

# TRADER HANDBOOK

## Competition Guidelines & Case briefs

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*\*These cases were developed by Rotman Interactive Trader by the Rotman School of Management. Commodities 1 and Liability Trading 3 were employed and/or modified. <http://rit.rotman.utoronto.ca/>*

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# IMPORTANT INFORMATION

## THE COMPETITION

There are two rounds of trading, each round presents a unique situation, with different risks and opportunities:

**Round 1:** Commodity Trading: Crude Oil Futures (COM1)

**Round 2:** Liability Trading: Dynamic Order Arrival (LT3)

Up to two members of each team can participate in a trading round, sharing the same terminal. Each member of the team must participate in at least one round. Each trading case will be 45 minutes in length. Round 1 consists of 4 sub-heats of ~8 minutes each, and Round 2 consists of 4 sub-heats of ~8 minutes each. Upon completion of a sub-heat, there will be an approximate 3-minute break while scores are saved and verified. Traders may leave during this break, but it is their responsibility to return before the break ends. The integrity of the market is based on the participants in that market. It is highly suggested that all participants be diligent about maintaining market liquidity. In the event of a network/power/server failure where 10% or more of the workstations are disconnected due to technical reasons, the case sub-heat will be rerun and the scores from that sub-heat will not be kept.

This is a professional business competition, so participants are expected to dress in **business formal attire**. Participants can be turned away if they are not dressed appropriately.

## TRADING WORKSHOPS (@THE BRIDGE LAB IC108)

All participants are **STRONGLY** recommended to attend the workshops. Traders should also practice the trading cases at home prior to the competition day.

### **Introduction to Case #1**

Sept 23, 2022 (Friday) @ 3:00pm - 4:30pm

### **Introduction to Case #2**

Sept 30, 2022 (Friday) @ 3:00pm - 4:30pm

## PRACTICE SERVERS

Practice servers will be made available starting on Sept 23, 2022(Friday) at 11:59 pm EST and will operate 24 hours a day 7 days a week until the start of the competition. Information on how to download and install the RIT is available [here](#). To join the practice server, please refer to the below server information. Remember that you can type in any username and password, and it will automatically create an account if it does not exist. If you have forgotten your password or the username appears to be taken, simply choose a new username and password to create a new account.

### **Case #1 Commodity Trading: Crude Oil Futures (COM1)**

Server: 142.1.102.55

Port: 10001

### **Case #2 Liability Trading: Dynamic Order Arrival (LT3)**

Server: 142.1.102.55

Port: 10002

## RANKINGS

Performance of each sub-heat is ranked by profit & loss (COM1) and the results of the evaluation tool(LT3). Trading round results are ranked by averaging sub-heat rankings, not averaging overall P&L. Overall team rankings are calculated by taking the average ranking of each round.

## COMPETITION DAY AGENDA

October 7, 2022(Friday)

3:45pm	Trading teams check-in
4:15pm	Opening speech
4:30pm	<b>Round 1:</b> Commodity Trading: Crude Oil Futures (COM1)
5:25pm	Break
5:40pm	<b>Round 2:</b> Liability Trading: Dynamic Order Arrival (LT3)
6:30pm	Networking mix and mingle
7:00pm	Closing Remarks & Award Ceremony

## PRIZES (FOR EACH WINNING TEAM MEMBER)

1 <sup>st</sup> place overall	Crystal Trophy
2 <sup>nd</sup> place overall	Certificate award
3 <sup>rd</sup> place overall	Certificate award
1 <sup>st</sup> place in Round 1	JBL portable speaker
2 <sup>nd</sup> place in Round 1	UTSC MGMT merch
3 <sup>rd</sup> place in Round 1	\$20 Amazon gift card
1 <sup>st</sup> place in Round 2	Google nest mini speaker
2 <sup>nd</sup> place in Round 2	UTSC MGMT merch
3 <sup>rd</sup> place in Round 2	\$20 Amazon gift card

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# ROUND 1 CASE BRIEF – COMMODITIES TRADING

## INSTRUCTIONS:

You've recently been promoted and are now in charge of the crude oil trading desk at a medium-sized energy hedge fund. Your fund's mandate is to generate trading profits by taking long and short positions in crude oil, based on your micro and macro view of geopolitical and crude-related news events.

Since your hedge fund just takes financial (speculative) positions on crude oil, you do not have access to any physical oil infrastructure (storage tanks, pipelines, tankers, etc.). Instead, your fund solely trades futures contracts for Crude Oil, which are a near-perfect proxy for crude oil<sup>1</sup>.

From your past experience, you've found that the market is primarily driven by news releases that provide insight into the future supply and demand for crude, and by government data releases that report the current actual supply and demand for crude. Forecasting how the market will react to these two types of releases is essential to generating profits in this market.

The Department Of Energy (DOE) releases their numbers once per week on Wednesdays. Running various regressions on historical data, you have found that the price sensitivity of crude to crude supply shocks is approximately \$0.10 per million barrels. That is, if there are 1 million more barrels of crude in storage than expected, the price will fall by approximately \$0.10. Vice versa if there is a 1 million barrel shortfall.

Crude oil reports are segregated into three categories, Crude, Gas, and Distillate. All three appear to have the same effect on the price of crude.<sup>2</sup>

Macro-economic, geopolitical, and crude-related news effects are much more difficult to quantify. With each release, the market typically reacts based on the following three factors:

1. Is the effect (disruption in supplies, extra use of crude, etc.) severe or minor?
2. Is the effect going to happen immediately or at a later date, if so how much later?
3. Is the effect going to have a long duration, or a short duration?

These three main factors will drive price changes with markets typically being more sensitive to severe, immediate, and long-duration effects, and less sensitive to minor, later dated, short duration effects. From your experience, significant effects can cause prices to move as much as \$3. Since the crude market is very efficient, prices will always reflect information very shortly after news has been released (within 60 seconds of trading time).

You will be trading for a month of calendar time and your goal is to generate trading profits by going long or short-selling crude oil when you believe market prices will appreciate or decline.

## Commodities Trading Simulation #1 – COM1

In this trading simulation, you can purchase or sell futures contracts for delivery of crude oil (CL-1F). If you sell more contracts than you currently own (have a negative position), you will be short and be required to buy-back futures at the end of the month. If you buy more contracts than you have sold, you will be long and will be required to sell futures at the end of the month<sup>3</sup>. Each contract represents 1000 barrels of crude oil.

You have a net trading limit of 100 contracts. This means that you cannot have a position larger than 100 contracts long or -100 contracts short. There is a fee of \$2.5/contract.

The case represents 1 month (4 weeks) of calendar time, and that month is simulated over 8 minutes of trading time (2 minutes per week).

#### DISCUSSION QUESTIONS AND FOLLOW UP:

- (1) Why is it a good idea to scale your position, and have larger positions when you believe there will be a large move in crude, and have smaller positions when you believe there will be a small move in crude?
- (2) What would happen if your long (or short) futures contracts weren't closed out automatically for you at the end of the month (at the delivery date)?
- (3) What is the profit (or loss) generated on a position that is long 5 contracts @ \$80.00, when the price of crude falls to \$75.00?
- (4) If there was an increase of 5 million barrels of crude in storage for a particular week, why is the price reaction different given an expectation that the increase would be 4 million barrels versus 6 million barrels?

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<sup>1</sup> Trading case F2 – Contango Trading elaborates on the pricing relationship between Crude Oil Futures versus Physical (spot) and demonstrates how arbitrage links the two markets.

<sup>2</sup> The price sensitivity of \$0.10 per million barrels is completely fictional and not related in any way to real market dynamics, which are much more complicated. Similarly there are typically differentials between the price sensitivities of Crude, Gas and Distillates. All of these simplifications are designed solely for the purpose of teaching the drivers of crude markets, but should not be applied to trading real markets.

<sup>3</sup> Having a positive (long) position of crude oil futures at the end of the month means you plan to take delivery of physical crude. Since you have no facilities to store said crude, you must sell your contracts before month end. Likewise if you are short, you must deliver crude which you cannot so you must buy contracts to cover the short position.

# Round 2 Case Brief – Arbitrage Trading

**INSTRUCTIONS:**

On your summer rotation to the sales and trading group, you’ve finally been moved to the liability trading side of the desk. The liability trading group is one of the most important and difficult parts of the trading desk because it functions to facilitate block trades that otherwise would be expensive to be matched. Unlike agency trading, the liability desk uses the firm’s capital to buy or sell (short) securities and generates profits and losses depending on the skill of the liability trader.

The facilitation need typically stems from buy side institutions that want to accumulate or dispose of a position with expediency. They would rather buy a block of shares at a premium, or sell shares at a discount, immediately, rather than waiting for a typical agency-type execution (VWAP/TWAP accumulation, dark pool, or block trades) to run its course.

Fall is just around the corner and the dreary trading volumes of the summer are a thing of the past. This morning a slew of earnings reports were released and you’re expecting a lot of portfolio repositioning throughout the next week which means it’s going to be a busy week on your trading desk.

Your responsibility is to review block trade requests for two different stocks, Crazy Incorporated (CRZY), and Tame Dining Co. (TAME). Institutional orders will be routed directly to your desk. These orders for CRZY or TAME will be to buy shares from you at a premium to the market price, or sell shares to you at a discount to the market price. The orders will be block-sized trades, and it is completely up to you whether you accept or decline the orders.

Your risk management team has provided you with the following memo:

	<b>TAME</b>	<b>Net</b>	<b>Gross</b>
Long 50,000	Long 25,000	75,000/100,000	75,000/250,000
Long 25,000	Short 25,000	0/100,000	50,000/250,000
Short (35,000)	Long 125,000	90,000/100,000	160,000/250,000

Throughout the trading case, you will receive 5 block trades and your objective is to accept the trades that provide an appropriate (and profitable) spread on the market price, then use market, limit, or marketable limit orders to unwind the positions. Given that you have no information pertaining to the direction of the market, you should not be speculating. The institutional orders that you receive may be profitable, but your ability to appropriately cover your positions associated with the institutional orders and manage your liquidity and market risks will determine your overall P/L.

Your risk management team has also instructed you to avoid any strategy that may contribute to front-running, which is the unethical and illegal practice of trading a security for your own account while taking advantage of the information contained in the pending orders from your institutional clients. Your risk management team is very concerned about front-running, as they know that the wrong behaviour of one employee can potentially

affect the reputation of the entire company. They sent you an email and attached a short summary of regulatory rules related to front-running defined by IIROC<sup>1</sup>:

*The regulatory rule provides that no Participant shall trade in equities or derivatives to take advantage of information concerning a client order that has not been entered on a marketplace that reasonably can be expected to change the prices of the equities or the related options or futures contracts.*

This means that buying or selling securities with advance knowledge of an institutional order that you received is an illegal practice that is expressly forbidden.

Last, in your job description as a liability trader, it is clearly stated that you should only trade to unwind positions that you accumulated as a consequence of transactions with institutional clients (accepted tender offers). You should not trade for any other reason (e.g., market making, following the trend, etc.). Your instructor or CRO has the option to penalize you for front-running and other speculative strategies, defined for this case as trading unrelated to unwinding accepted tender offers and not completely covering accepted tenders prior to the end of the trading period. For example, any return or loss at market close would be identified as speculation.

### Examples

While all institutional orders will have a favorable spread associated with them, market conditions will dictate whether an order should be accepted or declined. You should review the liquidity in the market at the time of accepting the order, as well as the price spread between the current market price and agreed upon block price. If there is insufficient liquidity, or the price spread is too small, the order should be declined as you will be taking on too much risk by accepting it.

The following is an example of an order you should accept:

An institution would like to sell 50,000 shares of CRZY to you at a price of \$9.90. Would you like to BUY the shares? (Accept/Decline)

<b>Order Book:</b>			
<b>Bid Volume</b>	<b>Bid Price</b>	<b>Ask Price</b>	<b>Ask Volume</b>
<b>8,000</b>	9.98	10.00	5000
<b>25,000</b>	9.95	10.03	3000
<b>7,000</b>	9.90	10.07	2000
<b>10000</b>	9.88	10.42	18000
<b>15000</b>	9.84	10.45	25000

In the above situation, you can accept the order (and buy 50k @ 9.90) and, other things equal, immediately sell 40,000 shares at prices of \$9.98, \$9.95, and \$9.90. This leaves 10,000 shares remaining, which you could sell at \$9.88 or use limit orders to try to unwind the remaining shares at a profit. The probability of profit from working this tender offer (institutional order) is extremely high given the generous price spread offered by the institution.<sup>2</sup>

In the above example, you may not want to sell 40,000 at the market, but instead, use limit orders to try to get better prices/fills. However, note the tradeoff between market risk and liquidity risk. Immediacy provided by

market orders reduces your exposure to market risk, that is, it allows you to cover at least part of the block trade at a profit prior to potential market price changes that could negate the profit inherent in the price spread associated with the tender offer. On the other hand, large market orders can result in price impact in illiquid markets, that is, push the price against you and consequently negate the potential profit. Being a successful liability trader requires you work with both market orders and limit or marketable limit orders to optimally manage both liquidity and market risk.

The following is an example of an order you should decline:

An institution would like to sell 50,000 shares of CRZY to you at a price of \$9.97. Would you like to BUY the shares? (Accept/Decline)

<b>Order Book:</b>			
<b>Bid Volume</b>	<b>Bid Price</b>	<b>Ask Price</b>	<b>Ask Volume</b>
<b>8,000</b>	9.98	10.00	5000
<b>25,000</b>	9.95	10.03	3000
<b>7,000</b>	9.90	10.07	2000
<b>10000</b>	9.88	10.42	18000
<b>15000</b>	9.84	10.45	25000

This situation is different because the institution is now providing a much smaller liquidity spread (a price closer to the market prices). If you agree to buy the shares at \$9.97, you currently have little chance that you will be able to profitably dispose of them (only 8000 shares are currently bid higher than the block price).

In this simulation, the stock price follows a random walk with a zero mean. Any forecasts of future market movements are purely speculative. Therefore, you should not guess whether the stock will go up, or go down, and use that guess as the basis for accepting the institutional orders. Rather you should base your decision on an evaluation of the liquidity risk associated with the order. You could analyze the orders in the limit order book and obtain information on whether there are currently more (fewer) buyers than sellers, which would signal more buy (sell) liquidity and potentially small price impact if large orders were to be traded in the market. However, it is important to distinguish this forecast of market liquidity as being very different from forecasting the exogenous changes in market price.

### Liability Trading Simulation #3 – LT3

During the LT3 simulation, you will receive 8 institutional orders (tenders) throughout the duration of the 8-minute trading simulation. The orders will take on the following form:

“An institution would like to SELL 75,000 shares of CRZY to you at a price of \$9.75. Would you like to BUY the shares from them?” (Accept/Decline)

Your responsibility is to evaluate the order, accept or decline it, and manage the risk of your trading positions appropriately. You have been given a net trading limit of 100,000 shares and a gross trading limit of 250,000 shares. There is a maximum order size of 25,000 shares for CRZY, and 10,000 shares for TAME when submitting a single order. There is a transaction fee of 2 cents per share.

Please note that you have 30 seconds to accept/decline the tender offer from the institutional client. During those 30 seconds, you should not trade the other side of the market otherwise you may be penalized. Following the example above, if you are going to buy the 75,000 shares of CRZY from the institutional client, you should start selling the shares from your account only after having accepted the order from your client. If you start selling before, you are front-running and, as discussed above, this is illegal, unethical and your instructor may decide to penalize you.

The 8 minutes of trading will simulate one week of calendar time. In this time the stocks are expected to move as much as 10-15% up or down.

Please note that we use the term “Institutional Orders” and “Tender Offers” interchangeably.

Discussion Questions and Follow Up:

- (1) Should you automatically accept all institutional orders?
- (2) When evaluating an institutional order, what information is important to evaluate whether or not to accept or decline the order?
- (3) What information may be gleaned from the limit order book when executing your strategy? What types of strategies can be employed to exploit this information?

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<sup>1</sup>From “Universal Market Integrity Rules” from IIROC (Investment Industry Regulatory Organization of Canada): [http://www.iiroc.ca/industry/rulebook/Documents/UMIR0401\\_en.pdf](http://www.iiroc.ca/industry/rulebook/Documents/UMIR0401_en.pdf)

<sup>2</sup>Regulations in some countries prevent a block of shares from trading outside the NBBO. The trading desk will buy/sell shares on the open market; as a result the price will move. If there is enough liquidity, the order will be traded at a better price compared to the one specified in the block; if not, the trader will cross the order at the specified price in the block. The regulatory rules of how trades like these are handled change frequently.

<sup>3</sup>For example, if there are many active bidders in the order book, and few active sellers, one can consider that there are currently more buyers than sellers and once those buyers conclude their buying the price will be higher. On the surface, this is accurate, however the picture becomes very muddled when/if traders begin to “game” the information system and submit bids/offers to hide their true intentions. In real markets, algorithms are continually submitting “fake” bids and offers to prevent others from determining whether they are buying or selling shares.