px;">Key</th> </tr> </thead> <tbody> <tr> <td style="padding: 2px;"> <ul style="list-style-type: none"> <li>■ Classic Darvas Trading Strategy</li> <li>● Modifications For Modern Markets</li> </ul> </td> </tr> </tbody> </table>			Key	<ul style="list-style-type: none"> <li>■ Classic Darvas Trading Strategy</li> <li>● Modifications For Modern Markets</li> </ul>
Key				
<ul style="list-style-type: none"> <li>■ Classic Darvas Trading Strategy</li> <li>● Modifications For Modern Markets</li> </ul>				

**FIGURE 2: DARVAS-STYLE TRADING.** There are three variations to this strategy: classic, modern, and breakout. Here you see the differences among the three.

This is because modern markets are deep and liquid enough for massive and sustainable volume to follow price movements for extended periods. Even in stocks with modest turnover, there is often enough trading activity to make good-sized trades achievable.

**The classic Darvas construction rules are:**

- The *top* of the Darvas box is established when the price does not touch or penetrate a previously set new high for three consecutive days. This is essentially a four-day price pattern.
- The top of the Darvas box always starts with a new high. This high must be followed by three days that have lower highs.
- The Darvas box is based on a minimum of four days of price action.

The *bottom* of the Darvas box is only calculated after the top of the D\_Box has been confirmed. It is constructed in the opposite way to the top of the box:

- The Darvas box uses the lowest low that occurs *after* the top of the Darvas box is established as its starting point.
- The low is followed by three days of higher lows where the price does not touch or penetrate a previously set calculation low for three consecutive days. It is again a three-day pattern, but the calculation starts with the day the top of the box pattern is confirmed.
- This means it takes a minimum of four days for a Darvas box to be identified for both top and bottom.
- The top of the Darvas box is established in four days. The bottom of the box may take much longer to establish.

Darvas also uses stop-loss orders that fill two functions. The first is to protect capital once the trade is opened. Darvas trading initially places the stop-loss level at the exact bottom of the most recent box. This is essentially a volatility-based stop-loss because the D\_Box is built around the expected volatility of price and price ranges.

This *sounds* complicated, but in reality it's not. The Darvas box captures the "normal" range of price activity. A buy signal is generated when prices move outside this upper volatility box. A sell signal is generated when prices drop below the volatility band. When you first enter a trade, you do not know where the bottom of the new volatility band is going to be. So you use the bottom of the most recent box as the initial stop-loss point.

Darvas does not move his stop-loss point upward until the bottom of the new box is established. This takes up to eight days. The upper level of the new box takes a minimum of four days to establish: a new high followed by three lower days. The bottom of the box may take another four days: a new low

**The Darvas trading style uses trend analysis based entirely on dynamic support and resistance concepts. It is a complete and standalone trading approach.**

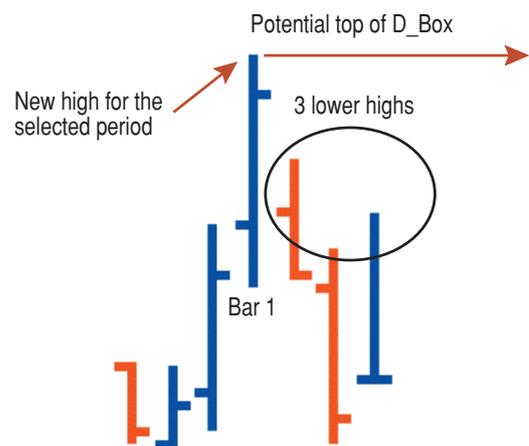
followed by three days with lows that are higher than the new low starting point.

This brings us to the second function of stop-loss orders, which is to protect profit once a trade starts to make money. As soon as the bottom of the new box is confirmed, it becomes the calculation point for the next stop-loss point. The stop-loss is set one tick below the bottom of the new box. The exit is taken as soon as the price falls below the bottom of the box.

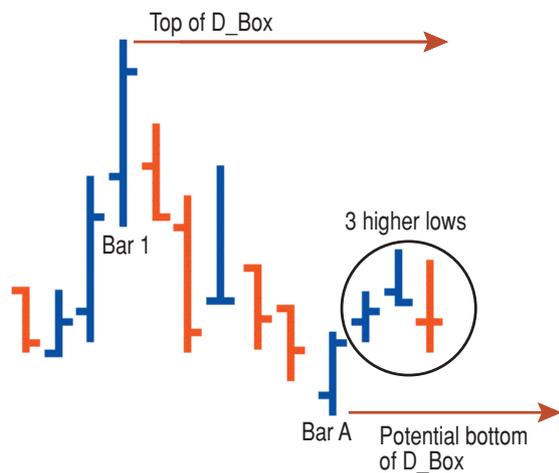
### BUILDING A BOX

Setting the top of the box takes exactly four days of price action, since the high must be followed by three days of lower highs. This does not mean the highs are all descending highs where each one is lower than the previous high. It means that the three highs must all be lower than the initial high — bar 1 in Figure 3 — that triggered the start of the pattern. Here, the first two days show a pattern of descending bars, but the last day has a high that is higher than the previous day's bar.

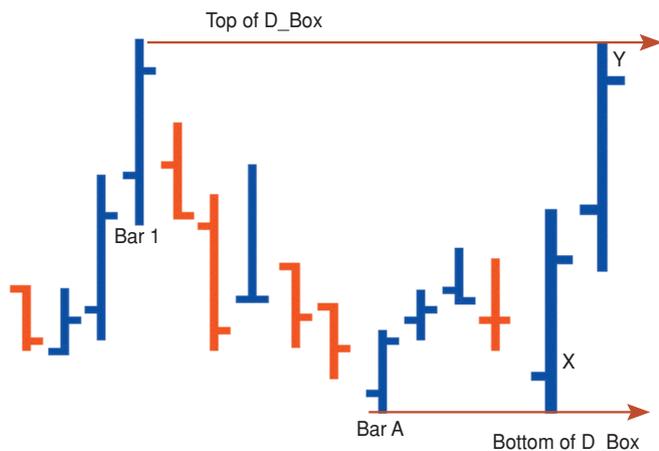
Since the upper edge of the new box is always a four-day pattern, if one of the three days after bar 1 sets an equal or higher high, then you need to abandon the calculation and start again. The new, most recent high is used as the new starting point. The objective is to capture the high for the period and then plot the bullish strength over the next three days.



**FIGURE 3: IDENTIFYING THE TOP OF THE BOX.** The top of the box is determined based upon four days of price action. That high must be followed by three days of lower highs relative to the top of the box. The top edge is always a four-day pattern.



**FIGURE 4: IDENTIFYING THE BOTTOM OF THE BOX.** The most recent low after and including the first bar is the starting point for creating the bottom of the box. That bar should be followed by three days of higher lows. If this condition is met, you have a bottom edge.



**FIGURE 5: THE COMPLETE BOX.** Once the top and bottom have been identified, they are not recalculated until prices break above or below the perimeter of the box.

### SETTING THE BOTTOM

The bottom of the Darvas box, which defines the limits of bearish strength, is not calculated until the top of the box is confirmed. As soon as the top is confirmed, you look for the most recent low occurring after and including bar 1. This is the starting point for the calculation used to set the bottom of the D\_Box. In most cases, the lowest bar is below the low of bar 1, as shown in the example in Figure 4. The lowest bar is used as the start of the calculation point for setting the bottom of the Darvas box and is set when the bar is followed by three days of higher lows. Again, you are not looking for three consecutively higher lows. What you are looking for is the subsequent lows being higher than the low of the bar used as the starting point of the calculation of the D\_Box bottom.

I have used this example because it shows that once the top of the box is set, it may take a few more days for the bottom to be set. The bottom of the box does not automati-

cally start from the most recent low, ignoring any further lows. It is only set once the specified conditions have been met. If a new equal or lower low appears within three days after bar A, the current bottom-of-the-box calculation is abandoned and a new calculation starts from the most recent equal or lower low.

Once the Darvas box is completed, it includes a high resistance level based on a single price point high. The low support level also swings off a single price point. These levels define the expected ranging activity of the stock over any given four-day period. This sounds restrictive, but the size of the box is determined by the low of the box, which may take a week or more to establish. It could be significantly lower than the new high, providing a considerable range for price activity before any stop-loss exits are triggered.

The complete box captures the bullish and bearish range of price, so breakouts above or below the box limits are particularly significant. This underpins the trend-following and stop-loss strategies of the technique.



### TRIP POINTS

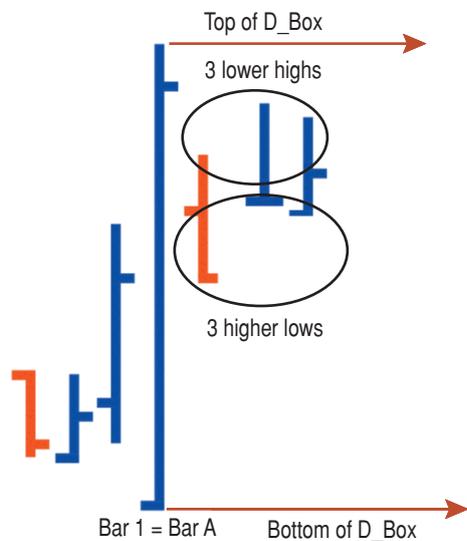
Although the D\_Box is plotted with relative ease, there are two potential trip points. Starting with equal highs, the Darvas box consists of a resistance line and a support line, and once confirmed, they remain in place until they are broken by a move either above

the top of the box (resistance) or below the bottom of the box (support). Once confirmed, the Darvas box plot lines are not recalculated until a break occurs beyond the perimeter of the box.

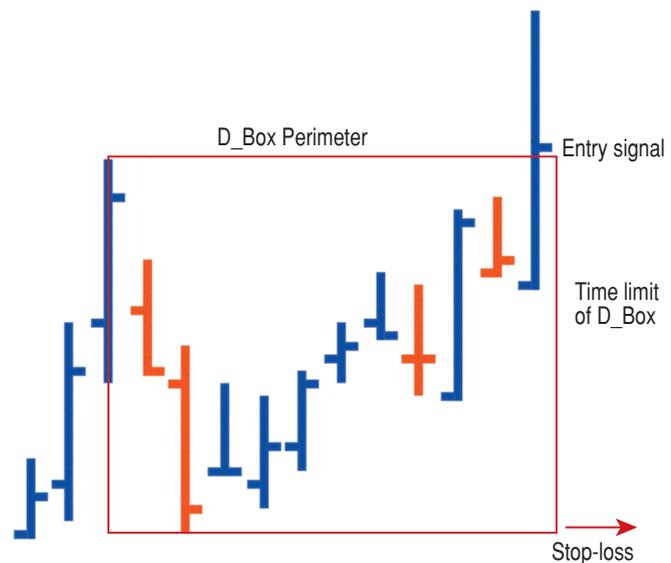
The core of the application of the Darvas strategy lies in what happens after the top and bottom of the box have been set. The box perimeter sets a trigger level for action. The placement or validity of the box is not affected by days with lows equal to the bottom of the box, as shown by bar X (Figure 5) or by days with highs equal to the top of the box as shown by bar Y. Once the top and bottom of the D\_Box are set, they remain unchanged until there is a price move beyond the confines of the box.

Nicholas Darvas recognized one special and unusual case. When the technique was first developed, the market had a different volatility profile, so it was unusual for the starting bar of the calculation — bar 1 — to form both the high and the low of the box. Darvas developed a rule to address this exception. Start with a new high for the selected period and call it *bar 1* (Figure 6). Then look for three days of lower highs relative to the high of bar 1. The high of bar 1 marks the top of the Darvas box. As soon as the top of the box is in place, you start looking for the lowest low of the period, starting with and *including* the low created by bar 1.

In the example in Figure 6, bar 1 also has the capacity to



**FIGURE 6: AN UNUSUAL CASE.** Sometimes, the high and low of the box are based on the first bar or the bar you used to identify the top of the box.



**FIGURE 7: ENTRY SIGNALS AND STOP-LOSSES.** Once prices move above the top of the box, it is a signal to enter a long trade. The bottom of the box is then used as a stop loss.

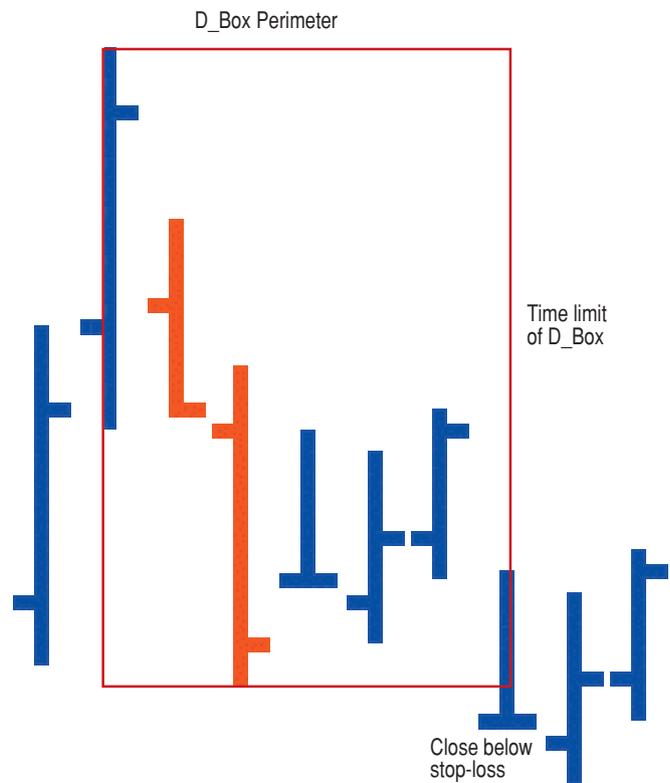
become bar A. This is because once the top of the D\_Box is set and you look for the most recent low, bar 1 is also the lowest low for the period. In this case, the first three days of lower highs are also three days of higher lows than the low of bar 1. In this extreme example, the top and the bottom of the box are set simultaneously. This scenario, although the exception when Nicholas Darvas was trading, is now more common.

### BOX LIMITS AND TRIGGERS

The triggers for action using the Darvas technique are set by price moves above the top or below the bottom of the box. A price move above the top of the box is a signal for entry action using the classic Darvas approach. Again, because of the volatility in current markets, I have found that the method's reliability is improved if you wait for a close above the top of the D\_Box (Figure 7).

Once prices move above the top of the box, it could act as a signal to enter a long trade. Once in the trade, you should use the bottom of the box as a stop-loss level for the new trade. An aggressive trader would act in anticipation of a D\_Box breakout by buying stock once the bottom of the box was confirmed. He/she would buy in anticipation of a breakout above the top of the D\_Box and use the bottom as a stop-loss point.

By definition, the breakout above the top of the D\_Box sets a new high for the selected period. You



**FIGURE 8: D\_BOX FAILURE.** At times, prices may move below the bottom of the box. This suggests that the prevailing uptrend has come to an end and if you are in a long position, then it's time to exit the trade.

## The Darvas technique provides a useful way to identify trends and trade breakouts.

would immediately start to apply the conditions necessary to set a new D\_Box. Once the new high is followed by three lower highs, the top of a potential new D\_Box is established. Once the bottom is created, the stop-loss level is lifted to match the new D\_Box. This is the essence of Darvas trade management.

The final D\_Box configuration is a D\_Box failure. This happens when prices close below the bottom of the D\_Box and signal an exit, as this suggests the prevailing uptrend has come to an end (Figure 8). The classic application of the technique signals an exit as soon as there is a price move below the bottom of the D\_Box. In the modern markets, the preference for an exit signal is for the close to be below this level.

As with all trading techniques, there is no guarantee. Once the D\_Box is established, it doesn't necessarily mean that prices will obligingly provide an entry signal by closing above the top of the box. Some prices just continue to drift lower and once they break below the bottom of the D\_Box, the trade is closed or a potential trade is abandoned. No new action should be taken until the stock is able to make a new high for the selected period. Only when this occurs will you be able to apply the D\_Box construction techniques again.

The Darvas trading technique is easy to apply and provides a useful way to identify trends and trade breakouts. Although it is a highly successful trend trading technique,

I decided to make some adjustments by incorporating the volatility in the current markets. In my next article, I will discuss the modern Darvas trading technique.

*Daryl Guppy is active in Australian, Asian, and Chinese markets and provides certified professional training for brokerages. He is the author of seven books and publishes a weekly newsletter that applies technical charting analysis to these markets. He also runs trading workshops in Australia, Asia, China, and the US.*

### RELATED READING

Darvas, Nicholas [1960]. *How I Made Two Million Dollars In The Stock Market*, American Research Council.

Guppy, Daryl [2004]. *Trend Trading*, John Wiley & Sons.

\_\_\_\_ [2003]. *Better Stock Trading*, John Wiley & Sons.

\_\_\_\_ [2002]. *Snapshot Trading*, John Wiley & Sons.

†See *Traders' Glossary* for definition

**S&C**

