
ASPEN.mq4

Expert Advisor

USER GUIDE



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INTRODUCTION

This user guide is meant to help the trader understand the functioning of the expert advisor ASPEN.mq4, which was developed specifically for its execution in Meta Trader 4. It will require the user to be knowledgeable on the use of this trading platform, as well as a moderate level of understanding about financial markets, leverage, risk management and derivatives trading.

In this document you will only find directions and explanations about the functioning of this executable program. There won't be any financial or trading advice, or any recommendation on how to use it. This EA (expert advisor) is fully customizable and its uses and input values should change according to the user's particular needs.

This .mq4 file is able for backtesting through Meta Trader 4, and will work in any "demo" account, so the user can feel free to try it as many ways as she/he feels necessary to feel comfortable with its usage.

GLOSSARY

In this glossary there will be definitions of words or acronyms used specifically for this program. It will not include the ones related to the use of MT4 or about general knowledge of trading.

Subset: Referred as a small group of trades that share common characteristics and inputs. There are 3 different subsets, IT, REP and LCT.

IT: Initial Trades. This are the first trades that will trigger or not the start of the other subsets.

REP: Repetition Trades. They mean to replicate Initial Trades that are already closed, by TP or SL.

LCT: Loss Compensation Trades. They open when IT and REP have reached a certain loss, as a way of hedging.

Main Set: Includes one subset of each, which will have close relation between them. This are numbered and each main set works separately from others.

CTIL: Close Trades In Loss. This is a function that under certain circumstances, will close all trades in a main set.

SPM: Speedometer Indicator. Measures the price movement during a specific time frame of seconds or milliseconds.

PROGRAM INPUTS

Main settings:

This section of the inputs determines the values for the general functioning of the program, such as Slippage, SL, TP, TS, etc. As well as the values desired for indicators like Speedometer (SPM) or Volume indicator.

----- Main Settings -----		
1	Magic number	6813
2	Slippage	20
3	TimeFrame	current
4	Stop Loss	400
5	Take Profit	100
6	Use Trailing Stop	false
7	Trailing Stop Distance	50
8	Trailing Stop Step	10
9	Trailing Stop Start	50
10	SPM Min Points	100
11	SPM Max Seconds	60
12	SPM Milliseconds (to use set seconds to 0)	0
13	Min Volume to enter IT	10
14	TF applied to Volume	current
15	Min % Margin Level	100



1. **Magic number:** Determines the magic number for the EA. This has to be unique for this specific program and must not match any other Magic Number of another EA in use.

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2. **Slippage:** This is the desired value for opening all trades, and also for the CTIL function.
 3. **Time Frame:** For the calculation of internal functions, such as counting bars to enable new entries.
 4. **Stop Loss:** Value desired in points.
 5. **Take Profit:** Value desired in points.
 6. **Trailing Stop:** Enables / Disables the use of trailing stop only in IT and REP trades.
 7. **Trailing Stop Distance:** In points, from current price to set the new TS.
 8. **Trailing Stop Step:** Points that the current price has to move from the previous TS to set a new one.
 9. **Trailing Stop Start:** Points that the current price has to move from the order open price, to enable TS
 10. **SPM min points:** That the price has to move, in 'x' amount of seconds or milliseconds (see below) to open the first IT.
 11. **SPM max seconds:** Seconds window where the price has to move the above amount of points to start a trade.
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12. **SPM max milliseconds:** Milliseconds window where the price has to move the above amount of points to start a trade. This works only on live trading, not backtesting.
13. **Min Volume to enter IT:** Minimum value that the Volume indicator has to have to allow first IT.
14. **TF applied to Volume:** Time Frame desired to measure Volume indicator.
15. **Min % Margin Level:** If Margin Level drops below this value, it will stop entering trades.

IT & REP Settings:

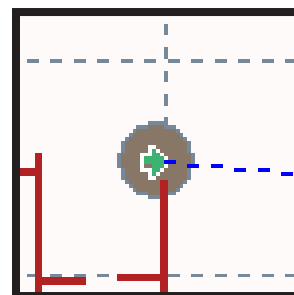
This values will determine the functioning of Initial Trades and Repetition Trades subsets.

----- IT & REP Settings -----	
16 Arrow color IT buy	 Green
17 Arrow color IT sell	 Red
18 Max Spread allowed (0 to switch off)	0
19 Direction IT	CTD
20 Balance/FM risked for IT	freeMargin
21 % risked for IT	0.01
22 Lots Multiplication factor IT	2.0
23 N° of candles to restart func	60
24 Max Trades IT for selected direction	5

25	x Points for next trade	20
26	Arrow color REP buy	MediumSeaGreen
27	Arrow color REP sell	Salmon
28	Max trades REP (0 switchs off)	7

16. **Arrow color IT buy.** This is a color coding that makes easier to identify this specific kind of trades in the chart.

17. **Arrow color IT sell:** Same as above, but for sell trades.



18. **Max Spread allowed:** If spread goes over this value, no IT will open

19. **Direction IT:** Choose the desired direction for the IT subset:

- CTD (Counter trend direction): Considers SPM value as the “trend”, i.e. if price goes up, IT trades will be Sell, if price goes down, they will be Buy.
- PTD (Pro trend direction): Also considers SPM value as trend, but does the opposite than CTD, if price goes up, the trades will be Buy and if price goes down, trades will be Sell.
- BUY: Doesn’t consider any trend, it will just enter Buy trades.
- SELL: Same as above, it will just enter Sell trades.

20. **Balance/FM risked for IT:** Choose between the Account Balance or Available Free Margin to get the desired percentage (input N° 21).

21. **% risked for IT:** Percentage of Balance/Free Margin used for lots calculation.

The formula to get the lots for the first IT is the following:

$$\frac{\text{"x" \% of Balance/FM} * \text{Account Leverage}}{100000}$$

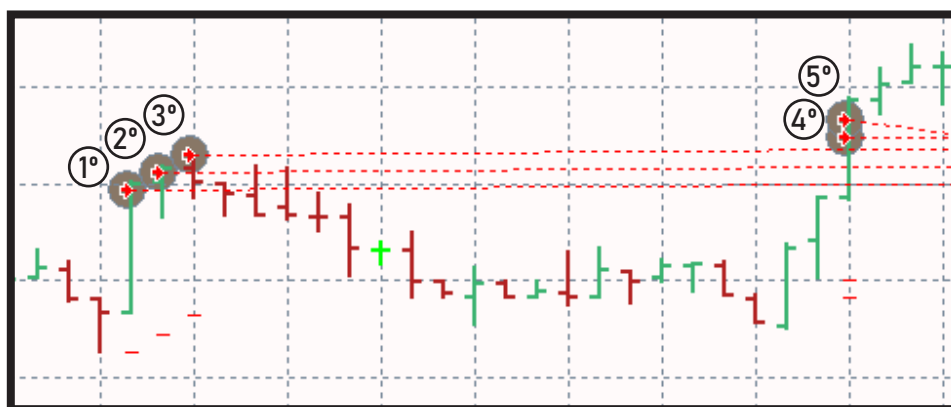
22. **Lots multiplication factor IT:** This input sets the factor for which the previous trade lots in the IT subset will be multiplied.

I.e.: Imagine we set this input to 2, if the first IT lots is 0.1, the second IT lots will be $0.1 * 2 = 0.2$, and the third IT lots will be $0.2 * 2 = 0.4$...

23. **N° of candles to restart func.:** After the first IT opens, a counter starts counting the bars elapsed since this event. If the bars reach designated value, and there are no more IT or REP trades open, it will flag it as a closed set, and a set of new trades is enabled to open.

Remember that in this EA, when an open main set of trades starts LCT, also enables the possibility of entry for a new set.

24. **Max trades IT for selected direction:** Maximum number of trades that will open for the IT subset.
25. **X points for next trade:** Value in points the price has to move from previous trade for opening the next IT trade. The direction expected for the price to move depends on the direction established on input N° 19.



On the image above we can see an example of setting CTD as IT direction, the price is expected to go up, to keep opening Sell positions every “x” points.

26. **Arrow color for REP buy trades** (same as input N°16).
27. **Arrow color for REP sell trades** (same as input N°16).
28. **Max trades REP:** Maximum number of repetition trades that can hold the REP subset before LCT opens.

Lots for REP trades are exactly the same as the IT they are replicating.

LCT Settings:

This are the inputs related to the opening of loss compensation trades.

----- LCT Settings -----	
29 Arrow color LCT buy	Blue
30 Arrow color LCT sell	DeepPink
31 LCT direction	CTD
32 LCT x Points for next trade	10
33 Balance/FM/Set% in loss to start LCT	FreeMargin
34 % Balance/FM in loss to LCT (0 switchs off)	0.5
35 CTIL at Breakeven	false
36 % won to CTIL (if above false)	10.0
37 Max trades LCT	5
38 Lots Multiplication factor LCT	2.0

29. Arrow color LCT buy: Same as input 16, serves to differentiate different types of trades in the chart.

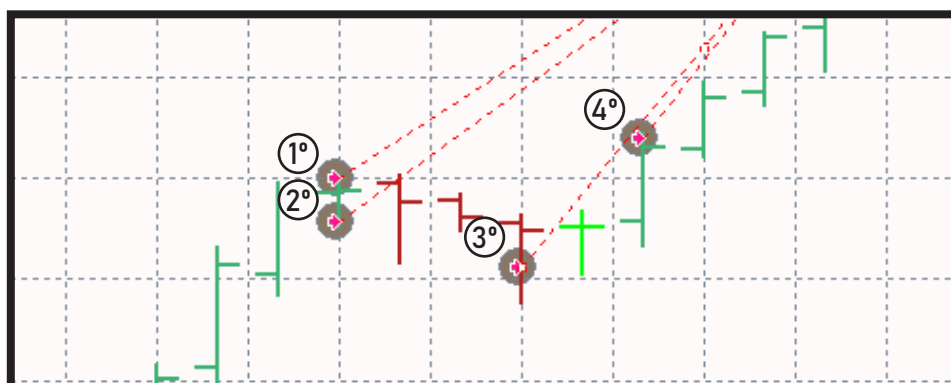
30. Arrow color LCT sell: Same as inputs 16 and above.

31. LCT direction: This input lets you choose between:

- CTD (Counter trend direction): Considers the IT direction as the “trend”, i.e. if the Initial Trades are Buy, the LCT will be Sell and vice versa...

- **PTD (Pro trend direction):** Also considers the IT direction as trend, but in this case, it will copy the direction that the IT has.
- **BUY:** Doesn't consider any trend, it will just enter Buy trades as LCT.
- **SELL:** Same as above, it will just enter Sell trades.

32. LCT points for next trade: Once the LCT function has activated, it will start entering trades after "x" points moved from the highest or lowest LCT in the chart, that means the trade opening can be bidirectional.



Here we can see the difference with the input 25, where the entering of trades was unidirectional.

33. Balance/FM/Set% in loss to start LCT: This input allows you to choose between 3 different loss calculations that will result in the opening of Loss Compensation Trades:

- **Balance:** If you choose this option, the program will take a

certain % (given in the input number 34) from the current account balance, and will look for the accumulated profit in loss of the IT and REP together to reach that %, so LCT can activate.

 LCT starts on set 2. Profit Accumulated in IT & REP is: -50.27
 Current account balance: 10043.06, and the 0.5% to activate it is: -50.22

In the .log file you can find all the calculations and data that the EA is using to perform every action.

- **Free Margin:** It performs the same calculation as the option above, with the exception that it takes the % out of the account free margin instead of the balance.

 LCT starts on set 2. Profit Accumulated in IT & REP is: -52.29
 Current account free margin: 10043.06, and the 0.5% to activate it is: -52.22

- **Trades Percentage:** This calculation is a little different from the previous ones. What it does is averages all the open prices of the IT and REP trades, and it compares it with the current price. If the current price moved into the loss direction a certain percentage from the open prices average, it will activate LCT.

 LCTCF starts on set 1. IT & REPO open prices accumulated are: 5.67355, and the actual price *5 is: 5.66785
 So the % of the price that moved to loss is: 0.1004

In the same way as the other two options you can see a detailed explanation of the calculation performed by the EA in the log file.

34. **% Balance/FM in loss to LCT:** Works together with input number 33, it's the percentage desired to apply to the mentioned calculations.

35. **CTIL at Breakeven:** This input is related to the closing of trades inside a main set. If this is true, when the accumulated profit of IT, REP and LCT reaches to 0, all trades inside this subsets will close.

36. **% won to CTIL:** If the above is false, the EA will try to close trades in a main set (if LCT has activated) not in breakeven, but in profit. The conditions for this set to close have to be the following:

$$\left| \begin{array}{c} \text{IT profit} \\ + \\ \text{REP profit} \\ + \\ \text{LCT profit} \end{array} \right| \geq \left| \begin{array}{c} \text{"x"% of Max. Loss} \\ \text{Recorded In Main Set} \end{array} \right|$$

According to this, the total profit of the main set (IT + REP + LCT) has to be equal or higher than the absolute value of the percentage (given in this input) of the maximum loss recorded in that set, that means, the lowest value that the sum of profits of all 3 subsets has reached during the existence of this set.

37. **Max trades LCT:** Similar to input N°24, this value sets a limit for the quantity of trades that the LCT subset can open.

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38. **Lots multiplication factor LCT:** Works similar to input N° 22, but giving it's own multiplication factor to the LCT subset. It takes as first reference the last IT on that same main set to multiply for this new factor, and then for the nextr trade it applies the multiplication on the last opened trade of the LCT subset.