



JIGSAW TRADING

Introduction To Order Flow

21st Feb, 2014

Peter Davies – Jigsaw Trading



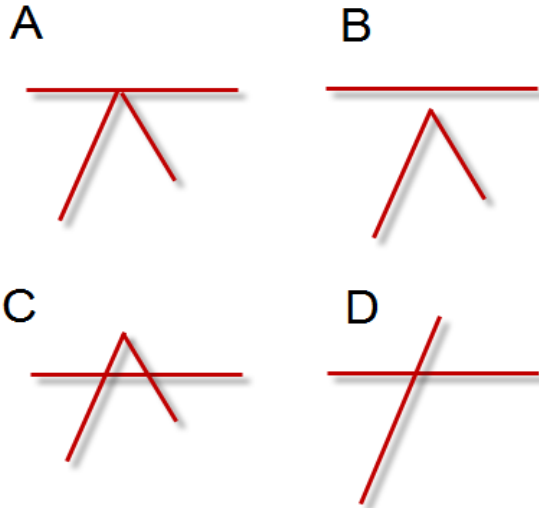
Presumptions & Objectives

- Some people have never used order flow
- Some people use one order flow tool but don't know how to use another (e.g. Cumulative Delta vs Footprint)
- Some people use order flow mechanically following a few rules they got off the web/trainer. (e.g. Cumulative Delta divergences)
- Our goal today is to get you to understand the mechanics of price change and what order flow tools show you about the change
- All Order flow tools should make sense after this, you should understand conceptually that the tools are interchangeable
- These sessions are geared towards daytrading, I personally do not use order flow for anything else.
- You will get something you can take away and use today.



Order Flow Benefits

- Refine/confirm a trade entry. Before OR after the entry.



- Set Bias
- Define a 'second entry'
 - Markets do 'stair step' and 'hidden backstops' can get created once a move is under way
- Enter the market at a point where there is a high probability of a short term "pop" in your favor.
- Scalp ticks/ultra-short term trading
 - Location, location, location...



What Is Order Flow?

- Order Flow components
 - INTENT
 - Resting/Limit Orders – Market Depth, Depth & Sales
 - ACTUAL
 - Executions – Volume, Volume Profile, Time & Sales, Reconstructed Tape, Summary Tape, Footprint, Cumulative Delta, Depth & Sales
- Order Flow Perspectives
 - High level/Long Term – the 100,000 foot view
 - Cumulative Delta, Volume, Volume Profile
 - Medium Term – the 20,000 foot view
 - Cumulative Delta, Volume, Footprints
 - Short Term – the 1,000 foot view
 - Volume, Footprints, Market Depth, Depth & Sales, Time & Sales

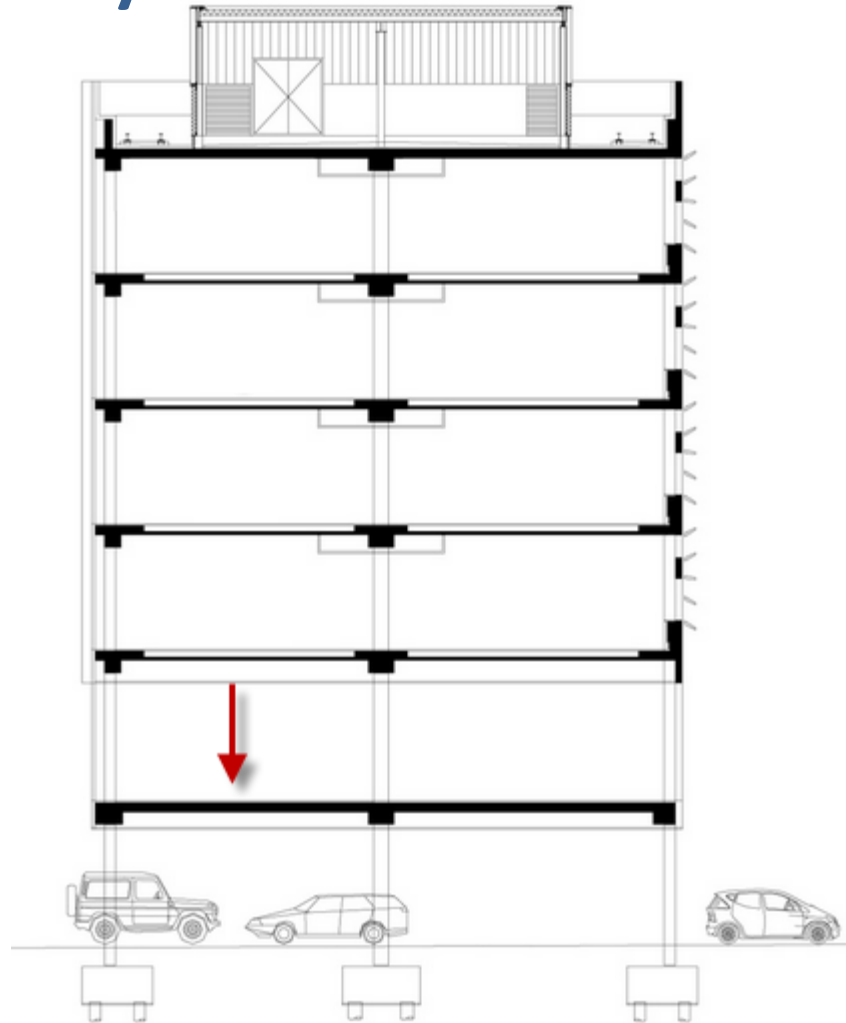


Why does Price Move?

- Why does price move?
 - A very different question to “why are people buying here?”
 - More buyers than sellers?
 - Definitely not. Every buy is a sell. The number of buyers & sellers is the same (in terms of numbers of contracts)
 - Supply & Demand
 - Not in the traditional sense. Only in stocks is supply finite in any meaningful sense “the float” and of course this can cause scarcity. Even then, supply is rarely an issue in stock markets, yet prices still fluctuate.
 - In futures, 99% of people don’t take physical delivery and it is just contracts traded. Contracts get created and destroyed as people trade.
 - More aggressive buyers than sellers?
 - Possibly. Perhaps ‘less patient’ buyers than sellers is better.
- Perhaps a better question is “What stops price from moving?”



Liquidity





Liquidity – Resting Orders

	1431.50	
	1431.25	
	1431.00	
	1430.75	
	1430.50	
	1430.25	4179
	1430.00	1873
	1429.75	761
	1429.50	799
	1429.25	534
	1429.00	212
172	(1) 1428.75	
308	1428.50	
336	1428.25	
450	1428.00	
614	1427.75	
1880	1427.50	
	1427.25	
	1427.00	
	1426.75	
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	1425.25	
	1425.00	
	1424.75	
	1424.50	
	1424.25	

Buy Side Liquidity
AKA
Bids



Sell Side Liquidity
AKA
Offers/Asks





Liquidity – Resting Orders

There is no buyer liquidity up here

There **is** buyer liquidity down here
You just can't see it!

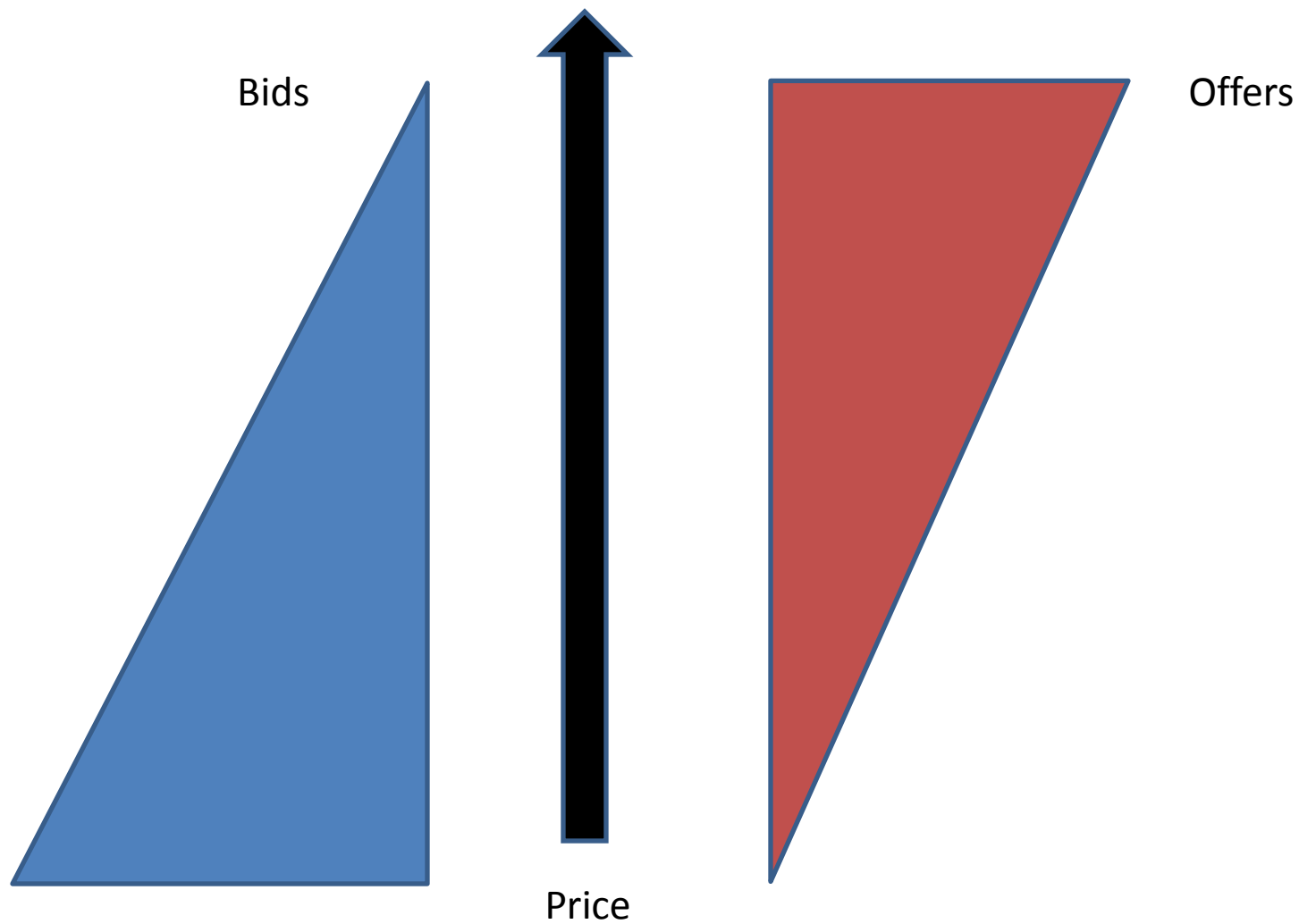
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	1425.25	
	1425.00	
	1424.75	
	1424.50	
	1424.25	

There **is** seller liquidity up here
You just can't see it!

There is no seller liquidity down here



Liquidity – Resting Orders





Summary

- Market Orders eat buy side/sell side Liquidity AKA Limit Orders.
- When there are no more Ask Limit Orders to eat, successive Buy Market Orders will eat higher Ask Limit Orders and price will move up.
- **All Order Flow Analysis is a variation on this theme.**
- As price moves up, it takes time for buy side liquidity to built up behind the move BUT you are moving into an area with sell side liquidity above. In this situation if the amount of buy/sell market orders equalizes, price will move DOWN.
- This relative lack of buy side liquidity behind up moves is known as a **liquidity vacuum**. It is relative, it does not mean that there is nothing behind.
- Different players take different amounts of time to fill in those orders behind a price move. HFTs/Market Makers would be first.
- “Lines in the sand” get created behind you as price moves up. These are the second entries created once a move is under way.
- Don’t just look ahead – keep an eye on what is behind you.



So what?

- Spikes vs Churns
 - Which is the stronger move?
 - A sudden spike up looks stronger but the pullbacks are wilder because the liquidity hasn't built up behind the move yet
 - Churns are slower and appear to provide less opportunity to jump on board. This makes trend days problematic.
- Retracements
 - Can be identified by the lack of volume/delta PARTICIPATION in the move.
 - You don't change bias until you see the participation
 - Ticks down on smallish volume means bidders are stepping aside – and why wouldn't they? Up moves are supported by rising “lines in the sand” but there is no reason to do this on every tick.
- Stair stepping
 - As above, markets stair step up
 - This doesn't mean that no-one shakes the tree from time to time because traders put their stops in obvious places.



Reversals

- Basic elements of a reversal (long to short)
 1. Absorption. Offers stay firm in the face of continued buying. Often this is with an iceberg, often this absorption/accumulation occurs across many prices. The more they can absorb the better. Delta will continue to increase but price will not. **Easy to spot in the order flow.**
 2. Buyers fade away. Buyers simply stop buying. Quite often they will return to the same spot several times and just not hit it. This is more significant when the offer is small. **Easy to spot in the order flow but the market does pause all the time.**
 3. Sellers come in and start selling. AKA “The Roll” there is not so much a fade in buying as much as the sellers just appear ‘out of nowhere’. **Hard to spot anywhere in a timely manner.**

These are not mutually exclusive!



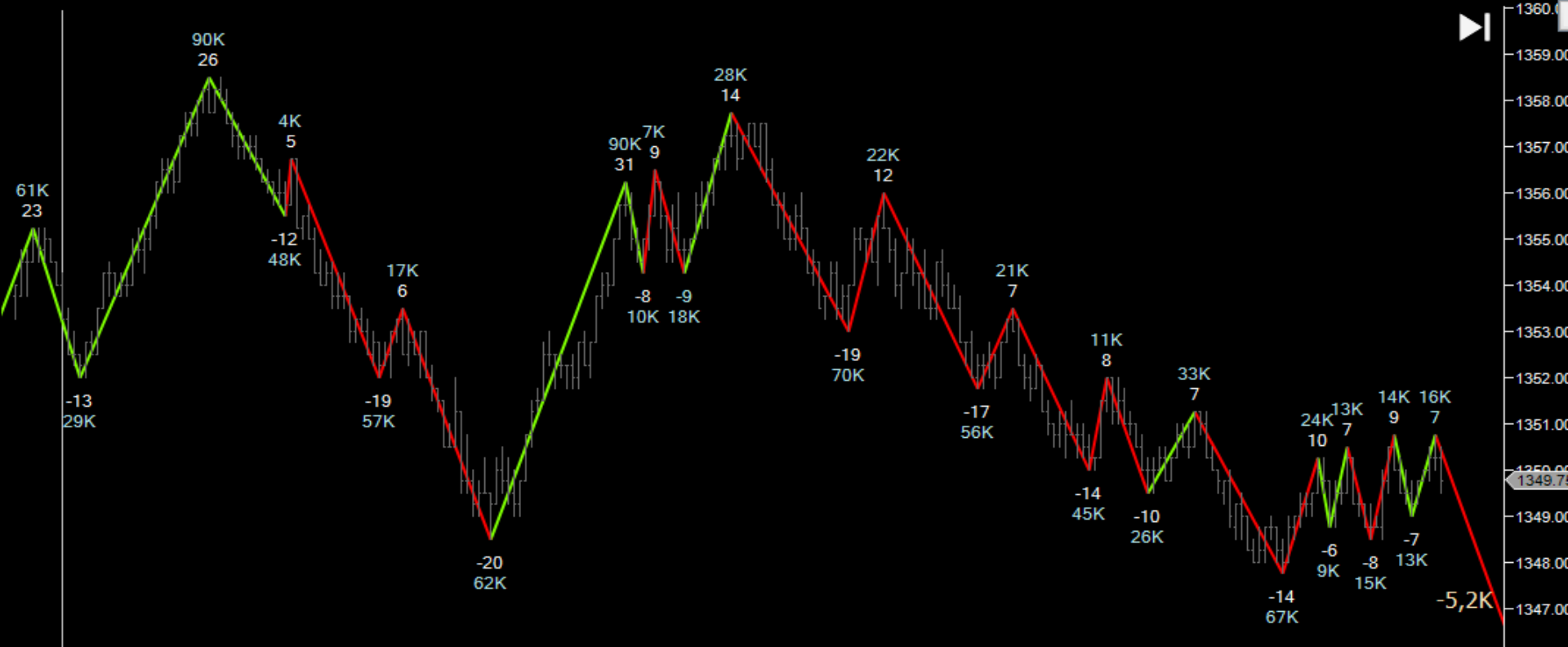
Second Entries

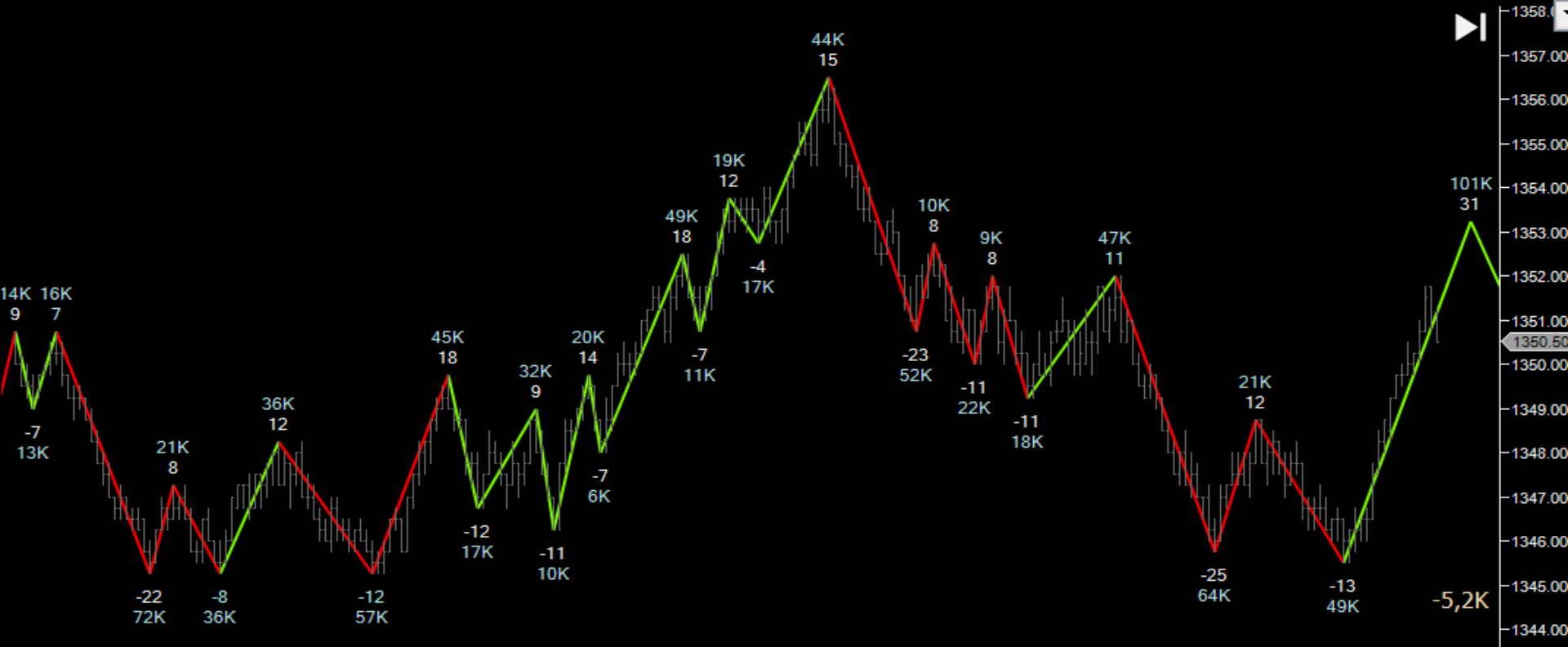
- So you missed a reversal? How do you know?
 - **Price reversed where you expected it to.**
 - Delta shift/Footprint accompanying the move is significant.
 - Volume accompanying the move is significant.
 - You no longer have an entry but you do have a bias. You might be in the first leg of the move but be confident this is not a pullback.
 - Institutional traders will continually bring down the “line in the sand” to keep price down as it drops.
 - You now focus on the order flow and wait for the ceiling to form above you and short that.
 - Absorption/Buying fades/Sellers jump in.
 - Keep an eye on the order flow because the move up should be weak.
 - These entries are less crowded. There is less going on here and reading the order flow is EASIER at these points.
 - Just don't marry the trade.



Cumulative Delta

- Buys @ Market – Sells @ Market
- Buy market orders should eat sell side liquidity (aka the ceiling) and price should move up.
 - Absorption – delta moves up, price doesn't. Traders often get trapped this way.
 - Buyers fade away – easier to see on the DOM/T&S
 - Sellers coming in, in force, price reverses down with a big delta shift (+10k on ES)
- This tool is better used to set bias. It's a high level view.
- On thin markets such as CL, the cumulative delta is much harder to read. You can have relatively long periods where delta heads down & price moves up because the use of limit orders is slightly different there.

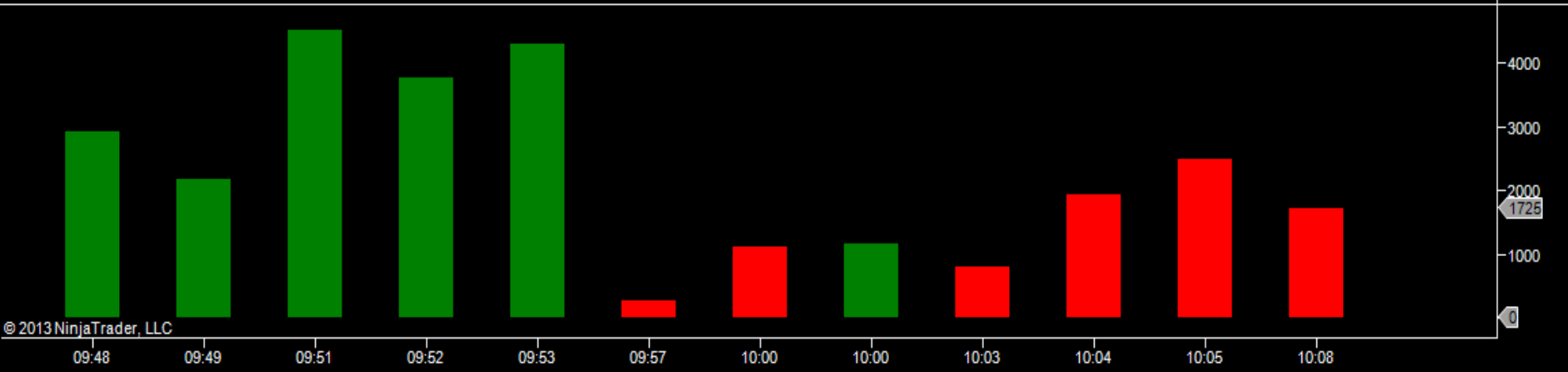
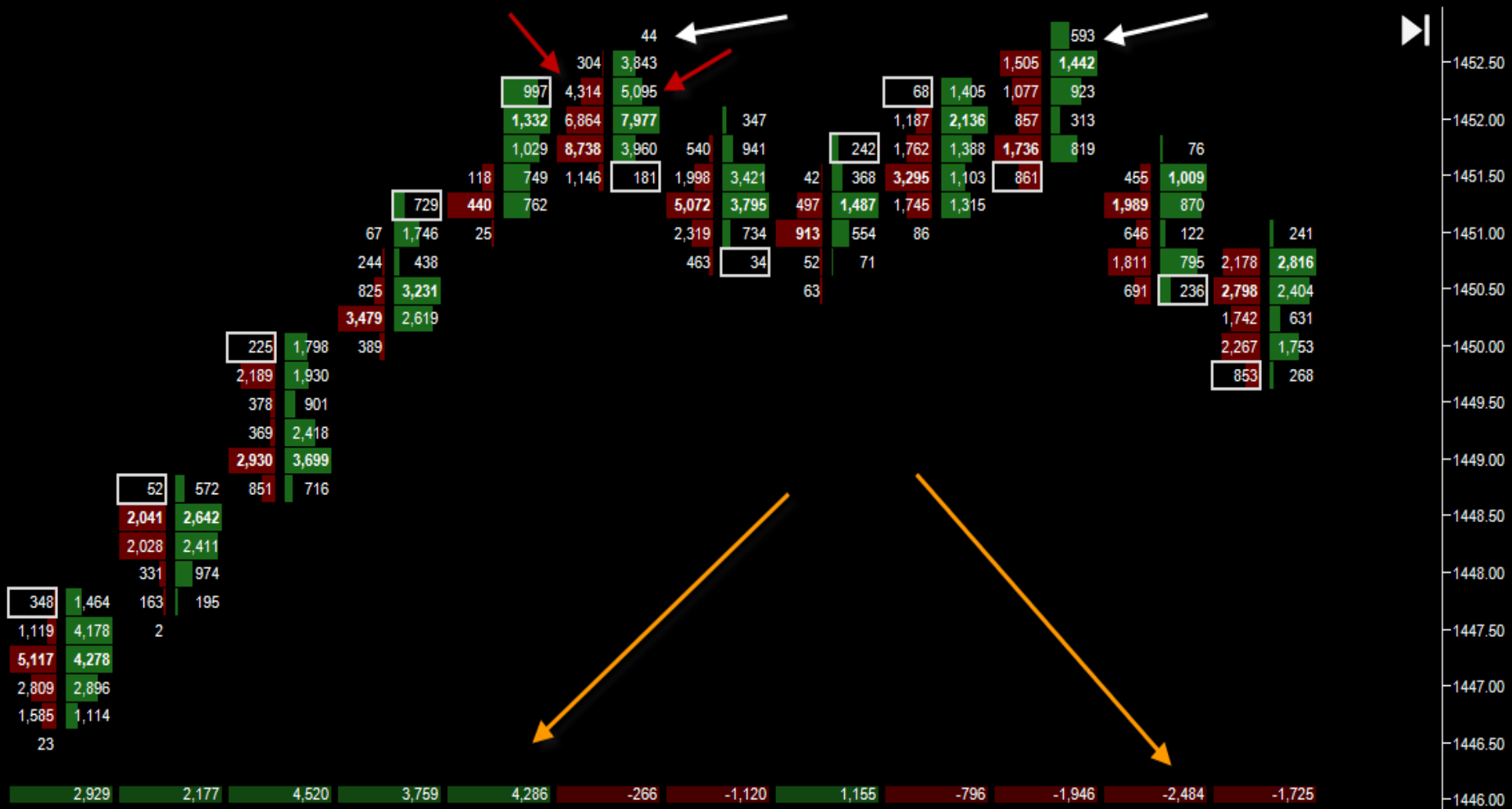


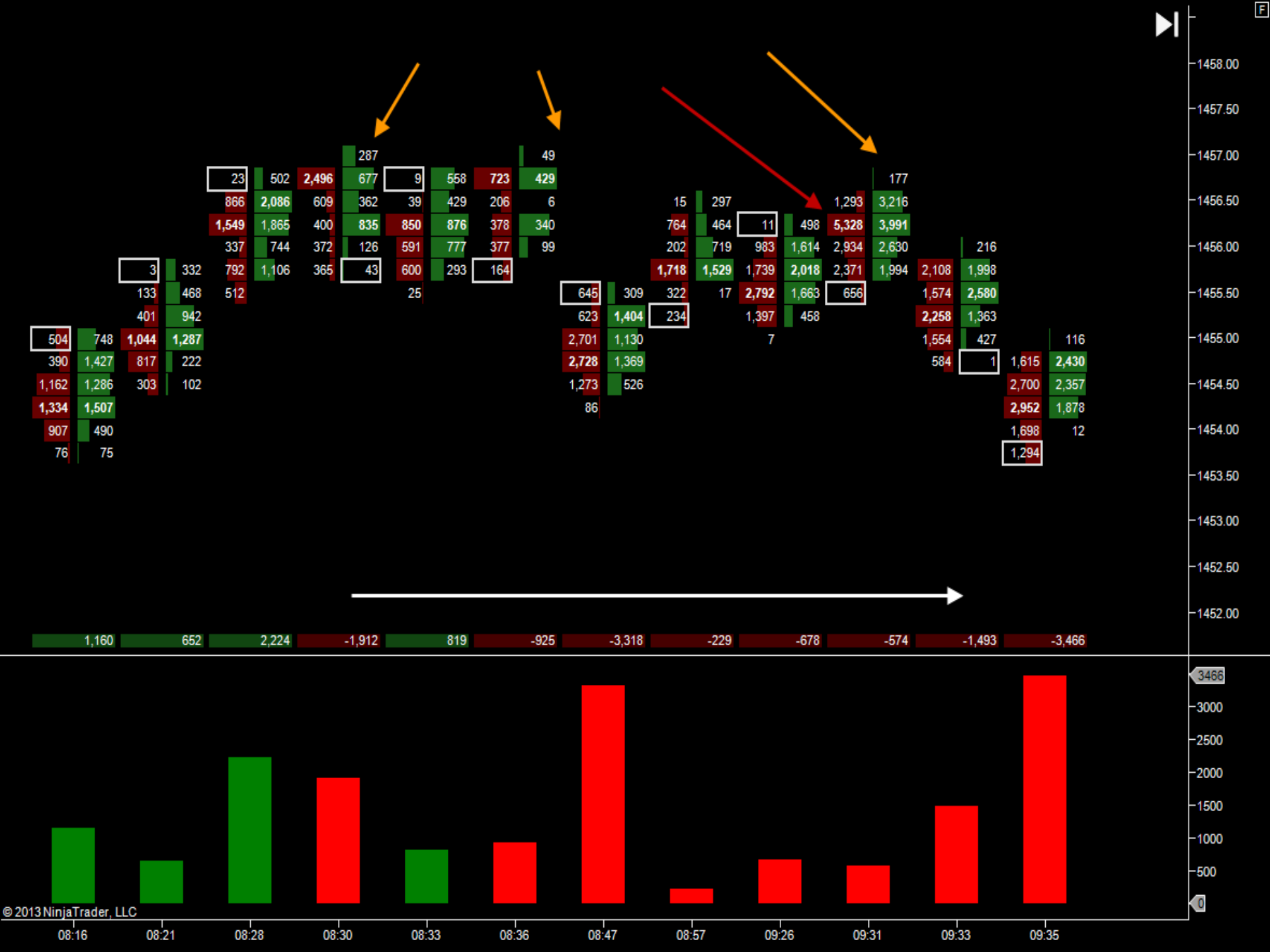




FootPrint Charts

- Shows trades @ Bid next to trades @ Offer
- Buy market orders should eat sell side liquidity (aka the ceiling) and price should move up.
 - Absorption – large volume of contracts on one side without moving price up, usually at one or two price levels
 - Buyers fade away – get to a price level and just a few contracts (or zero contracts print). Often we re-visit the area or nearby and do the same again.
 - Sellers coming in, in force, price reverses down and trades @ Bid are at least double the trades @ offer
- This is a lower level tool, good for both entry and bias.
- Range charts seem to work very well e.g 4-5 range on ES, 10 range on thin markets like CL







Order Book

- The Order Book is unique as it is the only tool that shows intent.
- With the CD/Footprints, you don't see the resting orders ahead of time, you only know what they were after market orders have eaten them.
- Whilst there are a lot of fake/spoof orders on the DOM, the people doing the spoofing do so for a reason. In the ultra short-term, you can piggy back/lean on their trades.
- Good Order Books (CQG/XTrader/Jigsaw) will show you trades executed against the depth.
- The three reversal types are of course there to see and this will be discussed in detail in session 2.



Time & Sales aka The Tape

- Reports trades. There are some limitations and these will be discussed in Session 2.
- Green trades – trades @ offer (buy market), Red trades – trades @ bid.
- Lots of green trades should eat the offers and move price up
- As a short-term tool, the pace of the tape, the ease with which a price ‘holds’ the overall flow is something that tape readers follow.
- In addition to the three reversal types, the Time & Sales also shows the size of trades. In fact, some people just use it for size. For example,
 - you see lots of 100+ buy market orders going up to yesterdays high
 - then 3 minutes pass & the largest buy market order is 5 contracts
 - Now you see sellers coming in with 100, 300, 1000 lot market orders
 - You still have buy market orders, but they are all 1 lot warriors
 - Whose side do you want to be on?



Volume Clusters & Volume Profile

- So far, we have been discussing order flow over time. Volume profiles show total traded at each level.
- This gives you a perspective on where people might be positioned.
- Daily Volume Profile is the high level view
- Volume clusters analysis is zooming in on local action
- Interpretation of a Volume Profile is not dissimilar to the FT71 & L2ST approach
- In some ways, the way you approach volume clusters is the opposite of the way you'd approach volume profiles.
- As a non-trend day progresses and we go back and forth over old ground, Volume Profile is much more useful than Volume Clusters.
- Volume clusters are simply areas where an abnormally large amount of volume is traded.
- It shows a behavior change on the part of those with resting orders in the market. The liquidity picture is changing.



Volume Clusters



Volume Cluster at a Swing Low

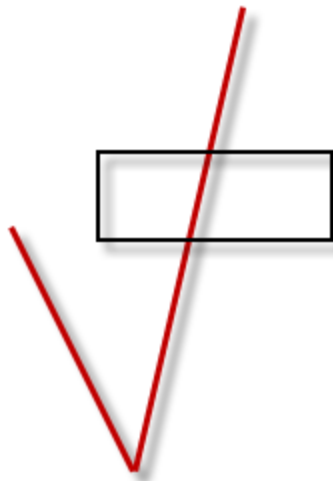
A Volume cluster at a swing low is absorption. As the market moves up and away from the cluster, there should be definite signs of trades hitting the bid being far in excess of trades hitting the offer (most people look for 2x)

This is responsive buying.

In theory, a retrace back to this cluster should be defended. In practice, it's not that often you get back to this spot. On the ES, the first leg up from a reversal is usually large and so you don't get to test this area that often.



Volume Clusters



**Volume Mid way
through a swing**

A Volume Cluster mid way through a swing is significant only where it is not occurring every few ticks. Sometimes the market is very thick and it's printing 5k contracts every few ticks.

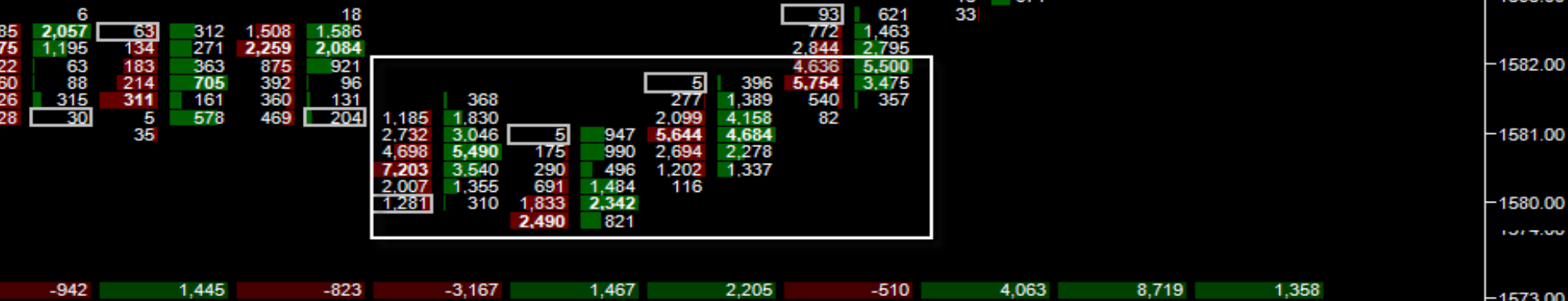
In cases where you see an exceptional amount of volume mid-way through a swing, the presumption might be that it's a battle - someone trying to hold down it and failing. On the other hand, it could just be half a stat arb. You don't really know.

What you do know is that you got a lot of long trades initiated to get through the level.

At this point you can presume this area will be defended by the longs. Unlike the cluster at a major reversal, this is an area you will likely come back to.

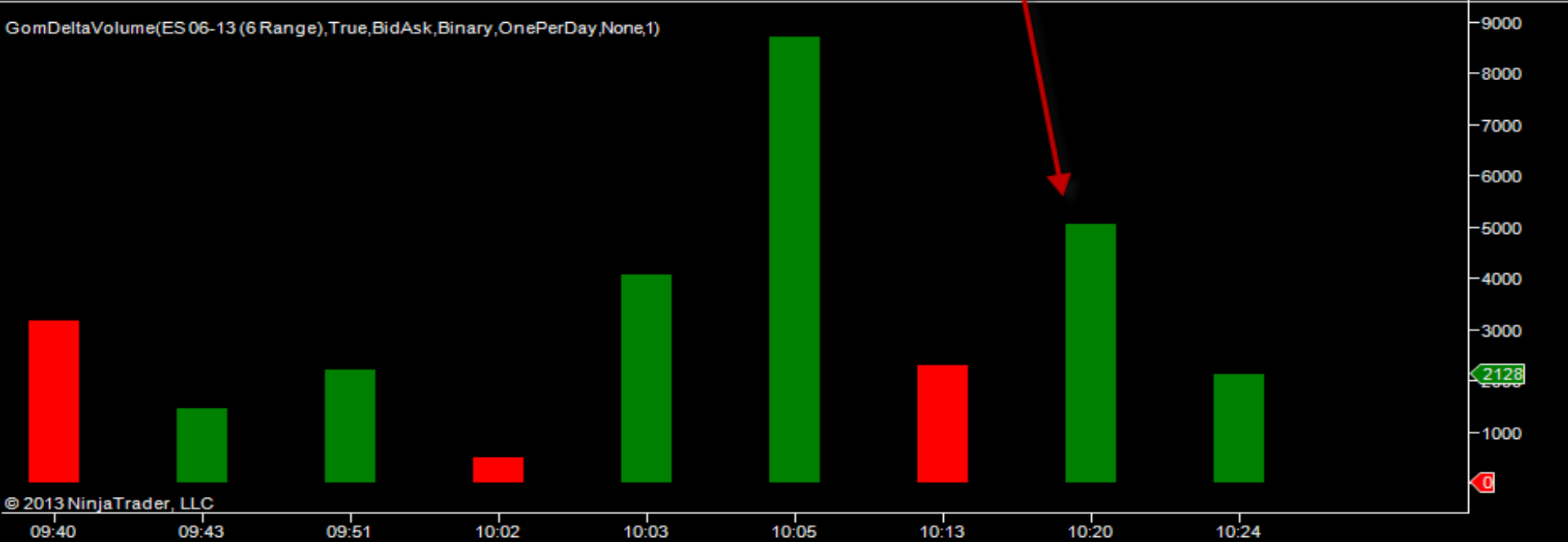
29th April, 2013

Here's a cluster, as we came off the lows, we can see clusters at the bottom, then we moved up with relatively little sell liquidity. It halted and churned at this point and seemed to be threatening to reverse down after the 10 tick pop up.



GomDeltaVolume(ES 06-13 (6 Range), True, BidAsk, Binary, OnePerDay, None, 1)

The bottom of this action has a lot of contracts traded but delta was fairly flat. We can see that at our volume cluster and the breakout from it, we have a nice upshift in delta. There's a lot more buying here, as such the presumption is that this will be defended.



Volume Cluster	1588.00	1716	Retrace to Cluster	1588.00	1941	High Volume Node Range	1588.00	2272
	1587.75	1459		1587.75	1498	163	1587.75	1640
	1587.50	1330		1587.50	1851	5469	1587.50	1753
	1587.25	1322	32	1587.25	1474	9851	1587.25	1454
	1587.00	1530	4382	1587.00	1832	14931	1587.00	1530
	1586.75	1359	3561	1586.75	944	21388	1586.75	156
	1586.50	1234	9565	1586.50	582	45669	1586.50	915
98	1586.25	992	4036	1586.25	640	42204	1586.25	1337
3215	1586.00	1098	7382	1586.00	2441	43075	1586.00	1584
3456	1585.75	355	12632	1585.75	2226	24636	1585.75	1610
1770	1585.50	694	13909	1585.50	1419	14294	1585.50	1754
3367	1585.25	1442	24105	1585.25	1732	24105	1585.25	2124
5862	1585.00	1219	15886	1585.00	1540	15886	1585.00	1783
1832	1584.75	1453	7660	1584.75	1459	7660	1584.75	1705
6999	1584.50	1769	8144	1584.50	1712	8144	1584.50	2187
10760	1584.25	1476	10760	1584.25	1554	10760	1584.25	1900
5844	1584.00	1705	5844	1584.00	1563	5844	1584.00	16899
1052	1583.75	1478	1052	1583.75	16286	1052	1583.75	
4419	1583.50	1559	4419	1583.50		4419	1583.50	
3487	1583.25	1521	3487	1583.25		3487	1583.25	
2630	1583.00	14316	2630	1583.00		2630	1583.00	
4354	1582.75		4354	1582.75		4354	1582.75	
11400	1582.50		11400	1582.50		11400	1582.50	
14750	1582.25		14750	1582.25		14750	1582.25	
18100	1582.00		18100	1582.00		18100	1582.00	
12374	1581.75		12374	1581.75		12374	1581.75	
5233	1581.50		5233	1581.50		5233	1581.50	
11368	1581.25		11368	1581.25		11368	1581.25	
17093	1581.00		17093	1581.00		17093	1581.00	
16324	1580.75		16324	1580.75		16324	1580.75	
14047	1580.50		14047	1580.50		14047	1580.50	
5653	1580.25		5653	1580.25		5653	1580.25	
5761	1580.00		5761	1580.00		5761	1580.00	
3311	1579.75		3311	1579.75		3311	1579.75	
129	1579.50		129	1579.50		129	1579.50	



5th May 2013	777	1591.50
	14201	1591.25
	14181	1591.00
	9938	1590.75
	4434	1590.50
	6041	1590.25
	9508	1590.00
	4334	1589.75
YH	9742	1589.50
	2414	1589.25
	5759	1589.00
ONH	1812	1588.75
	1820	1588.50
	1783	1588.25
IB Hi	5381	1588.00
VAH	20065	1587.75
	38075	1587.50
	48474	1587.25
	45988	1587.00
	30208	1586.75
	14796	1586.50
	8531	1586.25
	8701	1586.00
	5593	1585.75
	3972	1585.50
	6502	1585.25
	12702	1585.00
	14484	1584.75
	21291	1584.50
	21550	1584.25
	21651	1584.00
	35331	1583.75
	28560	1583.50
	24441	1583.25
	15085	1583.00
	13868	1582.75
	6400	1582.50
	6984	1582.25
Open	7426	1582.00
	6032	1581.75
	5102	1581.50
VAL	4402	1581.25
	6313	1581.00
W VAL	2423	1580.75



Volume Clusters/Profiles

- Volume Clusters are more meaningful on 'new ground'
- From the chart, you can often visualize what the profile will look like & Vice-versa. So why use profiles?

Where is support? Where is Resistance?

Chart



Profile

5
5
5
5
6
8
22000
23000
18000
16000
41000
43000
44000
42000
39000
18000
17000
45000
55000



Summary

- All order flow tools show basically the same information - the ability for market orders to consume liquidity.
- The consumption of liquidity is what allows price to move
- As price moves in one direction it moves into an area with little 'supporting' liquidity. This provides opportunity
- The use of Order Flow is subjective. It's not about 'setups' (e.g. Delta divergences) but more like reading a story.
- Order Flow works well within some rational framework within which you are looking for confirmation (e.g. value concepts/auction theory)



Q&A

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