What a difference a year can make. When we started out, Jerry and I were interested in making automated robots that could be utilized to automate our trades so we could sleep at night. There are hundreds of ways to trade the Forex market but very few tools to help us do it. This was the reasoning behind the the Gap-Trader and the GT-Shadow. These trading tools had no set trading system but could be used by experienced traders to automate their favorite systems.

There was and still is a large number of new traders coming into the market and losing their shirts on a regular basis because they were buying various robots but did not understand the underlying system from which they were developed. There is some insane belief that you are not supposed to know what the trading criteria is that the robots trade by. I will echo the words of supper trader Warren Buffet, only buy those stocks (programs for us) that you truly understand.

Some people dispute whether Mathematical trading is in fact a new trading system because it has at it core a lot of fundamentals. I won't argue the point here but if it is to be classified as fundamental trading then it is several generations beyond the old basic systems. At its core though we have chosen currency pairs that are very similar to each other. The Euro-Swiss (EURCHF) is a good example of this. Switzerland is located right in the center of Europe. What happens to one, will effect the other as well. Let me belabor the point a little more. If the value of the Euro drops, Swiss clock makers will have a hard time getting their price for their clocks from their neighboring countries. This makes the clock makers reduce the cost of their clocks and the people are poorer. What to do- what to do. The Swiss money managers, thinking quickly determine that the value of the Frank is too high so they lower its value, now the clock makers are making clocks again.

The economy is like a rubber band stretched between two poles. There is some play as we pluck the rubber band but it always tends back to the center. We can look at the historical extremes of each currency pair to determine what their trading range should be. We are not saying that the price can not go beyond those historical limits but that the further away the price is from center, the more pressure there is on the pair to return back to its normal trading range.   There are no guarantees in the world however. If you are looking for a risk free investment program, you are about to be sadly disappointed. Major governments like the Soviet Union has defaulted on its loans as has cities in this country. These loans are the much touted bonds that everyone tells you is so safe. If you are investing, you are taking risk. The difference is that we can understand what those risks are. We know that someone can nuke New Zealand and cause a major movement in that market. But it would take a world class situation to bring something on this order about.

Does that happen? Yes. In the United States, a banking melt down caused the EURUSD to go 48% beyond its historical limits. But this didn't happen in the blind. We all saw it coming. If this was to take place in the AUDNZD, what would we do. We simply open our settings box for the AUDNZD and turn the “do trades” switch, off.   As I write this, the EURCHF has drawn down to within 9 ranges of the lowest that it has been since there was a spot market (2001). It has reached a point where I may be interested in capitalizing on the draw-down by changing the magic number. (More on this later). The danger is mostly for those traders that have an aggressive balance-factor, 4000 or less trading both pairs.

For those that have higher balance-factors, the risk is much decreased. When you hear people worrying about a 60% draw-down, they got their belief that they are at risk, from swing trading or technical trading. In my opinion, as well as may who use technical analysis, tech trading is just glorified gambling.   If a program has an 80% win ratio, (extremely high in the industry) is there any rule that says you can not have a series of losses? Answer, No. It may be somewhat unlikely but if you have a string of trades at a 20% probability of a loss, the likelihood of a string of losses is constantly increasing as the summation of the events cause it to become more and more likely. Take a box of a hundred ping pong balls and paint 20 of them blue. Without looking you pick one. It is most likely white. But eventually you will get a blue, the next could be blue as well. If you do this over and over, the probability increases that you will get several blues in a row. That is the problem with technical trading. There is no basis for not having a string of losses so a drawdown of 50% is alarming for them.

We do things differently. We take the whole currency movement as a whole singular event. We don't lose trades but we do hold them open until the price returns to center. It will always eventually return to center at some point. So far it looks like a periodical rate of 4 or 5 months. Sometimes longer, sometimes shorter. But unless there is a major event happening on the world stage, we tend to not be concerned. A draw down of 70% is the same thing as one of 10%. It doesn't mean anything unless it goes over our balance. So what should we do?

If one or the other is moving toward the extremes, and you are concerned, shut off that instance. If you shut off the EURCHF at 25 ranges from center, then you save 6 trades from opening, about 20% of the total impact. Once the price is heading the other way, turn it back on and resume trading that pair. But there is something more that you can do. We can show what the draw-down for any price would be, not with some probability but with mathematical certainty. We can definitively say that should the event occur that both currency pairs reach their historical limits and you have a balance-factor of 4000 or more, you can not have a margin call. Everything beyond that is fear of something new and unexpected. So for this, we should buy insurance.

This simply means that we put more money in our account that we will not be trading with. If we cover twice the historical limits then we are pretty safe but of course not 100%. However, if that situation should occur, that is margin at twice the historical limits, don't worry too much about your account, your money would be worthless anyway and you should be looking for a nice homely cave to dwell in.

Alright let's run some number, these come from FXDD but other brokers won't be to far off.

On 1-5-09 the cost per pip on the AUDNZD was .5877, we will be a little more conservative and use .06 for our calculations as the price can vary. For the EURCHF the cost per pip is .0905, we will use .095 for the same reason. These are for .01 lots which is our base. For 1 lot, multiply everything by 100.

Cost per range for the AUDNZD = 40 pips X $.06 = $2.40 For a 100:1 leverage, the margin per .01 lots is 10.78 For 33 possible open ranges the maximum margin cost is 33 X $10.78 = $355.74
(In our case the higher the leverage, the less is taken out, and the more you have left for insurance.)

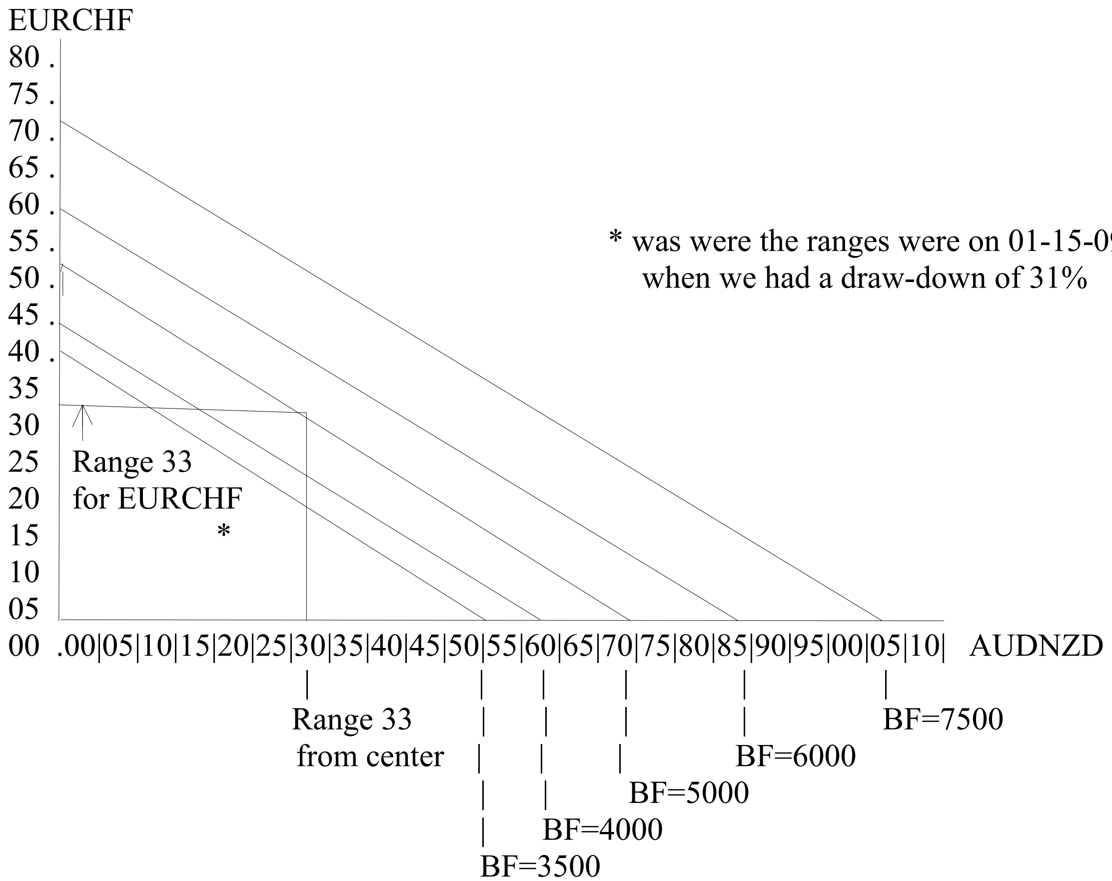
If you filled the grid to the historical max, your drawdown would be 561 X $2.40 + $355.74 = $1702.40 We always have people begin with $2000. (for how we came up with 561 equivalent ranges, read proof document) The cost for each range beyond the first 33 ranges is 33 X $2.40 or $79.20

The cost per range for the EURCHF = 40 X .095 = $3.80 (Margins are the same)
Historical max drawdown = 561 X $3.80 + $355.74 = $2487.54 (recommended min for this pair is $2500) The cost for each range beyond the first 33 ranges is 33 X $3.80 or $125.4

With a balance of $3500 @ .01 lots per range. The highest price that the AUDNZD could get to without a margin call is when the EURCHF is at center or zero. ($3500 – $1702.4) / $79.20 or 22 additional ranges for a total of 55 ranges.
The highest price that the EURCHF could get to without a margin call is when the AUDNZD is at center or zero. ($3500 – $2487.54) / $125.40 for 8 additional ranges or 41 total ranges.

This is a chart of the different Balance-Factors and the most number of ranges that it could cover when the other currency pair is centered.

min and BF	AUDNZD or	EURCHF
3500	55	41
4000	62	45
5000	74	53
6000	87	61
7500	106	73



Inside the box is where the prices have been historically. The * was the high tide when newbies began to panic causing me to write this paper. When we have the least to lose, we need growth the most so the more improbable areas in the box above the 3500 diagonal line (which is the first lowest diagonal line) is unprotected. There will probably be a little give as we make money with our trades, but this is the most risky time. As we get more in our balance, we want to get safer so we increase the BF. At the other extreme, when the balance is over $100,000 the BF is 7500 Top Line.
The scale is off because in reality you would not have had a margin call even at 5000.
$5000 - $1702.40 - $2487.54 = $810. This is enough to cover 10 additional ranges of the AUDNZD, or 6 more ranges of the EURCHF or 4 more of both. Also if the balance is low enough to be less than when the BF goes to 5000, FXDD will allow 200:1 margin leverage (2 extra ranges on the AUDNZD 1.4 extra EURCHF or 90% of both). And it would be next to impossible for the price to go from center to max on both pairs without closing any trades along the way so the diagonal balance lines would actually be elevated somewhat.

The reason this works as it does, is the fact that the currency prices will tend toward the center of the historical highs and lows. When the prices get to far away from center, traders get reluctant to buy when the price is unusually high already or sell when the price is extremely low already. The only way the price can increase is if you have buyers. No buyers and the price falls. We only buy when the price is below center. This is when the price is most likely to raise. We only sell when the price is above center when the price is most likely to fall. As the traders that walk around saying “the trend is your friend” continue buying when the price is above center and increasing, we are offering to take a little opposite trade. If all you have is buyers, the price is driven up. This is fine when the price is below center but when it is above center, Mathematical Grid traders offer more sells, helping to keep the price from going extreme. The more Mathematical traders there are, the more the price will be driven to center. Draw-down at center is zero. Mathematical trading was designed for safety. If you are still worried about draw-down, just increase your balance-factor.

Using draw-dawn to guess how well your trades are going is a very imprecise gauge at best, where mathematical trading allows you the precision of knowing how things are going with mathematical certainty. Emotions are the traders worst enemy. Math remove doubt and emotional decisions. Knowledge is the grid traders friend.