

## **Steve Hopwood's Swing Momentum auto-trading robot**

Welcome to my swing trading robot. Remember: **you use at your own risk; using it does not guarantee profitable trading. A lot of people lose a lot of money trading Forex.** .

The robot starts by identifying the latest swing high\low on a higher timeframe than the one that will actually be used for trading.

- When the latest swing is high, the robot takes the trend to be long.
- When the latest swing is low, the robot takes the trend to be short.
- From here, the robot looks at a lower timeframe to actually place trades. Taking an overall long trade as an example:
  - When the robot identifies a lower tf swing low, it takes a long trade.
  - When it identifies a lower tf swing high, it closes the open long trade. It also closes the trade if it identifies a higher time frame trend change.

That's it. Pure price-action trading.

What follows is aimed at newbie traders. Experienced\successful traders do not need it, so I suggest you to proceed directly to the description of the trading method used by the robot, on page 8.

### **Definition of a 'swing'**

A swing consists of five candles.

- For a 'swing low' the 5 candles are:
  - 1, 2, 4 & 5 all have higher lows than no 3, forming a downward-pointing wedge shape. Previous to the swing, the market will have been moving downwards. Remember, it is the *low* of each candle that counts; high, open and close are irrelevant.
- For a 'swing high' the 5 candles are:
  - 1, 2, 4 & 5 all have lower highs than no 3, forming an upward-pointing wedge shape. Previous to the swing, the market will have been moving upwards. Remember, it is the *high* of each candle that counts; low, open and close are irrelevant.

I found this brilliant pic on a site I was directed to, that illustrates this beautifully.



Some of the things that newbie traders find hardest to get their heads around are these.

- From any given point:
  - The market will go up.
  - Or it will go down. Suppose it goes up:
    - Then it will go down again.
    - Then it will go up again.
    - Then it will go down again.
    - Then it will go up again.
    - .....

Sometimes the going up will be greater than the going downs. The market is trending up.



Sometimes the going downs will be greater than the goings up. The market is trending down.



Sometimes the goings down and the goings up will pretty much cancel each other out, so the market is ranging.



The sharp-eyed will have noticed that the above chart pictures were all taken from the same pair – EURUSD – but with different time frames; M15, H4, M5. They were all taken from the same chart on my trading platform, yet all show different information.

Why?

Because different chart timeframes show different positional information. A stunning rise on a 1 minute chart is a retrace on an falling hourly, is a barely noticable blip on a 4 hourly, does not even register on a daily.

Another *really* difficult thing for newbies to get your heads around is this: you have no way of telling when the markets are going to move in the opposite direction to that in which they have just been travelling.

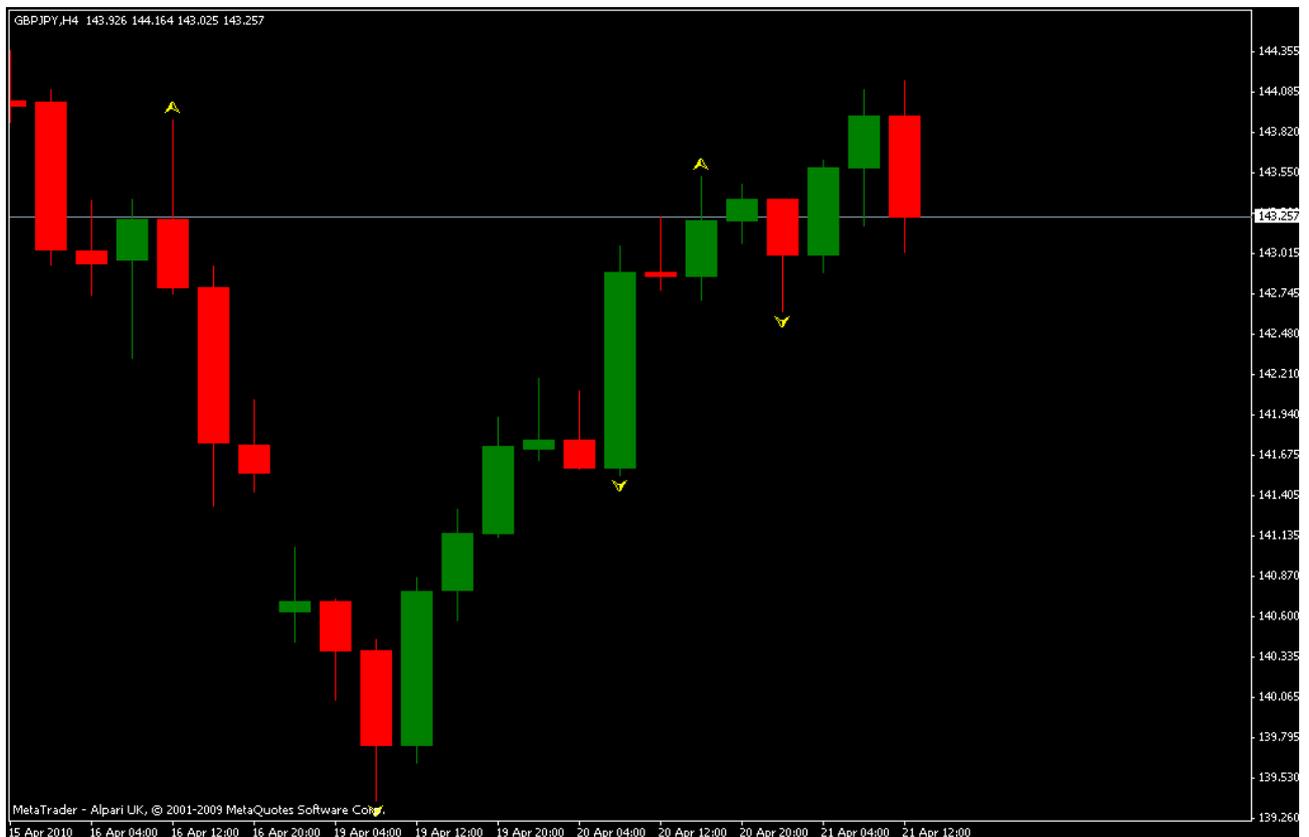
It is the 'big money' players who move markets – the big banks, people like Gorge Soros. They have millions to play with. When the Bank of Japan decides it needs the Yen stronger, it spends gazillions buying it, so the xxxJPY pairs fall. The principle here is; big money trumps small money. Big money trades the high time frames with lot sizes that make ours look silly.

The waves, or swings that we see on our charts are caused by a change of sentiment on the part of market movers. We small guys have to trade within the confines of the market movement caused by the bigger guys, but we do not try to trade the longer time frames. Instead, we let one of these be our trend setter, and we trade the moves within this trend, but on a smaller time frame.

- A swing high forms when the market *was* rising but is *now* falling. The upward momentum has disappeared, for now; it may return.
- A swing low forms when the market *was* falling but is *now* rising. The downward momentum has disappeared, for now it may return.

There is an indicator that we can use to show us the swings. It is called Fractals and is found within the Indicators section of your mt4 platform Navigator window. The name is ridiculous. If you

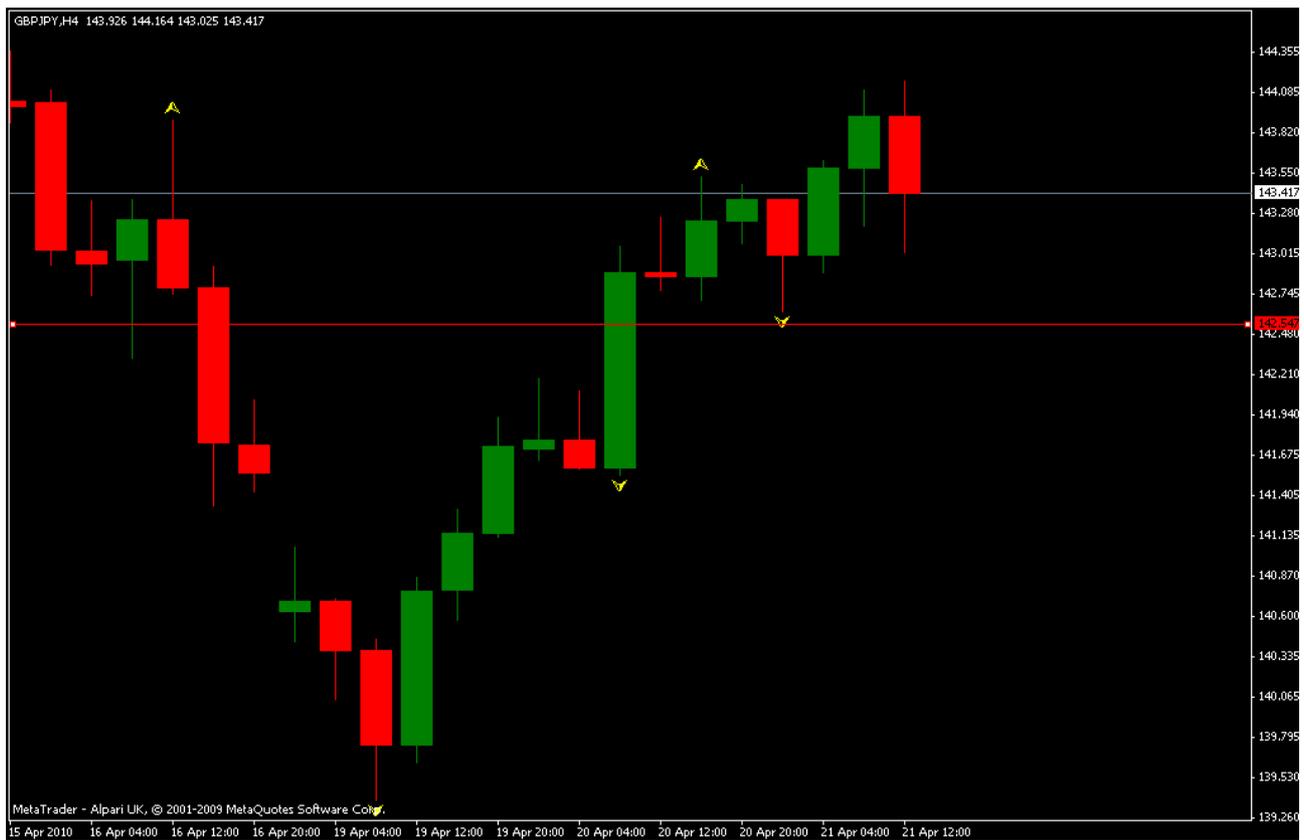
Google 'fractals' you will find nothing that suggests this indicator has anything to do with mathematical fractals, so do not expect to glean any insight from doing so. Drag a Fractals indi onto a chart and it will calculate and show all the swings high and low. Have a look at this chart, a 4 hour GJ.



You can see several fractals (the arrow heads), but we are only concerned with the last one on the chart; what went before is not relevant.

The last fractal on this chart shows a swing low, so we make the assumption that the market will resume its downward move at some stage. Indeed, had we taken a sell at the start of the last candle on this chart, we would have made a decent profit.

We had no way of knowing whether the market *would* resume its fall; indeed, it had to be *rising* in order to create the new swing low. What we do instead, is move down to a lower time frame to look for trading opportunities.



First of all, we draw a line on the 4H chart to represent the trend on the higher time frame. I use red to remind myself that the trend is down, green for up. It does not matter where the line goes; its purpose is merely to remind ourselves where our trading direction is.

Now we consult a lower time frame. Typically, we use a minimum ratio of 1:4 so:

- Trade 15M: higher tf is 1H
- Trade 1H: higher tf is 4H
- Trade 4H: higher tf is D1

Ignore the other time frames. Lower than 15M trades are going to be murdered by chop. Higher tf's need deeper pockets than we have to accommodate a huge stop loss.

So, I have ascertained my trend on the 4H, so now I drop to the 1H. The fractals adjust to the new time frame and show a whole new series of swings.



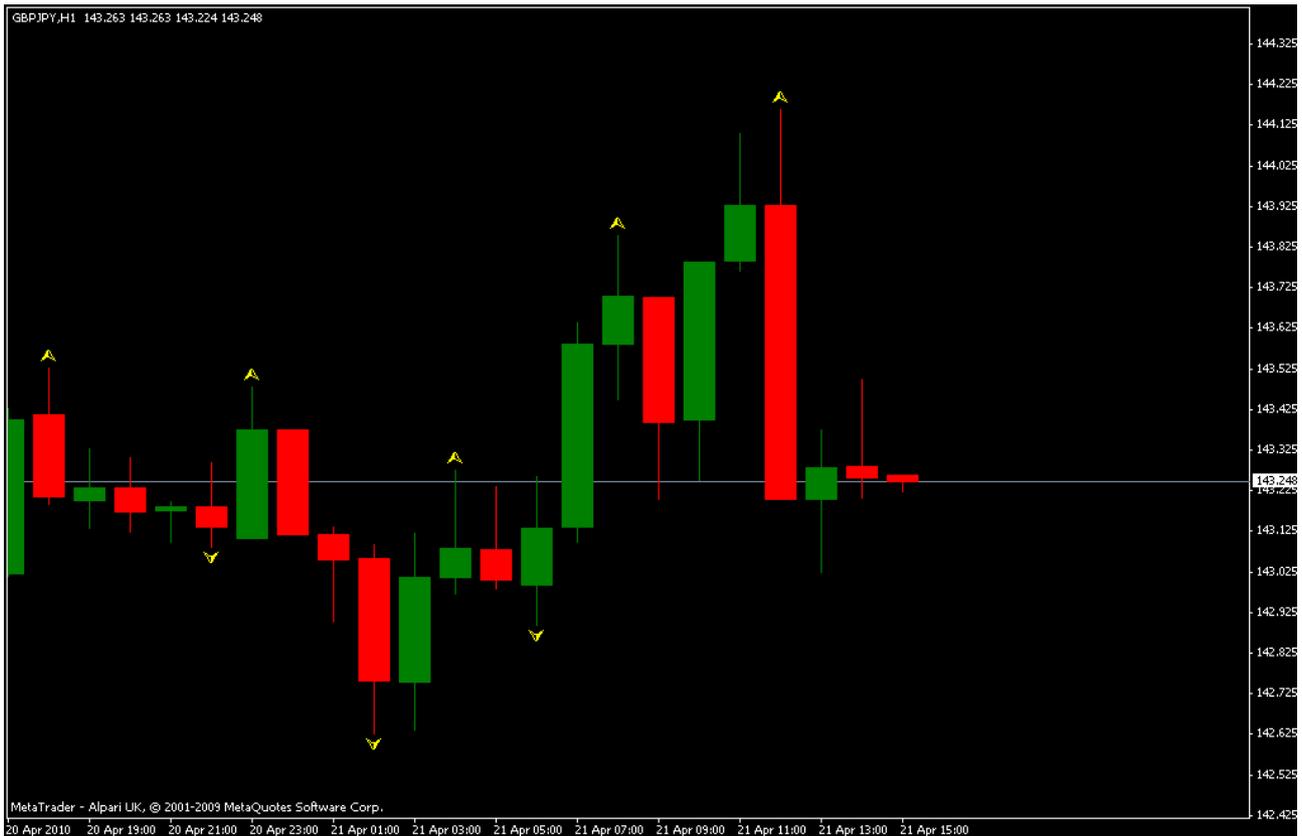
This shows the latest swing forming – a swing high this time. We cannot trade this yet. Notice the final candle on the chart is only the *second* after the long red marked by the Fractal. It is a green candle – the price has been rising. If it continues to rise and eventually passes the high of the fractal candle, the swing will not have happened and that fractal will disappear.

What we actually do is wait until the opening of the third candle after the fractal. Remember:

- A swing high forms when the market *was* rising but is *now* falling. The upward momentum has disappeared for now; it may return.
- A swing low forms when the market *was* falling but is *now* rising. The downward momentum has disappeared for now; it may return.

The swing low on the higher time frame (4H) indicated the loss of downward momentum. We are waiting for this to resume. So, if the fractal remains in place at the start of the next candle on the 1H chart, the rising momentum has disappeared, suggesting the market is about to fall again and so resume the down trend on the 4H. We take the sell trade the moment the new 1H candle turns red to indicate the resumption of the downward movement.

The third candle has formed, it is red, just, so we are in.



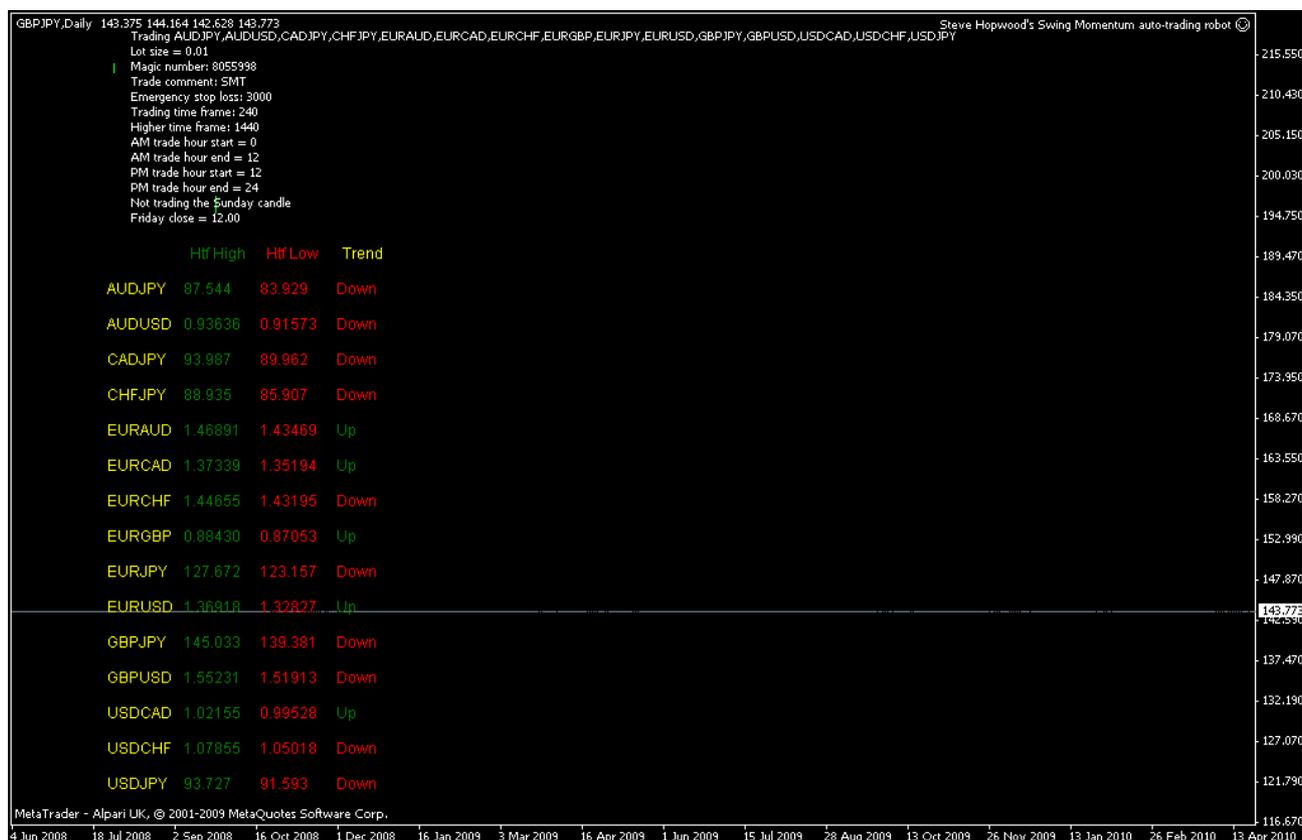
### The Trading Method

To summarise, the trading method is this:

- Use the Fractals indicator to find the most recent swing on a higher time frame chart.
  - Swing high – trend is long even though the market falls to create the swing
  - Swing low – trend is short even though the market rises to create the swing
- Go to the lower time frame chart to do the actual trading. Entry is:
  - Long trend: wait for a swing low then buy on the third candle after the fractal appears.
  - Short trend: wait for a swing high then sell on the third candle after the fractal appears.
  - Stop loss is a distant, 'emergency' stop in case of system failure, disconnect from the broker etc
- Exit is:
  - close a buy at the next swing high
  - close a sell at the next swing low
  - close at the next trend change
- This is intended to be a medium-term strategy but there is no harm in experimenting with, say, trading the 15M whilst using the D1 trend. The choice is yours.

## Using The Robot

The robot is a multi-pair trader, which means you can drag it onto a single chart (GBPJPY because it generates the highest tick volume). There is lots of screen feedback to tell you what is going on. Your chart will look something like this:



If you are unfamiliar with swing trading, I suggest you treat the robot as a single pair trader, with just one pair in the PairsToTrade input. Drag it onto the chart appropriate to the pair and add a Fractals indi so you can see the information the robot is working with. You will not need a new magic number for each pair. The robot is independent of the chart time frame, so you can switch any number of times to different tf's to see what is going on.

Once you are confident you understand what is going on, then delete all those charts and set the robot up as a multi-trader.

Each pair displays the htf most recent swings high, low and trend. I might remove the irrelevant swing later on.

The robot's inputs along with their defaults are:

- **PairsToTrade = AUDJPY,AUDUSD,CADJPY,CHFJPY,EURAUD,EURCAD,EURCHF,EURGBP,EURJPY,EURUSD,GBPJPY,GBPUSD,USDCAD,USDCHF,USDJPY:** the list of pairs you wish to trade. Separate each pair with a comma. Do not add pair suffixes such as IBFX 'm'; the robot detects these and automatically adds them.
- **Lot = 0.01;**
- **MagicNumber = 8055998;**
- **TradeComment="SMT";**
- **EmergencyStopLossPips=3000:** included in case of accident. This is a 5 digit wally-plonker setting; the robot automatically adjusts for 4 digit pricing.

- **TradingTimeFrame=15:** the time frame you wish to trade, expressed in minutes.
- **HigherTimeFrame=1440:** the higher time frame you wish to use to ascertain the trend, expressed in minutes.
- The next 4 inputs are your trading hours. The defaults allow trading all day.
  - **start\_hourm = 0;**
  - **end\_hourm = 12;**
  - **start\_houre = 12;**
  - **end\_houre = 24;**
- **FridayStopTrading=true:** tells the robot to stop trading at StopTradingHour on Friday
- **SaturdayStopTrading=false:** for those whose markets are still open on Saturday
- **StopTradingHour = 12;**
- **TradeSundayCandle=false:** tells the robot whether or not to trade the Sunday candle. This will not be relevant to you if your markets open on Monday.

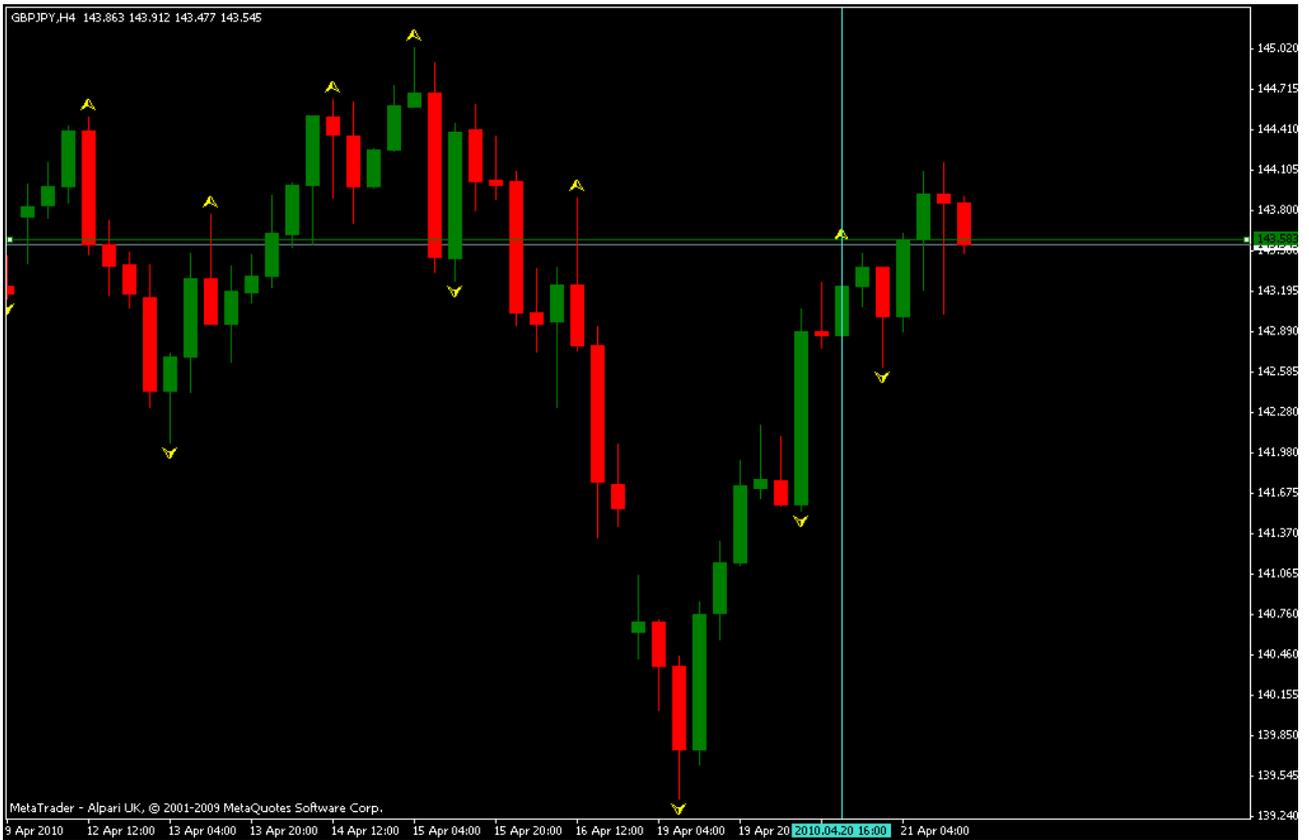
As well as this list, there are the inputs that allow you to adjust display to your liking; play with them.

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### **A note to experienced traders.**

This could be a flawed strategy; this is why I have not yet started an individual thread for it. The way I read it, we are supposed to take the last *two* htf swings as our trading boundaries. If the market subsequently exceeds the swing high, then the momentum is long and we should be trading long *only* after this break of the high. Once the break occurs, the momentum is considered to be long even when the markets retrace below the high, until it breaks below the most recent swing low. Then the momentum is considered short.

This pic illustrates that the momentum is long, and will remain so even though the market is below the swing high. The vertical line marks the swing high that is broken to create the momentum for long trading – directly the opposite of the strategy this robot is trading.



The momentum for trading would remain long until the markets either break the swing low, or form and then break a higher one. I shall re-code the robot in light of this, should it prove necessary.