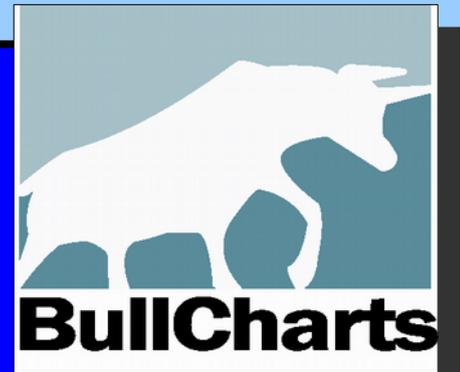
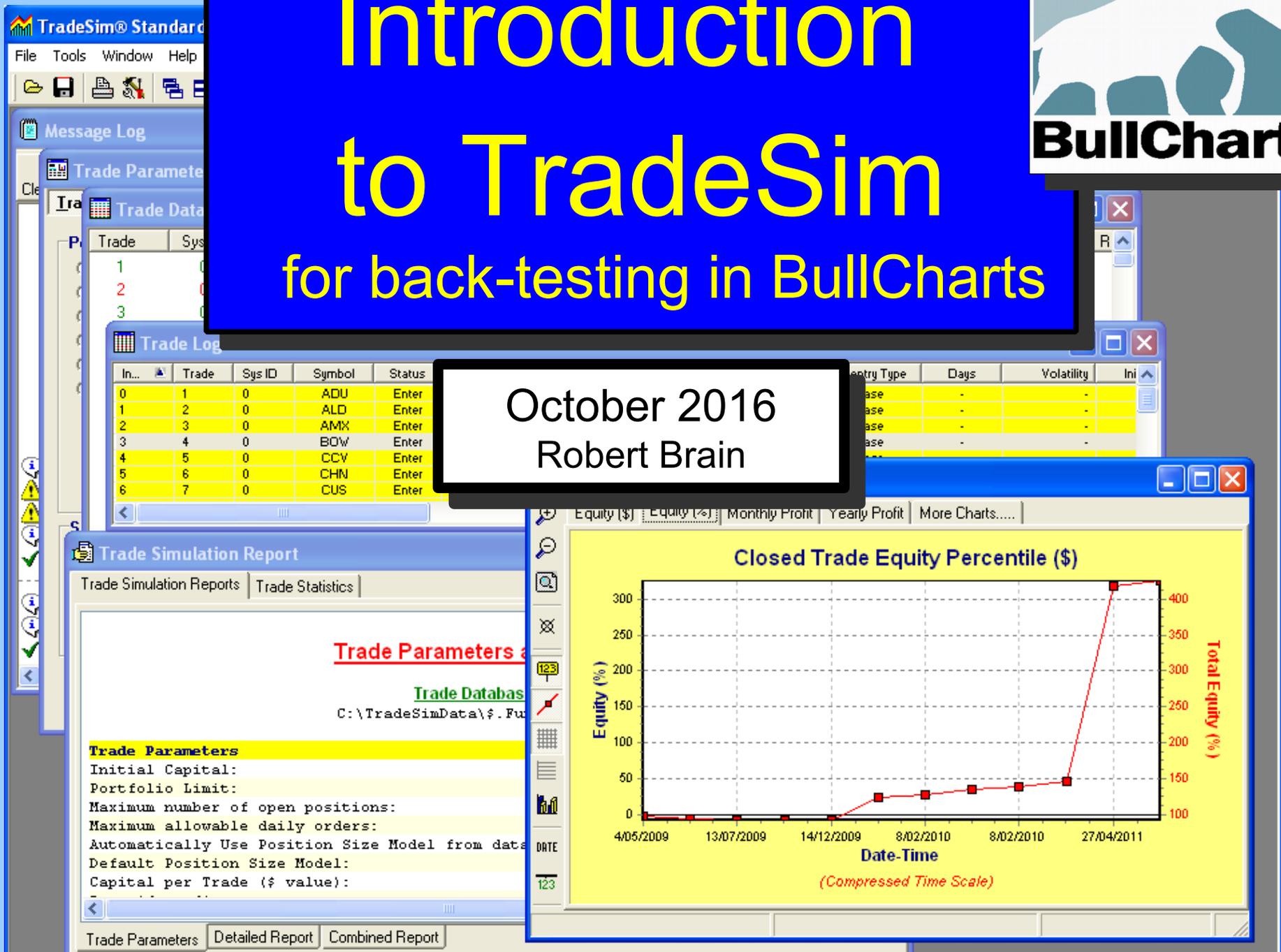


Introduction to TradeSim for back-testing in BullCharts



October 2016
Robert Brain



Disclaimer

The information herein is for general education only.

Any information presented or discussed is only opinion, and is NOT ADVICE, and it should NOT be acted upon.

The particular financial needs of any individual have not been taken into consideration. One should always seek professional advice before entering into financial or other arrangements.

AGENDA

- 1) TradeSim — what is it?
- 2) How does it work?
- 3) Overview of the process
- 4) “TradeSim scan” —
the special type of BullCharts scan
- 5) How do we do it?
 - Create or modify a TradeSim scan
 - Set Trade Parameters
 - Run a Simulation
 - View the results

TradeSim – What is it?

- Software package from CompuVision
- A “plug-in” for BullCharts (& MetaStock)
- For back-testing:-
 - To test your own trading strategy
 - On a particular group of stocks
 - Within a specific time period.



TradeSim — more help

Current version 6.7.7 (build 769)*

A number of materials are available:

- “Users Guide” (299 pages)
- Quick Start Tutorial guide (21 pages)
- Several focused docs on various topics

<http://www.compuvision.com.au/Articles.htm>

Note: Some documentation refers mostly to MetaStock; but is still relevant to BullCharts.

* as at October 2016

How does it work?

- In BullCharts, create a BullCharts scan of the type: “TradeSim scan”.

Note the symbol in Scan Manager:



- Specify:
 - Your trading strategy criteria (entry, exit, etc) (this should already be defined on paper)
 - Testing time period (“from” and “to” dates)
 - A watchlist of stocks to scan through (your trading universe as defined in your strategy)

Process overview

BullCharts

1. Create
"TradeSim scan"
in BullCharts

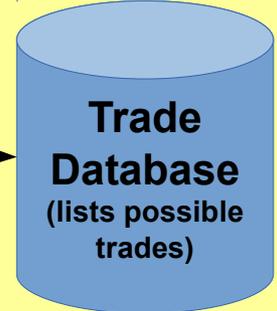
2. Run the
TradeSim scan

Watch BullCharts
and wait for scan
to complete

9. Modify
the scan

TradeSim

TradeSim program
will start (if not running)



Trade Database Report Log
will list messages

3. Review Database Report Log

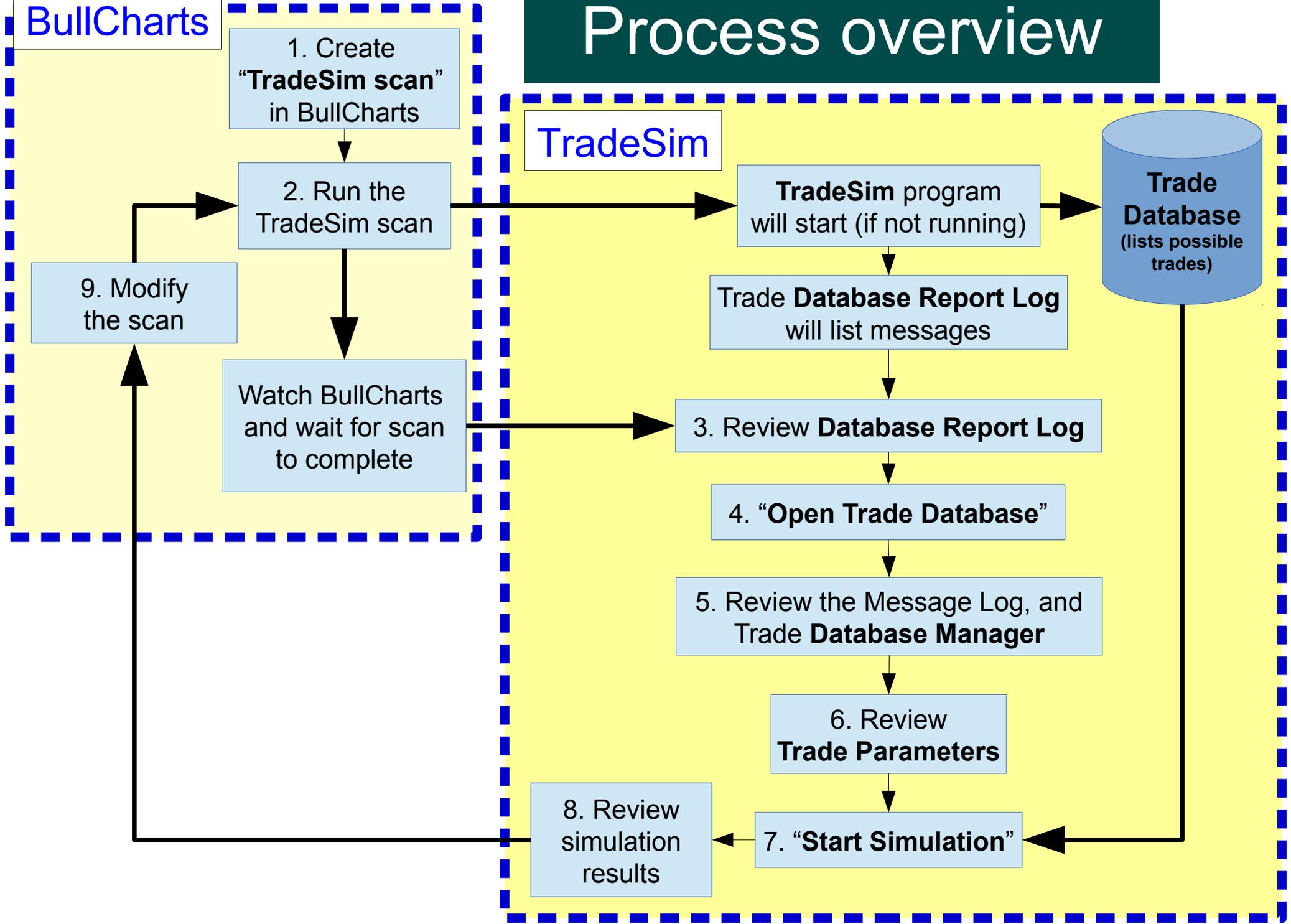
4. "Open Trade Database"

5. Review the Message Log, and
Trade Database Manager

6. Review
Trade Parameters

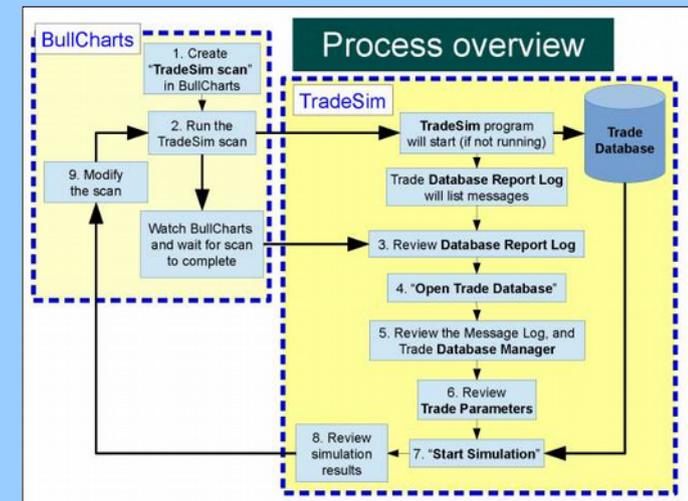
7. "Start Simulation"

8. Review
simulation
results



These detailed steps follow

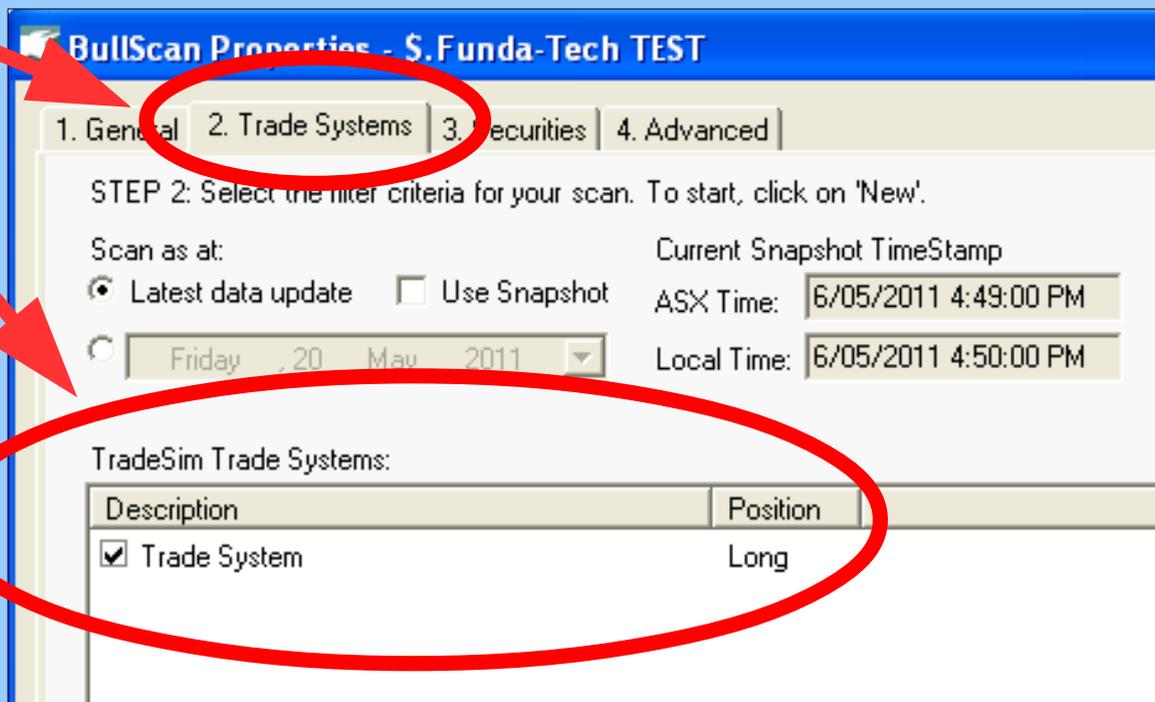
1. Create TradeSim scan
2. Run the scan
and wait for scan to complete
3. Review Database Report Log
4. Open the Trade Database
5. Review Message Log
6. Review Trade Parameters
7. Start Simulation
8. Review the results and revise if desired.



1. Create TradeSim Scan

Create new BullCharts scan of the type: "TradeSim scan".

The familiar BullScan dialogue box, except for:



2. Run the TradeSim scan

- In BullCharts run the “TradeSim” scan
- The result of the scan is a **TradeSim “Trade Database” file** containing a list of all possible trades.
We have NOT yet run a “simulation”



CAUTION:

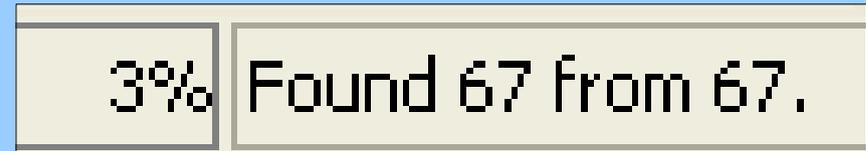
The scan will create a Trade Database file of the same name as the scan (.TRB), and it will automatically over-write any existing Trade Database file.

If you want to keep a past Trade Database, make sure to rename it.

Normally located in folder: C:\TradeSimData\...

Wait for scan to complete

- Watch BullCharts and wait for the scan to complete
(Status Bar at bottom of window)
(otherwise it might appear that nothing is happening)



- Watch TradeSim Status Bar



- The TradeSim window will open, also the “Trade Database Report” log.

3. The Database Report Log

NOTE:
This is a summary list of all possible trades. At this stage we have not yet run a “simulation”.

Review any errors and warnings

TradeSim(DLL) Plugin - Trade Database Report Log fo

File Help

Report Log

#	Symbol	Position	Description
Report Created on: We TradeSim.DLL Version Trade Database File: [DLL Path: [C:\Program Fil Host Application Path: [C:			
Opening trade databas Trade Database Versio WARNING! - Price Filte WARNING! - Prices will automatically be modified if they fall outside the daily range			
1	AAC	Long	Total Number of Long Trades written to the trade database for [AAC] is 0, (which includes 0 open trades) (0 trades w Security Name: [AUSTRALIAN AGRICULTURAL COMPANY LIMITED.] First date scanned from security data [09-Feb-2009] - Last date scanned from security data [16-May-2011] Available Records/Total Records: (118/499)
1	AAC	Long	WARNING! - No trades written to the trade database for [AAC]
2	AAD	Long	Total Number of Long Trades written to th (0 trades w Security Name: [ARDENT LEISURE GROUP STAR First date scanned from security data [09-Feb-2 Available Records/Total Records: (118/412)
3	AAX	Long	Total Number of Long Trades written to the trade database for [AAX] is 1, (which includes 0 open trades) (0 trades w Security Name: [AUSENCO LIMITED] First date scanned from security data [09-Feb-2009] - Last date scanned from security data [16-May-2011]

Jump to next error Help on Selected Item Open Trade Database Clear Log Auto Scroll Window Contents Auto Popup Window

READY [Total Number of Errors: 20] [Total Number of Warnings: 59] [Total Number of Queries: 550] 569: Position [Long] Symbol [ZYL]

3. Review Database Report Log

Review the long list of log messages noting possible trade details

TradeSim(DLL) Plugin - Trade Database Report Log for [C:\TradeSimData...]

File Help

Report Log

#	Symbol	Position	Description
			First date scanned from security data [27-Nov-2014] - Last date scanned from security data [27-Nov-2014] Available Records/Total Records: (477/499)
199	WSA	Long	Total Number of Long Trades written to the trade database Security Name: [WESTERN AREAS LIMITED] First date scanned from security data [27-Nov-2014] - Last date scanned from security data [27-Nov-2014] Available Records/Total Records: (477/499)

Jump to next error Help on selected item Open Trade Database Clear Log

READY [Total Number of Errors: 0] [Total Number of Warnings: 2] [Total Number of Queries: 200]

4. Open Trade Database

Open Trade Database

TradeSim(DLL) Plugin - Trade Database Report Log for [C:\TradeSimData...]

File Help

Report Log

#	Symbol	Position	Description
			First date scanned from security data [27-Nov-2014] - Last date scanned from security data [27-Nov-2014] - Available Records/Total Records: (477/499)
199	WSA	Long	Total Number of Long Trades written to the trade database Security Name: [WESTERN AREAS LIMITED] First date scanned from security data [27-Nov-2014] - Last date scanned from security data [27-Nov-2014] - Available Records/Total Records: (477/499)

Jump to next error Help on Selected Item **Open Trade Database** Clear Log

READY [Total Number of Errors: 0] [Total Number of Warnings: 2] [Total Number of Queries: 200]

The TradeSim windows

TradeSim opens, with several windows:

- Trade Database Manager
- Message Log
- Trade Parameters

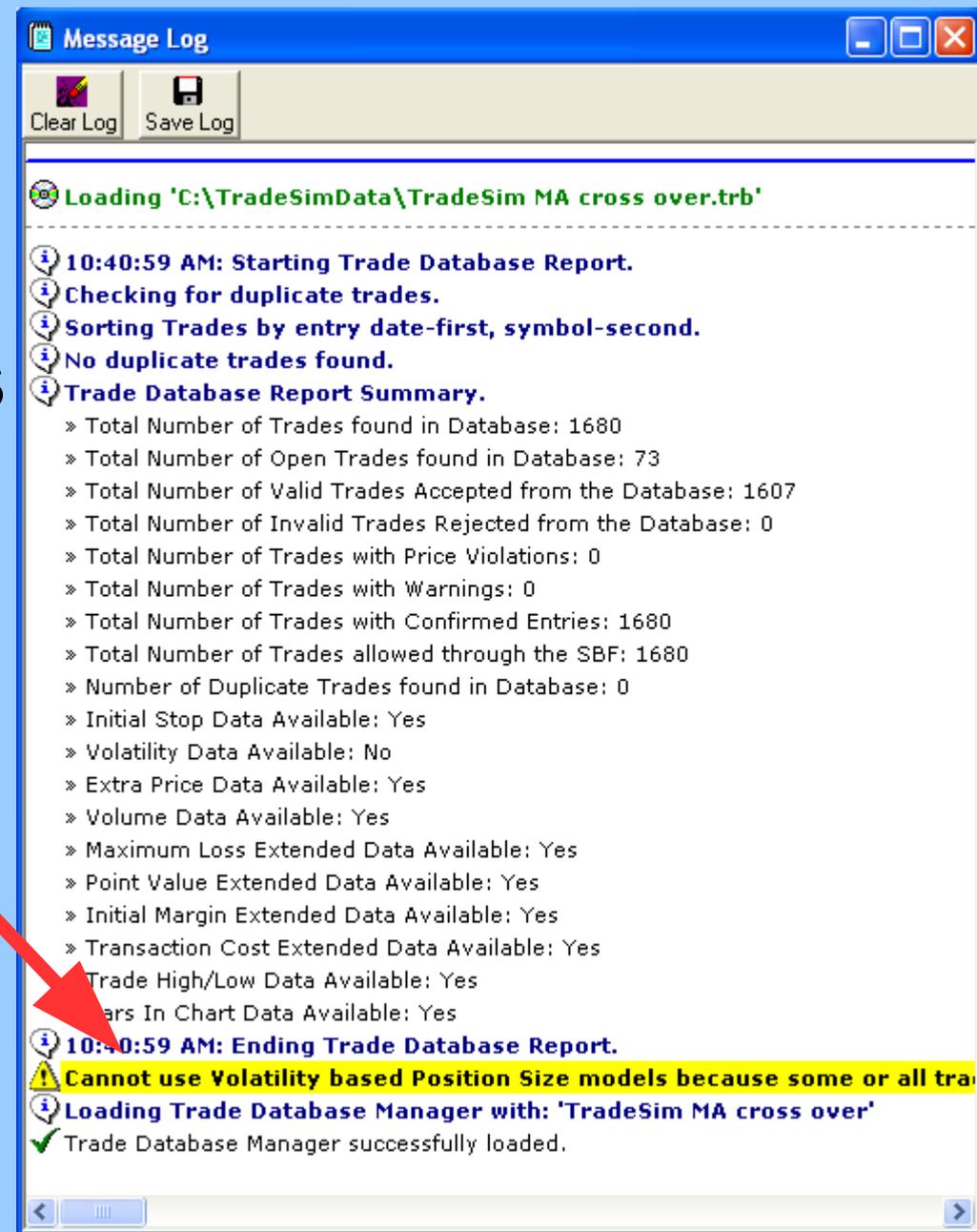
The screenshot displays the TradeSim software interface with three windows highlighted by red arrows:

- Message Log:** Shows a log of events including "Starting Trade Database", "Checking for duplicate trades", "Sorting Trades by entry date-first, symbol", and "Trade Database Report Summary".
- Database Manager:** A table listing trades with columns for Trade, Sys ID, Pos, Symbol, and Period.
- Trade Parameters:** A configuration panel with sections for Position Size Model, Simulation Type, and Simulation Options.

Trade	Sys ID	Pos	Symbol	Period
1	0	Long	MQG	Dail
2	0	Long	SUN	Dail
3	0	Long	WBC	Dail
4	0	Long	QBE	Dail
5	0	Long	QBE	Dail
6	0	Long	QBE	Dail
7	0	Long	QBE	Dail
8	0	Long	CSL	Dail
9	0	Long	AMP	Dail
10	0	Long	CBA	Dail
11	0	Long	CBA	Dail
12	0	Long	CBA	Dail
13	0	Long	SUN	Dail
14	0	Long	AMP	Dail
15	0	Long	ANZ	Dail
16	0	Long	TLS	Dail
17	0	Long	WBC	Dail
18	0	Long	WPL	Dail
19	0	Long	MQG	Dail
20	0	Long	NAB	Dail
21	0	Long	SCG	Dail
22	0	Long	TCL	Dail
23	0	Long	WES	Dail
24	0	Long	WOW	Dail

5. Review Message Log

Review the Message Log details, and note any highlighted messages



5. Trade Database Manager

Lists the entries in the Trade Database

The screenshot shows the 'Trade Database Manager' window with a table of trade entries. The table has columns for Trade, Sys ID, Pos, Symbol, Periodicity, CE, SBFTE, Entry Date-Time, Exit Date-Time, and P-Gr. The first 14 rows are visible, with the first 13 rows having checkboxes in the left margin. A red arrow points to the 'Periodicity' column header with the text 'Can re-sort — click on column header'. Another red arrow points to the checkbox for trade 6 with the text 'Un-tick to exclude from the simulation'. A third red arrow points to the 'Start Entry Date' dropdown menu with the text 'Change date range to display'. The status bar at the bottom indicates '180 trades selected from a total of 180 trades'.

Trade	Sys ID	Pos	Symbol	Periodicity	CE	SBFTE	Entry Date-Time	Exit Date-Time	P-Gr
<input checked="" type="checkbox"/> 1	0	Long	MQG	Daily	Yes	Yes	12/10/2015	9/11/2015	1
<input checked="" type="checkbox"/> 2	0	Long	SUN	Daily	Yes	Yes	12/10/2015	9/11/2015	1
<input checked="" type="checkbox"/> 3	0	Long	WBC	Daily	Yes	Yes	12/10/2015	11/11/2015	1
<input checked="" type="checkbox"/> 4	0	Long	QBE	Daily	Yes	Yes			1
<input checked="" type="checkbox"/> 5	0	Long	QBE	Daily	Yes	Yes			2
<input checked="" type="checkbox"/> 6	0	Long	QBE	Daily	Yes	Yes			3
<input checked="" type="checkbox"/> 7	0	Long	QBE	Daily	Yes	Yes			4
<input checked="" type="checkbox"/> 8	0	Long	QSL	Daily	Yes	Yes	23/10/2015	15/01/2016	1
<input checked="" type="checkbox"/> 9	0	Long	AMP	Daily	Yes	Yes		/11/2015	1
<input checked="" type="checkbox"/> 10	0	Long	CBA	Daily	Yes	Yes		/11/2015	1
<input checked="" type="checkbox"/> 11	0	Long	CBA	Daily	Yes	Yes		/11/2015	2
<input checked="" type="checkbox"/> 12	0	Long	CBA	Daily	Yes	Yes		/12/2015	3
<input checked="" type="checkbox"/> 13	0	Long	SUN	Daily	Yes	Yes	20/11/2015	11/12/2015	2
<input checked="" type="checkbox"/> 14	0	Long	AMP	Daily	Yes	Yes	22/11/2015	27/11/2015	2

Can re-sort — click on column header

Un-tick to exclude from the simulation

Change date range to display

See the User Manual (pp132-144) for discussion

6. Review Trade Parameters

Note many parameters, and preferences

The screenshot shows the 'Trade Parameters' window with three tabs: 'Trade Parameters', 'Preferences', and 'More Features....'. The 'Trade Parameters' tab is active and contains several sections:

- Position Size Model:** Includes radio buttons for 'Equal Dollar Units' (selected), 'Equal Percent Dollar Units', 'Fixed Dollar Risk', 'Fixed Percent Risk', 'Fixed Dollar Volatility', and 'Fixed Percent Volatility'. Below these are checkboxes for 'Pyramid Profits' and 'Pyramid Trades'.
- Simulation Type:** Includes radio buttons for 'Portfolio Simulation' (selected), 'Portfolio Simulation (Ignore Dates)', and 'Basket test'.
- Trade Parameters (Stocks):** Contains input fields for 'Initial Trading Capital' (\$50000.00), 'Portfolio Limit' (100.00%), 'Total Maximum Open Positions' (100), and 'Maximum allowable daily orders' (20). It also has 'Transaction Cost (each way)' (\$0.000) and 'Margin Requirement' (100.00%) fields, along with checkboxes for 'Use Transaction Cost from Trade Database', 'Use Margin Req from Trade Database', and 'Magnify Position Size (and Risk) according to Margin Requirement'.
- Parameters - Equal Dollar Units:** Contains a 'Capital per Trade' field set to \$5000.00.
- Margin Requirement Interest Rate:** Contains input fields for 'Long Trades (Debit)' (0.0000%) and 'Short Trades (Credit)' (0.0000%).

A white text box at the bottom center of the window reads: 'See the User Manual (pp144-161) for discussion'.

7. Start Simulation



- Now run a TradeSim “simulation”.
- The result is several more screens of info:
 - Trade Database Manager view
 - Trade Simulation report
 - Trade Statistics Table and graphs
 - Various Equity Charts...

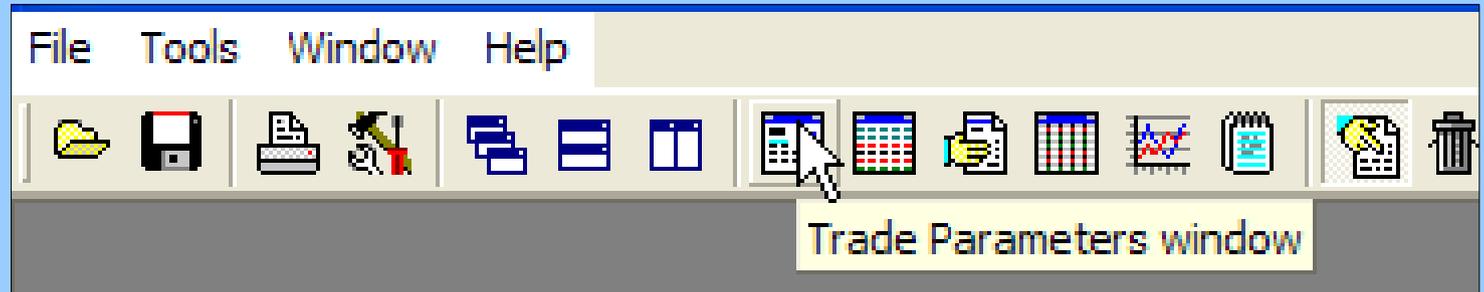
TradeSim — tips #1

TradeSim toolbar options to more easily navigate the displayed windows:

- Cascade windows
- Tile windows horizontally, or vertically



TradeSim — tips #2



Several toolbar buttons to jump to:

- Trade Parameters window
- Trade Database window
- Simulation Report window
- Trade Log window

Trade Simulation Report

Trade Simulation Report

Trade Simulation Reports | Trade Statistics

Trade Parameters and Preferences

Trade Database Filename
C:\TradeSimData\\$.Funda-... TEST.trb

Trade Parameters

Initial Capital:	\$50,000.00
Portfolio Limit:	100.00%
Maximum number of open positions:	100
Maximum allowable daily orders:	20
Automatically Use Position Size Model from database:	No
Default Position Size Model:	Equal Dollar Units
Capital per Trade (\$ value):	\$5,000.00
Pyramid profits:	No
Transaction cost (Trade Entry):	\$0.00
Transaction cost (Trade Exit):	\$0.00
Automatically use Margin Requirement from database:	No
Margin Requirement:	100.00%
Magnify Position Size (& Risk) according to Margin Req:	No
Automatically select Position Size Model from database:	No
Enable Provisional Trades:	No
Survivorship Bias Filer:	No
Margin Requirement Daily Interest Rate (Long Trades):	0.0000%
Margin Requirement Yearly Interest Rate (Long Trades):	0.0000%
Margin Requirement Daily Interest Rate (Short Trades):	0.0000%
Margin Requirement Yearly Interest Rate (Short Trades):	0.0000%

Trade Preferences

Trading Instrument:	Stocks
Break Even Trades:	Process separately
Trade Position Type:	Process all trades
Entry Order Type:	Default Order
Exit Order Type:	Default Order
Minimum Trade Size:	\$0.00
Accept Partial Trades:	No
Volume Filter:	Ignore Volume Information
Pyramid Trades:	No

Trade Parameters | Detailed Report | Combined Report

Note 2 tabs:-
– Simulation Reports
– Statistics

Note 3 tabs:-
– Trade Parameters
– Detailed Report
– Combined Report

Trade Statistics Table

Note tabs and many columns

Trade Simulation Report

Trade Simulation Reports | Trade Statistics

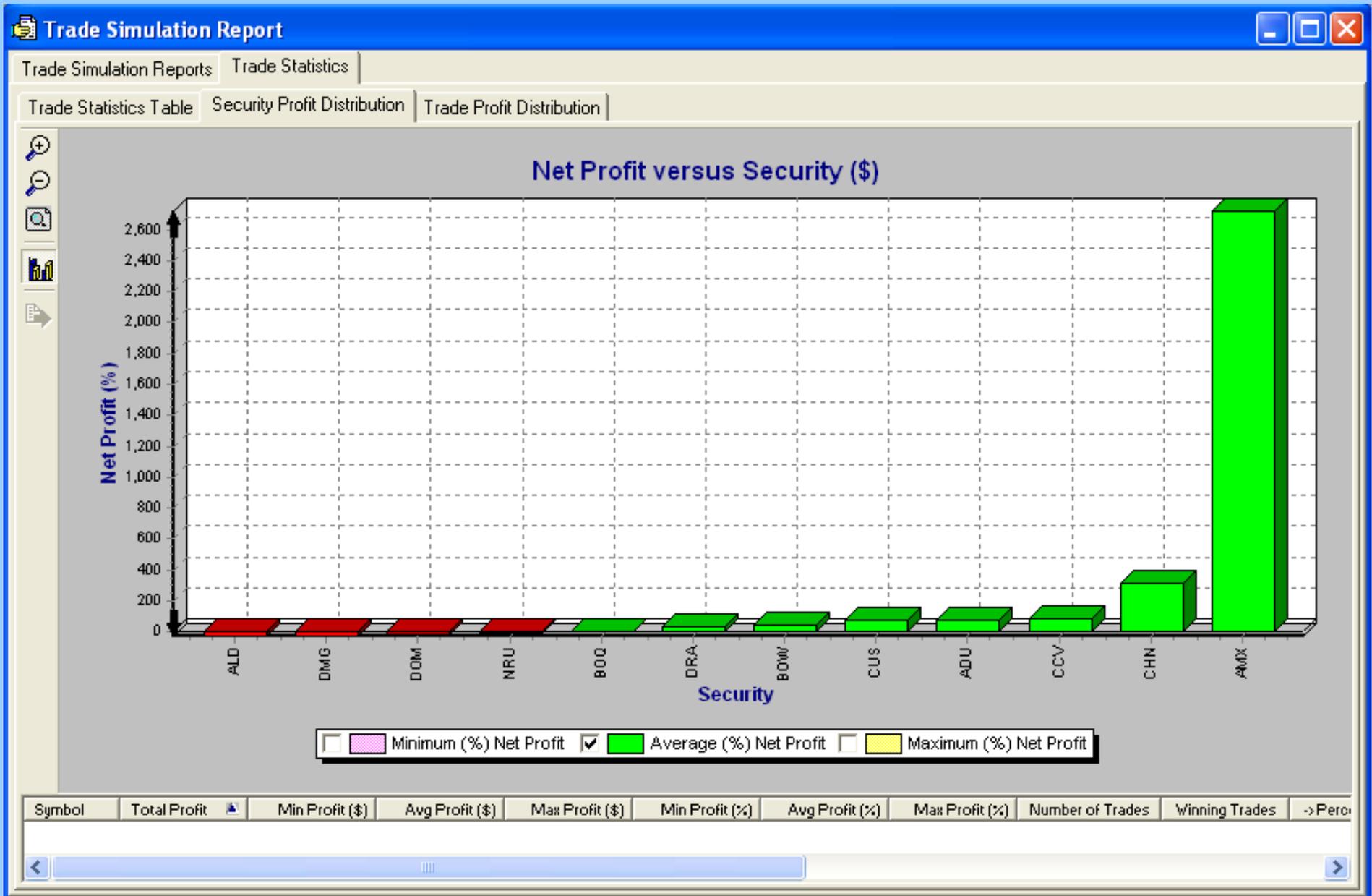
Trade Statistics Table | Security Profit Distribution | Trade Profit Distribution

Sim...	Total Profit	Min Profit (\$)	Avg Profit (\$)	Max Profit (\$)	Min Profit (%)	Avg Profit (%)	Max Profit (%)	Number of Trades	Winning Trades	->Pe
ADU	\$3,507.42	\$3,507.42	\$3,507.42	\$3,507.42	70.15%	70.15%	70.15%	1	1	100
ALD	-\$1,470.50	-\$1,470.50	-\$1,470.50	-\$1,470.50	-29.41%	-29.41%	-29.41%	1	0	0
AMX	\$136,009.36	\$136,009.36	\$136,009.36	\$136,009.36	2720.00%	2720.00%	2720.00%	1	1	100
BOQ	\$245.06	\$245.06	\$245.06	\$245.06	4.91%	4.91%	4.91%	1	1	100
BOW	\$2,080.41	\$2,080.41	\$2,080.41	\$2,080.41	41.61%	41.61%	41.61%	1	1	100
CCV	\$3,984.37	\$3,984.37	\$3,984.37	\$3,984.37	79.69%	79.69%	79.69%	1	1	100
CHN	\$15,715.38	\$15,715.38	\$15,715.38	\$15,715.38	314.30%	314.30%	314.30%	1	1	100
CUS	\$3,482.79	\$3,482.79	\$3,482.79	\$3,482.79	69.68%	69.68%	69.68%	1	1	100
DMG	-\$1,249.98	-\$1,249.98	-\$1,249.98	-\$1,249.98	-25.00%	-25.00%	-25.00%	1	0	0
DOM	-\$980.00	-\$980.00	-\$980.00	-\$980.00	-19.60%	-19.60%	-19.60%	1	0	0
DRA	\$1,833.26	\$1,833.26	\$1,833.26	\$1,833.26	36.67%	36.67%	36.67%	1	1	100
NRU	-\$375.00	-\$375.00	-\$375.00	-\$375.00	-7.50%	-7.50%	-7.50%	1	0	0

Can re-sort — click on column header

See the User Manual (pp172-179) for discussion

Trade Statistics — Security...



Trade Log

- Lists all entry and exit trades

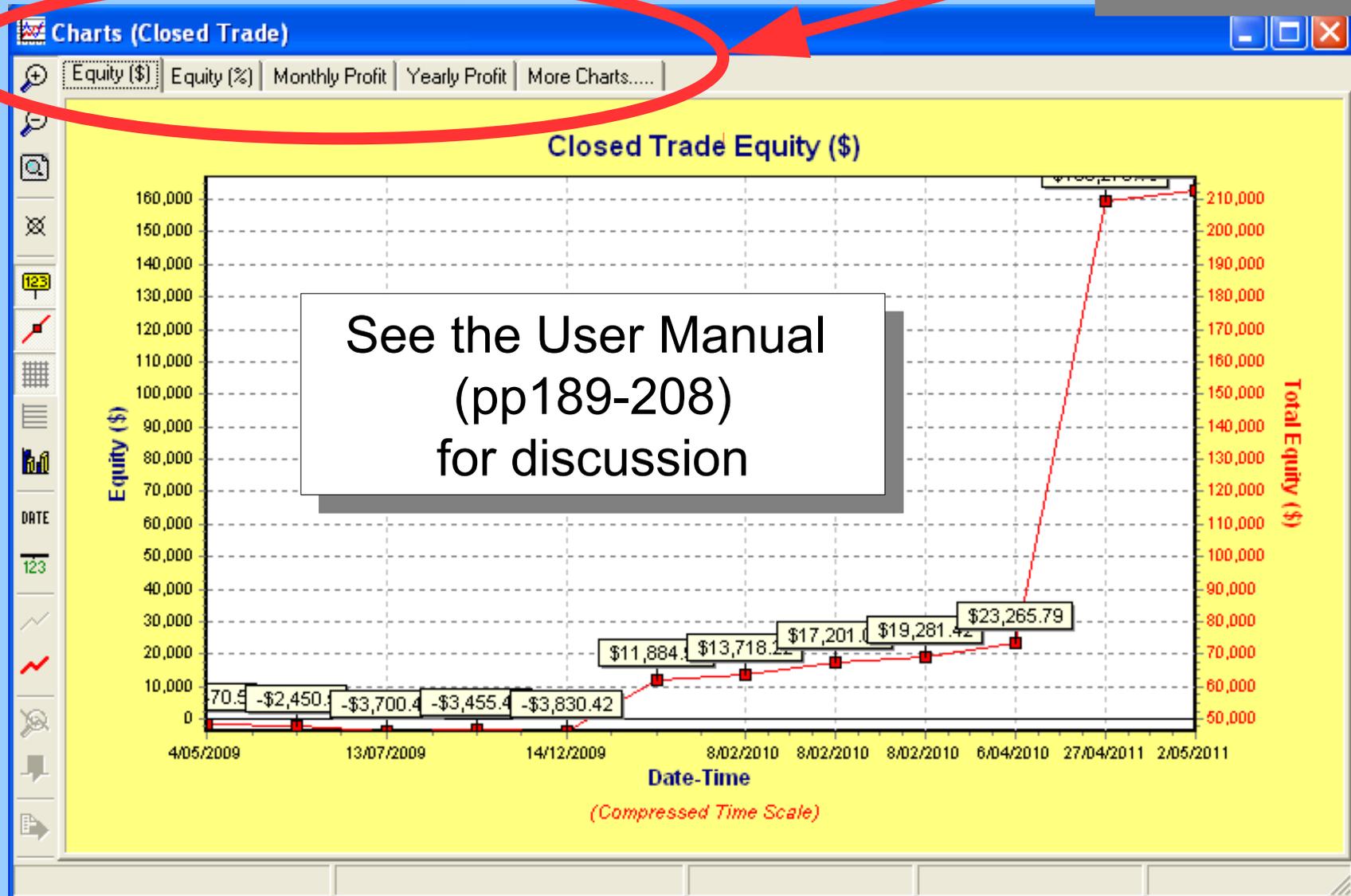
In...	Trade	Sys ID	Symbol	Status	Pos	Periodi...	Trans Date-Time	P Level	P Cou...	Re-entry Type	Days	Volatility	Initial Str
0	1	0	ADU	Enter	Long	Weekly	2/03/2009	0	0	Base	-	-	\$0.18
1	2	0	ALD	Enter	Long	Weekly	2/03/2009	0	0	Base	-	-	\$0.25
2	3	0	AMX	Enter	Long	Weekly	2/03/2009	0	0	Base	-	-	\$0.05
3	4	0	BOW	Enter	Long	Weekly	2/03/2009	0	0	Base	-	-	\$0.23
4	5	0	CCV	Enter	Long	Weekly	2/03/2009	0	0	Base	-	-	\$0.24
5	6	0	CHN	Enter	Long	Weekly	2/03/2009	0	0	Base	-	-	\$0.08
6	7	0	CUS	Enter	Long	Weekly	2/03/2009	0	0	Base	-	-	\$1.10

Size	Position Value	PS Stat...	Profit Status	Gross Trade Profi...	Net Trade Profit(\$)	Gross Trade Profi...	Net Trade Profit(%)	Total Profit	Total Profit (%)	Total Capital
	\$4,999.61	Normal	-	-	-	-	-	-	-	\$50,000.00
	\$4,999.70	Normal	-	-	-	-	-	-	-	\$50,000.00
	\$4,999.93	Normal	-	-	-	-	-	-	-	\$50,000.00
	\$4,999.70	Normal	-	-	-	-	-	-	-	\$50,000.00
	\$5,000.00	Normal	-	-	-	-	-	-	-	\$50,000.00
	\$4,999.91	Normal	-	-	-	-	-	-	-	\$50,000.00
	\$4,998.50	Normal	-	-	-	-	-	-	-	\$50,000.00
	\$4,999.94	Normal	-	-	-	-	-	-	-	\$50,000.00
	\$5,000.00	Normal	-	-	-	-	-	-	-	\$50,000.00
	\$4,999.80	Normal	-	-	-	-	-	-	-	\$50,000.00
	-	-	LOSS	-\$1,470.50	-	-	-	-	-2.94 %	\$48,529.50
	-	-	LOSS	-\$980.00	-	-	-	-	-4.90 %	\$47,549.50
	-	-	LOSS	-\$1,249.98	-\$1,249.98	-25.0000 %	-25.0000 %	-\$3,700.48	-7.40 %	\$46,299.52
	\$4,994.73	Normal	-	-	-	-	-	-	-	\$46,299.52
	\$5,000.00	Normal	-	-	-	-	-	-	-	\$46,299.52
	-	-	GAIN	\$245.06	\$245.06	4.9065 %	4.9065 %	-\$3,455.42	-6.91 %	\$46,544.58
	-	-	LOSS	-\$375.00	-\$375.00	-7.5000 %	-7.5000 %	-\$3,830.42	-7.66 %	\$46,169.58
	-	-	GAIN	\$15,715.38	\$15,715.38	314.3134 %	314.3134 %	\$11,884.96	23.77 %	\$61,884.96
	-	-	GAIN	\$1,833.26	\$1,833.26	36.6667 %	36.6667 %	\$13,718.22	27.44 %	\$63,718.22
	-	-	GAIN	\$3,482.79	\$3,482.79	69.6767 %	69.6767 %	\$17,201.01	34.40 %	\$67,201.01
	-	-	GAIN	\$2,080.41	\$2,080.41	41.6107 %	41.6107 %	\$19,281.42	38.56 %	\$69,281.42
	-	-	GAIN	\$3,984.37	\$3,984.37	79.6875 %	79.6875 %	\$23,265.79	46.53 %	\$73,265.79
	-	-	GAIN	\$136,009.36	\$136,009.36	2720.2247 %	2720.2247 %	\$159,275.15	318.55 %	\$209,275.15
	-	-	GAIN	\$3,507.42	\$3,507.42	70.1538 %	70.1538 %	\$162,782.57	325.57 %	\$212,782.57

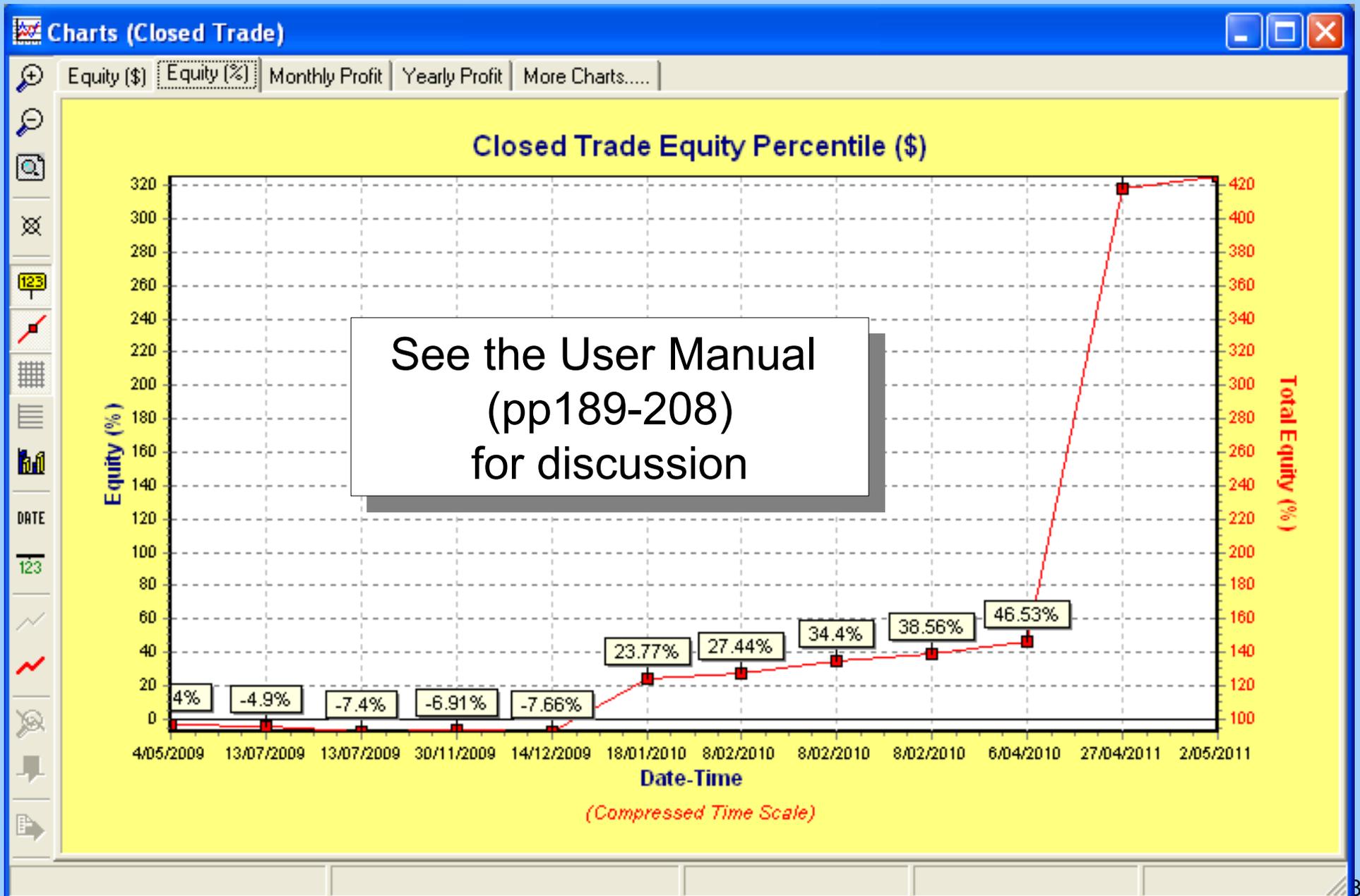
See the User Manual
(pp179-188)
for discussion

Equity Chart — Dollars \$

Note tabs



Equity — Percentage %



Caveats

This example is over-simplified, and has ignored:

- Brokerage
- Testing different time periods and market conditions
- Survivorship Bias (securities that were in the target group in the past, but are no longer)
- Possible optimisation (of trade parameters)

More information?

- Tutorial guides (pdf), videos, etc.
- Robert's web site:
www.robertbrain.com/bullcharts/
- The official web site:
www.compuvision.com.au
- Pricing (time unlimited versions):
Standard edition — \$198
Professional edition — \$484
Enterprise edition — \$1,520

TradeSim — more help

Current version 6.7.7 (build 769)*

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- “Users Guide” (299 pages)
- Quick Start Tutorial guide (21 pages)
- Several focused docs on various topics

<http://www.compuvision.com.au/Articles.htm>

Note: Some documentation refers mostly to MetaStock; but is still relevant to BullCharts.

* as at October 2016

Questions / Discussions?

The End