FIREBIRD
May the pips be with you

Firebird ... the fabled bird of Greek mythology
endures as a symbol of immortality, consumed by fire to rise from the flames born anew."

All screens shots are from a daily chart but the EA also works on other time frames.
The horizontal lines in the grid are 30 pips apart.
PipStep=30 and TakeProfit=30 Lots=1 is assumed in all examples.
All profit/losses are inclusive spread and exclusive slippage and rollover profits/losses.
Don't expect easy answers. We are playing a game with thousands of other cutthroats, erm traders, that play for keeps.
In it's current state Firebird is to bugged/untested /unsafe for trading real cash!

NOTE: These instructions are for original versions of Firebird. We will need to update these instructions to be fully applicable to the current versions.   Aug. 2006
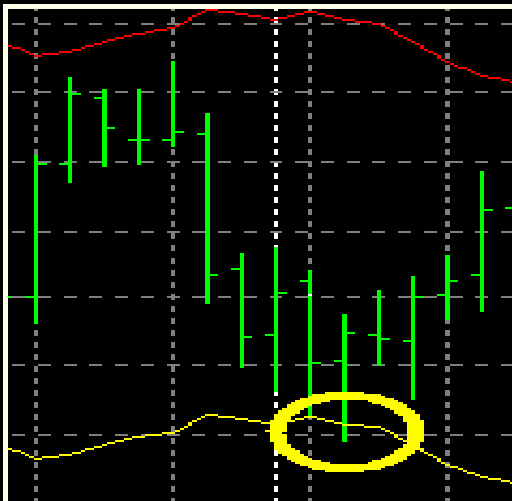

Picture 1

If you look from a distance at a lot of daily data, you see prices move in rather smooth waves.
If you look closer you see there sometimes are spikes. Those spikes usually are quickly corrected.
Firebird tries to catch those spikes. (white circles)
To determine what's a spike firebird first calculates a simple 10 bar moving average.
Then it shifts that average up and down a certain percentage to form bands. (envelope)
All prices outside the envelope are considered spikes/entry points.
We can only guess what causes a spike. A few examples of things that may have impact are:

1. Oil crisis

2. Economic data released

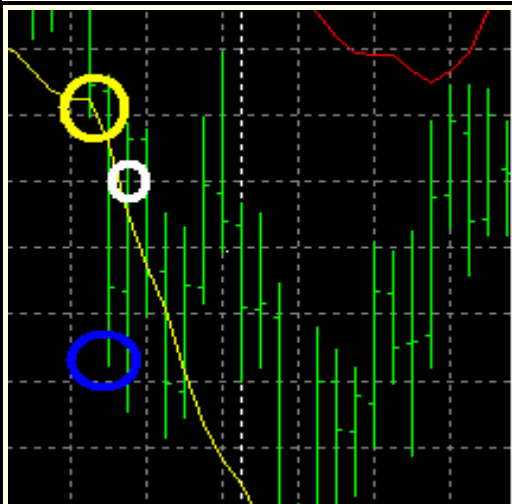3. War, earthquakes, hurricanes etc.

4. Mind games played by banks.

The reason is not important. The only thing that counts that the spikes are there.
Most of the time the spikes are short lived and retrace back into the channel within 1-5 bars.
But stock market crashes like the one after 9/11 can have very strong spike/trend that takes very long to correct.
You can ask yourself if the news should be monitored. Well my personal opinion is no. First of all I have a daytime job so Firebird has to trade without any user intervention. Reading news is an art on itself. The spikes usually are caused by the market overreacting to something.

Examples

<table>
<tr>
<td>
Picture 2</td>
<td>When the price breaks the lower band, Firebird goes long.
Then waits for the price to reverse and takes a 30 pips profit on the next bar.</td>
</tr>
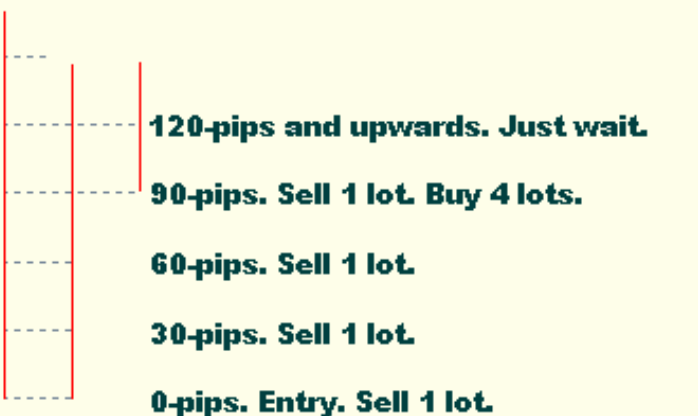<tr>
<td>
Picture 3</td>
<td>In this example the trade goes against us.
After going long in the yellow circle the price keeps dropping.
Every 30 pips the price drops Firebird buys another lot.
The 4th lot is bought in the blue circle.
Profit is taken in the white circle.
--> The average buying price + 30 pips.
All 4 lots are sold at the same time.
Some will make a loss and some will make a profit.
On average 4x30=120 pips profit is made.</td>
</tr>
<tr>
<td>
Picture 4</td>
<td>The trade is entered at the yellow circle.
As you see the price keeps going against us for several bars.
In the blue circle the last sell is added to our position.
The top red line is the average price of our trades.
The bottom red line is our Profit target. AveragePrice-30pips.
Then we have to wait until the red circle and we finally can grab some profits.</td>
</tr>
</table>

The above trade didn't go so well because we had to wait 14 bars to cash in.
$1200 in 14 bars isn't that bad if it doesn't happen often.
But what if the bar with the red circle and the one next to it didn't get low enough?
Then we would have a been in an up trend with 4 open short positions.
Soon Firebird will buy more positions on the way up. 8 in this picture.
That's 8x1000 for buying the lots plus a lot of margin.
The first position for example 8*30=240 pips against us.
The second position 7*30=210 pips. etc
That quickly adds up so a large sum of money! ($18800)
Especially if you are in bad luck and several pairs go against you.
That's the biggest problem of Firebird. But there are ways to minimize this risk.
You can configure Firebird to only enter x pairs at the time no matter how many charts it's running on.
This guarantees plenty signals but limits large positions.
Please note that trading 1 pair doesn't mean Firebird won't use more than 1 lot.
By design Firebird keeps averaging/adding lots until your account blows up.
The MaxLots setting allows you to define what the maximum number of lots is that Firebird trades.
If you stop Firebird from averaging you have to wait longer until the trend reverses and Firebird starts cashing in.
Even if you stop averaging you keep loosing money if the trend goes against you.
Just because in lots in your account keep loosing more and more.
FireHedge is the solution to this problem.

 120-pips and upwards. Just wait. 90-pips. Sell 1 lot. Buy 4 lots. 60-pips. Sell 1 lot. 30-pips. Sell 1 lot. 0-pips. Entry. Sell 1 lot. Picture 5	Lets look at a short position. (trend broke the upper band) Firebird does its thing and buys at a loss of 0, 30 and 60 pips. At 90-pips the, configurable FireHedge kicks in. Firebird sells its last lot. Now the short position is 4 lots. At the same time (90 pips) it also goes long with 4 lots. Assume the trend goes another 1000 pips against us. (trend keeps going up) Your 4 short lots suffer a 4x1000=4000 pip extra drawdown. But your long lots gain 4x1000=4000 pip profit. Now we just have to wait until the trend reverses and start making profit. This can take a while in extreme cases but at least we still have our account. And because we have the position hedged we don't even loose on rollover costs. Account size needed to trade this method: 1+1 lots: $2300+ (0 pips) 2+2 lots: $4900+ (30 pips) 3+3 lots: $7800+ (60 pips) 4+4 lots: $11000+ (90 pips) 5+5 lots: $14500+ (120 pips) Don't expect this to work with a 1 pip accuracy because we have to deal with things like spread and slippage. We can't either open/close a position on exactly the 30-pip border for example. The reason for this is that the price may keep bouncing up and down a few pips around that border. That would mean many opening/closing of the positions and that way loosing many pips in spread.

First of all I'm planning an option to let Firebird only take positions in one pair.
Even if you have the EA running on 10 pairs. This will reduce the profit to about $400/day.
You will be missing out on those lovely $900 days.
But when things go wrong they only go wrong on one pair. It's more likely your account can handle that.
I know it's very tempting to go for more profits. But losing $30k stands for 100x30 pips profit.....

 Picture 6	In this example width of the envelope is wider. The trade enters in the yellow circle. The horizontal red line is the entry point of the example above. (Picture 4) Exactly the same chart. Just wider envelope. (higher percentage) The entry point is about 30 pips higher. That's 30 pips less risk if the trend doesn't reverse quickly. Compared to the above chart we could exit the trade 30 pips earlier. That's not only safer but we could use a trailing stop to lock in that extra 30 pips. Now look back at 'Picture 2'. The envelope would have shifted down 30 pips at that place too. So we miss a trade there. We need to find a balance between potential profits and risk. Very wide bands means less trades with very high probability. Plus more trailing stop potential. Narrow bands means more trades with less probability and less chance with a trailing stop. But if you take my suggestion of trading 5+ pairs but only take positions in 1 pair my guess is that you still get enough signals to trade every day. In the end it all depends on your nerves and trading capital. Safety above all. It's very easy to wipe out your account and loose 200 winning trades.

Settings
There are many, to many, settings in Firebird.
Most of them just are there for testing and development.
Some have a big impact some almost have almost no effect.

- MA_length
A moving average is calculated over a number or bars.
10 seems to be a good value. Playing with Percent gives often very similar result.
Play with it if you have lots of time. Else leave it at 10.

- MA_timeframe
Put the number of minutes here of the chart you are using.
10 for M10 charts. 1440 for D1 charts. etc
Just use the number that matches your chart unless you want to do some testing.

- MA_type
Type 0 calculates its bands using the current bars open.
Type 1 uses previous bars high for the upper band and previous bars low for the lower band.
Type 1 trades a little less that Type 0 but it's entries are usually closer to the reversal point.
So:
Type 0: More less certain trades.
Type 1: Little less trades that are more certain. With better potential for trailing stops.

- Percent:
A very important setting that has great impact on performance.
Small = many trades, many large positions, large drawdowns, larger account needed.
Large = less trades, fewer large positions, smaller drawdowns, smaller account needed, better trailing stop potential.

- Trade_on_Friday:
0 means don't trade on friday.

1 means trade on friday.
Friday is often seen as a day that gives unrealistic moves.
I backtested on it and it seems to make no diffrence for Firebird.
So use 1

– Slip

It's not always possible to get the exact price you want.
This setting allows Firebird to accept less perfect prices.
Don't set it to low because it can make you miss trades.
Usually you get what you want so I setting it small is of little use anyway.

– Lots

Enter the number of lots you want to trade each buy/sell.
This is *not* the total number of lots Firebird will trade. Just how many lots it will trade per 30 pips that the price goes against it.
If this setting is at 1 Firebird will trade 3 lots if the price goes 90 pips against us.
If this setting is at 10 Firebird will trade 30 lots if the price goes 90 pips against us.

– TakeProfit

Firebird closes the position if this amount of pips is reached.
If set to high the target will not be met and the trade fails.
For EURUSD 30 seems a very nice value.
A lower value is more certain.
Often a lower value means lower risk and less drawdown.
Often. Not always....
Take a look at the 2nd picture.
It traded 4 lots (4x30=120 pips)
But with a setting of 20 pips it will trade 6 lots (6x20=120 pips)
Same amount of pips but $2000 extra to buy the lots.

– Stoploss

"Always limit your losses." That's a wise advise. But does it work with Firebird?
Take a look at the 2nd picture. Lets see how much this position went against us before it started to profit.
Position 1 was down 120 pips.
Position 2 was down 90 pips.
Position 3 was down 60 pips.
Position 4 was down 30 pips
--------------------------------------- +
Total down 300 pips

If you had set your stoploss at 100 pips the position would have stopped out and you would have lost 100 pips.
If the stoploss was 300+ pips you would have 4x30=120 pips profit.
The stoploss is for the total amount of pips in the EA on a certain chart.
If you run Firebird on 3 charts with a setting of 100 your risk is 300 pips

As a rough indication I can say that: (depends a lot on the pair and settings)
- 50% of the trades take 1 position.
- 40% of the trades take 3 positions.
- 9% of the trades take 6 positions.
- 1% of the trades take 10+ positions.
So i.m.o. you need to be able to hold at least 3-4 lots to seriously trade with Firebird.

Below a list of how many pips drawdown you get:
1 position: 30 pips
2 positions: 90 pips
3 positions: 180 pips
4 positions: 300 pips
5 positions: 450 pips
6 positions: 630 pips
7 positions: 840 pips
8 positions: 1080 pips
9 positions: 1350 pips
10 positions: 1650 pips

And that's excluding the $1000 it takes to buy 1 lot.
So if you want to trade 10 positions you need to set the stoploss at 1650+29=1679 pips.
That's $16790 drawdown plus $10000 for buying the lots. Total $26790 account needed.

Very often even the large drawdowns are corrected within 10 days.
Often not always. Allowing large drawdowns will make most trades profitable. But if that stoploss is exceeded it really hurts.
There is no answer to what stoploss is best.
I hope it's very clear to everyone that the great track record of Firebird comes with a big danger!!!

PipStep:

When the position goes against Firebird it starts buying to average the position to a better value.
The value you enter here is how much the price must move to open a new position.
30 pips looks like a good value.
To low and Firebird will buy like crazy. To high and it is never able to average and starts loosing trades.

Increasment type:

When set at 0 it just uses the above mentioned PipStep.
When set at something else it gradually increase the size of PipStep.

The logic behind this is if Firebird needs to buy many lots the trend is strongly against us and will continue.
So we can buy a bit later. That way we get better averaging and less positions.
Number_of open_postions^Inceasment_type*PipStep = pipstep_we_use_now

Assume we already have 2 open positions, PipStep=30 and Increasement_type=2
2^2 *30=120 --> this pipstep grows much to fast to be useful.
Increasement_type=0.5
2^0.5 *30= 42 pips
Increasement_type=0.2
2^0.2 *30= 34 pips

This needs a lot of testing but i think the best values are between 0.2 and 0.5

MagicNumber
Only change this if you use Firebird more that once on the *same* pair.
Just use a random number that you haven;t used yet.

	A	B	C	D	E	F	G	H	I	J
2		Spread =	3		Lot Margin =	1000		Pip Value =	10		
3		Step	Open Trades	Average Even	Distance From First Entry	Distance From Last Entry	Needed retracement %	PipDraw Down	Margin DrawDown	Total DrawDown
4	1			1.2000	1.2000	0	0		0	1000	1000
5	2		50	1.1950	1.1975	50	25	0.50	500	2000	2500
6	3		45	1.1905	1.1952	95	47	0.49	1450	3000	4450
7	4		40	1.1865	1.1930	135	65	0.48	2800	4000	6800
8	5		35	1.1830	1.1910	170	80	0.47	4500	5000	9500
9	6		30	1.1800	1.1892	200	92	0.46	6500	6000	12500
10	7		25	1.1775	1.1875	225	100	0.44	8750	7000	15750
11	8		20	1.1755	1.1860	245	105	0.43	11200	8000	19200
12	9		15	1.1740	1.1847	260	107	0.41	13800	9000	22800
13	10		10	1.1730	1.1835	270	105	0.39	16500	10000	26500
14	11		5	1.1725	1.1825	275	100	0.36	19250	11000	30250
15											
16		Spread =	3		Lot Margin =	1000		Pip Value =	10		
17		Step	Open Trades	Average Even	Distance From First Entry	Distance From Last Entry	Needed retracement %	PipDraw Down	Margin DrawDown	Total DrawDown
18	1			1.2000	1.2000	0	0		0	1000	1000
19	2		30	1.1970	1.1985	30	15	0.50	300	2000	2300
20	3		30	1.1940	1.1970	60	30	0.50	900	3000	3900
21	4		30	1.1910	1.1955	90	45	0.50	1800	4000	5800
22	5		30	1.1880	1.1940	120	60	0.50	3000	5000	8000
23	6		30	1.1850	1.1925	150	75	0.50	4500	6000	10500
24	7		30	1.1820	1.1910	180	90	0.50	6300	7000	13300
25	8		30	1.1790	1.1895	210	105	0.50	8400	8000	16400
26	9		30	1.1760	1.1880	240	120	0.50	10800	9000	19800
27	10		30	1.1730	1.1865	270	135	0.50	13500	10000	23500
28	11		30	1.1700	1.1850	300	150	0.50	16500	11000	27500
29											
30		Spread =	3		Lot Margin =	1000		Pip Value =	10		
31		Step	Open Trades	Average Even	Distance From First Entry	Distance From Last Entry	Needed retracement %	PipDraw Down	Margin DrawDown	Total DrawDown
32	1			1.2000	1.2000	0	0		0	1000	1000
33	2		5	1.1995	1.1998	5	2	0.50	50	2000	2050
34	3		10	1.1985	1.1993	15	8	0.56	200	3000	3200
35	4		15	1.1970	1.1988	30	17	0.58	500	4000	4500
36	5		20	1.1950	1.1980	50	30	0.60	1000	5000	6000
37	6		25	1.1925	1.1971	75	46	0.61	1750	6000	7750
38	7		30	1.1895	1.1960	105	65	0.62	2800	7000	9800
39	8		35	1.1860	1.1948	140	87	0.62	4200	8000	12200
40	9		40	1.1820	1.1933	180	113	0.63	6000	9000	15000
41	10		45	1.1775	1.1918	225	142	0.63	8250	10000	18250
42	11		50	1.1725	1.1900	275	175	0.64	11000	11000	22000

Picture 7

This screen shot shows the difference between the 3 major PipStep methods.

The main conclusions are:
Decreasing PipStep

1. The distance to retrace to break even gets better every lot you add. Column G.

2. Suffers the most draw down. Column H

3. The better averaging (retracement) gives faster exits. So you buy more certainty with more lots/risk.

Fixed PipStep

1. The distance to retrace to break even stays the same every lot you add. Column G.

2. Suffers the least draw down. Look at the number of pips when you compare not lot. 9 lots in this method covers as much pips as 11 in the others.

Increasing PipStep

1. The distance to retrace to break even gets worse every lot you add. Column G.

2. Suffers average draw down. Column H

3. The worst averaging (retracement) makes quick exits unlikely which leads to bigger positions.

And the winner is....
You decide!
But i.m.o. the third method is the looser.

Ideal settings

Mmmm, ideal.... Well I'm busy backtesting/optimizing to find the best settings for each pair/timeframe.
It's far from complete. Ideal settings means something different for everyone.
Small drawdowns with modest profit is what I searched for.

Using MA_Method=0

Percentage/DD in $k/number of days a trade is open/PipStep/TakeProfit
10-25 means everything between 10 and 25

Pair	M15	M30	H1	H4	D1
USDCHF					
GBPUSD					
EURUSD	0.2, 3, 1, 20-25, 30	0.3, 4, 2, 20, 20	0.7, 4, 2, 35, 20	1.0, 5, 2, 30, 30	2.2, 5, 2 40, 30
USDJPY					
AUDUSD					
USDCAD	0.1, 2, 20, 20	-----	-----	1.3. 2, 5, 30, 30	1.8, 2, 30, 20
EURGBP					

Using MA_Method=1

Pair	M15	M30	H1	H4	D1
USDCHF	-----	-----			
GBPUSD					
EURUSD					
USDJPY					
AUDUSD					
USDCAD					

Some remarks/observations/thoughts

1. GBPUSD not suited for this system due to not reversing exhaustions. Maybe use other types of MA.

2. EURGBP often sharp reversals-> good for trailing stops?

3. EURJPY deep pockets needed.

4. Use fibo to calculate target/retracement starting from the max DD point.

ToDo list

1. Finding the bug that stops averaging from working. (fixed?)

2. Only takes short trades?????

3. Stoploss (in progress)

4. Trailing stop. Parabolic SAR and time limited? (in progress)

5. EA interaction to stop trading multiple pairs at once.

6. Lots of testing. (in progress)

7. At the opening of the 1st position open lay in the orders for the next 10 also. Safer in case of a internet/power outage.

8. ProfitTarget based on stats (in progress)

9. Fix hold long and short positions at same time.

10. Max. Lots. Stops adding lots. Risk is that averaging principle is abandoned.

Credits:

1. Vooch for the backtesting fix.

2. Hugues Du Bois for the multi currency code.

3. Jackie Griffin for major debugging and code additions.

4. Many people on the Yahoo MT forum for testing and feedback

---[TraderSeven]---