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HOW TO BUILD
PROFITABLE
BREAKOUT STRATEGY

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www.SystemsOnTheRoad.com

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The Anatomy Of A Breakout Automated Trading Strategy: The Concept

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By being an automated full-time trader for 7 years, I came pretty early in my trading career to the conclusion that a well-constructed trading breakout model is by far the best way to aim for stable returns in automated trading. During all those years, I've been experimenting with many different approaches – most probably with all you know or can imagine. But from my experience, breakout models are timeless and very universal. In the following three articles I'd like to share some of my concepts and the most crucial components behind them.

A Breakout Automated Trading System (ATS) model use: 4 crucial components

There is no reason for looking for (over) complexity in automated trading. In fact, over the years I've learned that a refined simplicity not only works very well, but it also saves you a huge amount of technical struggles, problems, and headaches. The breakout concept I use can basically be coded into any trading platform, and many great strategies that I've been trading for years are, in fact, so simple that they only have several lines of code.

So, what does my usual breakout model conceptually look like?

In general, I approach the breakout ATS development from the perspective of four different components that need to be put efficiently together (ideally with some factor of creativity and novelty, which is necessary nowadays to be able to compete and stay in the game). These four components are (as I've personally named them for my own purposes):

- **Point of Initiation (POI)**
- **Distance**
- **Time Filter**
- **A Regular Filter.**

Again, don't look for any complexity; you'll see in a minute that the model is really a very simple one (yet, it can be very efficient).

Why these 4 components and what are they for?

Good question. You'll learn about them now.

Let's stop here for a moment. To fully understand why we'll use specifically these four components, let me ask you a question: Have you ever thought about what a breakout actually is?

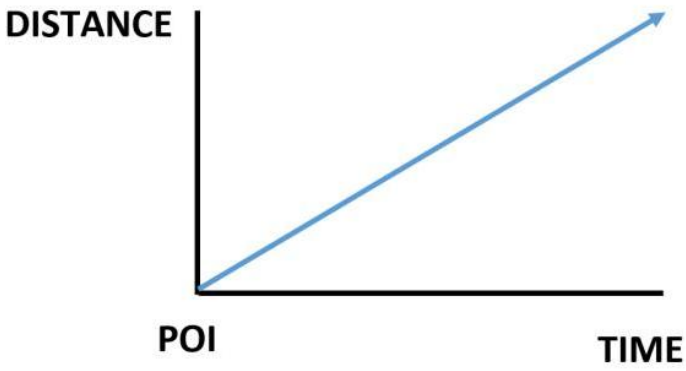
From my perspective, a breakout is nothing more or nothing less than a certain level, which needs to be reached by a market within a certain time (and under certain conditions), to give you a probability of a strong continuous momentum (which will give you, ideally, an average profit several times higher than your average risk).

In simple words, all you need is a level at which you can say, "once the level is penetrated, it's wise to buy or sell the underlying market".

But, how do you get such a level? Good question.

First of all, you need to start somewhere, right? So, how about define a point on your chart and then a distance from this point? This is what I call the **POI** (Point Of Initiation) and **Distance**. When you combine them together, you'll get a level at which you can wait for a breakout. For example, you can start with something very simple and obvious, like yesterday's closing price on a daily chart to define a **POI**, and add 3x ATR as a **distance**. This is how you make a breakout level and you are half-done (of course, this is just a very simple example). However, in the last part of this 3-part article, I'll show you that even a simple combination can give you a very good strategy.

The model is so simple that it can be interpreted by this basic drawing:



Now, let's continue. You already know two blocks out of the four – how to get a breakout level. How about the rest?

From my experience, constructing a breakout ATS just with the POI and the Distance isn't sufficient and you are still far from the end. With only these two components you can (and probably will) get too much noise and false signals that the ATS won't be even tradable.

So, now, what you really need is to add some restrictions (but not too many to avoid over-fitting) that will help you to get rid of some noise and make the strategy tradable. And here, you add my other two components – time filter restrain and a regular filter.

First of all, you add the time restrain. Once you add it, you just allow a strategy to reach the breakout level only within a certain period of time. It really makes a lot of sense (and mainly a big difference). Why? **Because some breakout levels work better only in early trading hours, some in later trading hours and some work only within a very specific time window**. This is due to different markets behavior during particular time windows, so you cannot ignore this, rather make it a natural part of your breakout ATS.

And second, you add a regular filter. Why do we still need it? Because once you construct your first breakout ATS based on the model above, you'll very soon realize that you'll still need an additional filter to improve certain parameters like Average Trade, Profit Factor, and Return/Drawdown ratio. Therefore you'll have to experiment which filters to use (generally some indicator-based or price-action-based filter). Once you find a suitable filter (and still keep it simple to overcome the danger of over-fitting), you'll finally have something more reasonable to continue with (not to trade with yet, just to continue with other robustness testing, etc.).

In the next part, we'll have a closer look at the four components of the breakout ATS model we've learned about today.

To sum up:

- A good and powerful trading model doesn't need to be complicated.
- A breakout is nothing more than a certain level in the (near) future that needs to be reached to buy or sell your underlying market.
- A breakout strategy is conceptually a very simple technique: all you need is a POI, time, distance, and often another additional filter.
- Once you start working smartly and creatively by putting these four components together, you can get an interesting, efficient, and robust breakout strategy.
- Each component in the model has got its purpose and all of the components are crucial to be able to develop something reasonable and tradable.

Tomas Nesnidal

Tomas is a European trader and developer, with 10+ years of full-time trading experience. You can download an example of his strategy for FREE on his blog www.SystemsOnTheRoad.com/blog.

The Anatomy Of A Breakout Automated Trading Strategy: The Components

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In the previous part of this 3-part article, I explained the concept of my breakout ATS model that I've been successfully using for about seven years. We've learned about four crucial components of the model: POI, distance, time filter, and a regular filter. In this part, we'll explore each filter more in detail.

POI

When it comes to scouting for the best Point Of Initiation (POI), you must be as creative as possible. Your POI can be basically anything.

When I started constructing my first breakout ATS strategies, I used pretty simple methods of getting a POI. It usually was:

- Yesterday's Close
- Today's Open
- Today's Low (for longs)
- Today's High (for shorts)
- Lowest O/H/L/C X-days back
- Highest O/H/L/C X-days back

All of these are very basic and obvious; still I was able to construct pretty impressive and robust strategies with just this beginner's stuff. Plenty of these strategies are still part of my portfolio.

Of course, over time, I've started thinking about other possibilities of different POIs and I've added many more:

- Moving Averages – any kind
- Moving Averages based on O/H/L/C/Typical Price
- 50% retracement of the current day
- Lowest/Highest values derived from any two or three techniques described above
- All of the previous obtained from different timeframes

This, of course, was a significant step further that allowed me to come up with many different breakout ATSs, much better complementing the already existing ones in my portfolio.

Later on, I progressed even further and developed many of my own custom indicators and POIs, but I can still make a great amount of robust strategies just with the POIs presented above. This is absolutely sufficient for at least the first couple of years of a trader's career.

Distance

Looking for a way to properly set an optimal distance was another matter developing pretty much over time. In general, I started again with the most common and obvious one: using an ATR (Average True Range) or TR (True Range) multiples. Nothing fancy here. The first two techniques I started using were:

- POI +/- (X * ATR)
- POI +/- (X * TR)

Again, you can stick to just these two for a very long time and get fantastic and robust strategies. But of course, you also want to keep evolving your approach so you start looking for different techniques to deploy. In my case, it was:

- GapLess ATR
- GapLess TR
- Bollinger Bands difference
- Certain Moving Averages differences
- Highest High (X) – Lowest Low (X) differences

Surprisingly, the results were not usually better than when using the most common and obvious ATR/TR! In fact, I quit GapLess variations completely and, although I still keep the other techniques in my D&P (Design & Prototype) code, the majority of my strategies still use ATR/TR. You don't really need to be creative when it comes to the distance.

Time Filter

At the very beginning, I used to be very "precise" when it came to the time filter. That said, I used to optimize the exact, most optimal start time and end time for every breakout ATS. Not surprisingly, I soon realized there was too much over-optimization (making it much harder to pass my very demanding robustness tests). After a couple of years, I simplified the time filter approach pretty much and, right now, what I like is to divide the regular trading session into three or four equal parts and test the efficiency of each part separately (I call this T-Segmenting, because it's just splitting the time into different segments). This is an absolutely sufficient solution and also a very logical one, as from my previous experience, I already know that the usual regular session behaves differently especially at its beginning, in its middle, and at its end. Therefore T-Segmenting into three different parts is the most usual approach in the case of my breakout ATSs.

Just to give you a small example, let's say I develop a breakout ATS for e-mini Russell 2000 (TF). The regular trading hours are 9:30 – 16:15. So, I make three T-Segments:

- T-Segment 1: 9:30 – 11:45
- T-Segment 2: 11:45 – 14:00
- T-Segment 3: 14:00 – 16:15

Then, I test my breakout ATS candidate for all three T-Segments and perform robustness testing in each of them to see which one is the most suitable.

Regular Filter

The final part is a regular filter. Again, nothing fancy here. I basically use four different groups of regular filters:

- Price Action based filters
- Moving Averages based filters
- Trend Indicators based filters
- Volatility based filters

For the first group, I usually use quite simple usual conditions, like:

- C <> O/H/L/C X-bars backs
- C <> O/H/L/C of the current day or the previous day
- Any combinations of the above.

For the second group, I usually use:

- C <>certain Moving Average
- Two different Moving Averages
- Certain (relative or absolute) distance of the current price from a certain Moving Average

For the third group, I like the following indicators:

- DMI
- ADX
- Combination of the both

Finally, for the last group, I like following concepts:

- ATR <> X
- Comparing 2 ATRs with different periods
- Using certain absolute or relative difference between two ATRs with different periods

I don't have a bias towards any of the techniques and I freely use or test all of them. At the end of the day, it's always the robustness test that will reveal the truth. Whatever passes the robustness testing is fine for me.

Of course, over time, I've again developed plenty of my own filtering techniques and indicators, but still, I've been able to happily live just with the stuff I've described to you.

To sum up:

- You don't need fancy techniques to develop a robust and viable breakout ATS with my simple model.
- However, it's still preferable to keep experimenting, looking for improvements and new ideas; as you can see, I always like evolving all of the components of my breakout ATS model.
- The way to develop a workable and robust breakout ATS is to experiment with as many different POIs, distances, T-Segments, and regular filters as possible.
- Of course, the most important part is still the robustness testing, so whatever the backtest equity of your breakout ATS candidate looks like, you still need to be sure that a candidate passes your robustness testing criteria (I personally use very demanding ones).

Tomas Nesnidal

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The Anatomy Of A Breakout Automated Trading Strategy: Markets, Timeframes, Exits, Strategies

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In the previous two parts, we went through the anatomy of the breakout ATS. I explained all the components of the model I've been successfully using for many years, and I went into each component more in detail. In this final part, I would like to show you some examples of what you can realistically expect from my breakout model and I'll also add some more information which are quite important.

Markets, Timeframes, Exits

One of the usual questions is what markets and timeframes should be the model applied to. I personally trade only futures markets and I've found that this model can be applied to any market. Most of my breakout ATSs have been developed for index markets, however, I also develop pretty neat breakout ATSs for all other futures markets you can just name. Some of the models are really robust; the best one works across 27 different markets. Of course, it took me several years to develop such a universal breakout ATS.

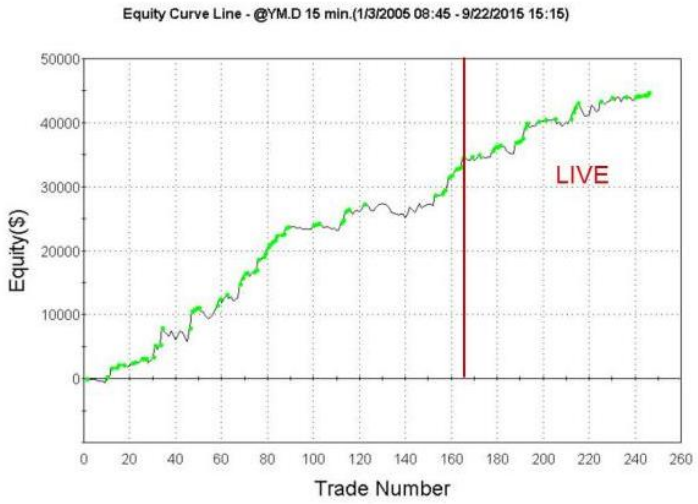
When it comes to timeframes, my most favorite ones are 15-minute and 30-minute. Both timeframes have been serving me pretty well. Sometimes, I use 45-minute or 60-minute too. I rarely trade less than 10-minute timeframe. Lower timeframes already do have too much noise and, as a result, you have too many false breakout signals. One breakout ATS applied to one market and one timeframe usually produces between 40 – 120 trades per year. It might sound like not too much, but remember, the key is a portfolio. I trade plenty of breakout strategies, so I'm definitely not bored neither I suffer from a lack of trades.

For the breakout strategies, you can use many types of exits. I'd recommend you to start with End-Of-Day (EOD) exits, though. More than half of my strategies have just this exit type implemented. It's a very good exit to start with. Of course, you can develop both intraday and swing breakout ATSs with the model and adjust the exit method accordingly. For swing strategies, I use many different types of exits – profit-targets (USD-based, %-based, or ATR-based), bars since entry exit, or some other proprietary methods. Exits can make a big difference and it's always wise to experiment with different parts. However, I still prefer keeping it really simple.

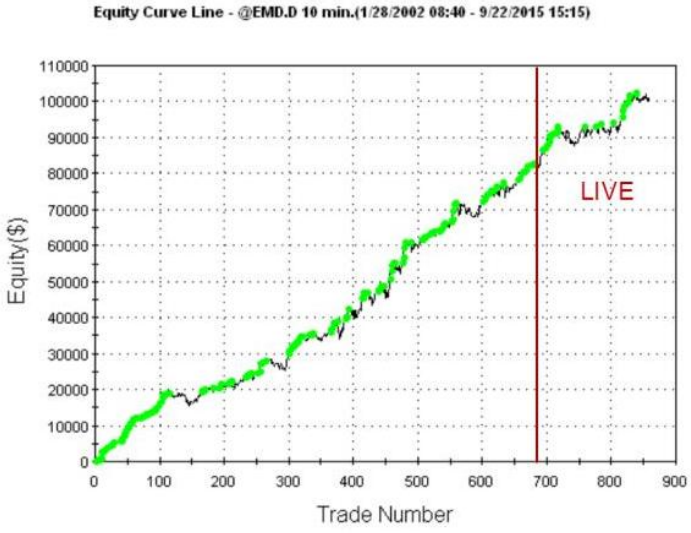
Examples

Let's have a look at some examples just to get an idea of what kind of performance my breakout ATS model can bring.

The first example comes from E-mini Dow Jones strategy. It doesn't trade often, but still performs very well. It's a typical breakout ATS strategy: it uses OPEN of the current trading day as POI and ATR as distance. Then, both a simple volatility-based filter and time filter are added. The exit is only at the end of the day (EOD), or stop-loss (in this case 700 USD). Max drawdown of the strategy is 2.275 USD.



Second example is E-mini S&P 400 breakout ATS that trades much more frequently.



This strategy is, again, a typical example of a simple breakout ATS. It uses moving average as POI, ATR as distance, moving average as filter and is allowed to trade anytime during the day. Exits are on stop-loss (in this case 1000 USD) or at the end of the day. The maximum drawdown of the strategy is 5.590 USD.

These strategies give you a solid example from both sides of the spectrum: a strategy trading rather infrequently and a strategy trading pretty frequently. Of course, not all the strategies work that well. Some of my breakout ATSs have suffered bigger drawdowns than anticipated and a few breakout ATSs in my portfolio had to be switched off completely. But this is part of the game; in markets you never have any guaranties. Although you do all the best you can, sometimes it simply happens that a strategy fails. We aren't in a business of guaranties. Fortunately, a well-built portfolio can pretty well handle hiccups like these.

I present some other strategies on my own web, with real, live results. The strategies are tracked by Futures Truth Company and Striker.com too, so the numbers are independently verified.

Algorithmic Ecosystem

The Impact of Algorithmic Trading

On top of that, if you were interested in seeing what a complete breakout ATS strategy from my portfolio looks like, you can download one (with the code included) from my blog, www.SystemsOnTheRoad.com/blog too. It's a real strategy that I currently trade in my portfolio.

That's basically all. The main purpose of the 3-part article was to present the breakout ATS model, explain its components further, and give you some examples of what to expect. The rest is up to you. Good luck.

To sum up:

- Presented breakout ATS model can be applied to any market (I have just experience with futures markets, though).
- You should preferably choose higher timeframes, like 15-min, 30-min, or even 60-min.
- The model can be used for developing both the daytrading and the swing strategies.
- In the case of daytrading strategies, the end-of-the-day (EOD) exit is simply the best and preferable choice, as all my experiences confirm.
- For swing strategies, you can experiment with any kind of exits.
- You need to have reasonable expectations, based on the two equity examples above.
- Never forget to think in terms of portfolio rather than in terms of a single strategy; it will improve your performance and protect you against situations when some breakout ATS fails, which might happen to any developer and trader.

Tomas Nesnidal

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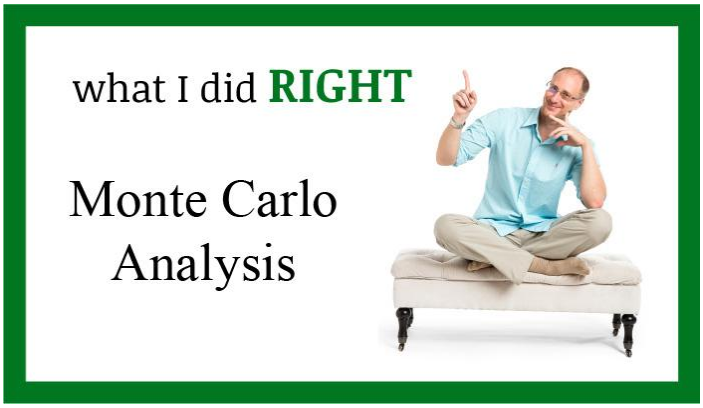
To see specific example of how the profitable breakout strategy can look like, download here one of strategies from my live portfolio for FREE!

For more information about how I test my strategies click here.



If you want to know how to get from 2,000 USD trading account to a private hedge fund, read this article.

I hope that you found these articles inspirational and helpful. Now this can be a good moment to introduce myself a bit further and to let you know how and why I am going to try to help you to start making living in trading - preferably as soon as possible.

My name is Tomas, I was born in the Czech Republic and I currently live on a beautiful coast called “Coast of the Sun” (Costa del Sol) in the south of Spain. I am a full-time trader and have been trading since 2004, with focus on automated trading since 2009-2010.

I have experienced a long and exciting journey with many obstacles to fulfill my dreams of absolute freedom, wealth, abundance and financial independence. Those were the main reasons why I started with my trading (although my original background is film industry) and I believe that the same applies to you. Now, when all my dreams have become true and I live exactly the life I always dreamed of, I just feel that I want to do the next step - TO START SHARING WITH OTHERS.

Although I am not going to give you my best strategies nor my top know-how (sorry, I need to keep my edge), what I am going to do is to show you what the journey to profitable trading looks like, what to do, what NOT to do, what worked for me, what never worked for me, what mistakes to avoid, and lastly - **how to train yourself to become a highly successful trader**. Believe it or not, although there are thousands of technical and conceptual trading knowledge that I had to learn, the most important was realization, that any kind of success in trading (including fully automated trading) is 90% mental. Doesn’t matter how good you are technically, mathematically, or in programming - the real success will always be in your creativity, courage, bravery, your will and true decision that you **want** to change your life and that you **will become** a profitable, preferably full time trader to fulfil all your financial and personal dreams. It is our mind and our creative power that decides whether we will follow success or failure - not a platform, software, coding capabilities, hardware, or anything similar to that.

I know that. I have been there, done that, and had to come a long way especially mentally to become who I am now. And now I am here to share and to help.

On the websites SystemOnTheRoad.com, that I am working on with my friend and my former student Jan, we are going to try to bring new, positive and high values to your trading, and preferably to your life too, through a lot of FREE materials - like articles, videos, ebooks, etc.

Therefore, don't miss this opportunity and please whitelist my email info@systemsontheroad.com to be sure to get all my emails.

I will share my new ebooks, articles and also some extras on Facebook, LinkedIn and Instagram, you can follow me there, too.

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