

LUNA: A Role Play Game for Learning Incoterms 2000

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ABSTRACT

Incoterms 2000 is the standard used for setting the conditions of commercial sales between nations. It is a subject often misunderstood or ignored in most international business or logistic courses. LUNA is a competitive three party role-play game (RPG) that calls on undergraduate students to develop and evaluate pricing and terms of sales for an export transaction based on Incoterms 2000. The exercise is divided into individual and group phases. The game's objective is to enhance the students' understanding of the obligations that are embedded in Incoterms 2000 as well as derive proper pricing for a given sales terms. By using a two phase process the exercise attempts to address the RHINO or free rider problem that is often observed with an in class RPG. The game has been used successfully both in the classroom and online through Blackboard

KEYWORDS: Incoterms 2000, international logistics, role-play, RHINO, free rider

INTRODUCTION

Among the challenges in conducting export sales is agreeing on the details for transporting goods across borders. A typical export will move through four storage facilities (the domestic carrier's facility, the export terminal, the import terminal and the buyer's receiving dock) and change hands least five times (the shipper, the domestic ground carrier, the international carrier, the ground carrier in the import nation and finally the buyer). Either the seller or the buyer needs to make arrangements for transport

and import customs clearance. The two parties must also agree on which has responsibility for the goods in case the shipment is damaged, lost or stolen.

For centuries these issues were handled by tradition and standard practice, which often varied from nation to nation. Disputes would arise when ever there were differences in the understanding of the obligations. The International Chamber of Commerce (ICC) has addressed the difficulty by establishing a common set of rules that apply to all international sales. The first set of rules, called "Incoterms 1936" short for international commercial terms, was published in 1936. The standard has been updated six times since 1936, the last being in the year 2000, the current standard is called Incoterms 2000. The United Nations Commission on International Trade Law recognizes Incoterms 2000. This makes the it a worldwide standard and legally binding on most parties conducting international trade (ICC publishing. 1999).

The 1990 revision organized the thirteen different terms into four categories, known as Group E, Group F, Group C and Group D. The groups are arranged in order by which party has the most obligations for the goods being moved. Starting with the single term in the Group E, referred to as EXW for Exit Works, the seller is only responsible for preparing the goods for international shipment and making the correct paperwork and goods available for pick up by the buyer. There are three terms in Group F that adds the additional obligation of ground transport to the export terminal to the seller's responsibilities. Once delivered to the export terminal (typically a port or an airport) obligations shifts to the buyer. The four terms in the C Group requires the seller to add international carriage to the list of obligations. So the seller must now arrange and pay for

Table 1 Incoterm 2000 by Groups and Form of Transportation

I. Any Mode of Transport

<i>Group E</i>	<i>EXW</i> Exit Works (...named place)
<i>Group F</i>	<i>FCA</i> Free Carrier (...named place)
<i>Group C</i>	<i>CPT</i> Carriage Paid To: (... named place of destination)
	<i>CIP</i> Carriage and Insurance Paid To: (...named place of destination)
<i>Group D</i>	<i>DAF</i> Delivered At Frontier (...named place)
	<i>DDU</i> Delivered Duty Unpaid (...named place of destination)
	<i>DDP</i> Delivered Duty Paid (...named place of destination)

II. Maritime and inland waterway transport only

<i>Group F</i>	<i>FAS</i> Free Alongside Ship (...named port of shipment)
	<i>FOB</i> Free on Board (...named port of shipment)
<i>Group C</i>	<i>CFR</i> Cost and Freight (...named port of destination)
	<i>CIF</i> Cost, Insurance and Freight (...named port of destination)
<i>Group D</i>	<i>DES</i> Delivered Ex Ship (...named port of destination)
	<i>DEQ</i> Delivered Ex Quay (...named port of destination)

transport by ship, plane or ground transport across borders. In addition, two of the C Group terms also obligate the seller to arrange insurance on behalf of the buyer (the seller simply provides assistance in arranging insurance. The buyer will still have to pay for insurance; he just doesn't have to seek out an insurer). The D Group of terms requires the seller to take on most of the transport obligations. These five different terms vary from simply paying to land the goods in the receiving facility abroad (customs is left to the buyer) to taking care of all cost and obligations of getting an item to buyer's receiving dock overseas (including paying for customs).

Specific Incoterms are used only for movement by water. Other terms are only for ground or air transport. Mismatching an Incoterm to a mode of transport will negate the intended agreement. The error will cause difficulties for the carrier, the insurer and the importer. Below is a table based on information provided by the ICC on the specific terms and the correct form of transportation.

In practice, both the seller and buyer need to pay close attention to the Incoterm that is quoted as part of a sale. As the terms put more obligation on the seller he will have to charge more to cover the extra cost. An error will mean the seller may cut into his own profits or miss a sale by pricing a sales offer too high.

The LUNA (RPG) was developed to allow students to negotiate international sales terms using Incoterms 2000. This article describes the elements of the LUNA game. It discusses the reasoning for the game's design. We will then review the process of conducting the game and the objectives to be met at each stage. Finally, discussion is provided on adapting the game for a course offered through Blackboard.

Luna Fresh Fruit, Overview

Motivation for Creating the Game

The traditional logistics textbook typically includes a short discussion of Incoterms (for example Stock and Lambert, 2001). In recent years more books specifically written on international logistics have been published. *International Logistics* by Pierre David dedicates a chapter to Incoterms 2000 (David, 2004). Douglas Long's *International Logistics: Global Supply Chain Management* places Incoterms 2000 in a chapter on global sourcing and trade. Another book, *International Logistics* published in 2002, uses Incoterms 1990 and provides a decision chart for sellers to assist them with using the terms (Wood, Barone, Murphy, Wardlow, 2002). None of these examples provide questions or exercises for students to work with Incoterms.

This short list of recent books demonstrates that Incoterms 2000 is important enough to be included in recent publications. A class using one of these books is going to have a limited understanding of how Incoterms 2000 relate with cost of transportation. Most likely students would answer questions on terms and definitions and study some of the details of the terms. The student is not likely to understand how terms of sales can be a tool for compete for international customers.

LUNA was developed to have students work directly with Incoterms 2000 in order to better comprehend the link between proper pricing and the terms of an international sale. The exercise is intended as a complement to the educational material

on the subject and to build the student's ability to apply that information to a professional setting. Since Incoterms 2000 lend itself easily to a competitive team based game. The terms format provides structure for easy rule development, as well as flexibility in executing of the game.

The second motivation for creating the exercise was to engage students with course content and provide an alternative learning experience. The game format reduces the distance students experience towards course material and calls on them to apply the concepts to a structured situation. LUNA provides an opportunity for the instructor to use a role play game (RPG) that can be a rewarding experience for students who prefer this mode of learn. The game's two phase format allows some accommodation to those students who prefer to work alone. It also requires that students set a collective goal for their group and determine an approach for competition as a group. Using the recommended process for conducting the game will provide a student's work to be reviewed approximately five times by either the instructor or fellow students.

Traditional lecture and testing remains an important means to develop understand and to measure the student's success in learning about Incoterms 2000. LUNA acts as a complement to these forms of conveying information and allows the instructor to reinforce the key aspects of the topic. The instructor has the opportunity to observe a student's level of understanding and when necessary correct the student's conception of the material immediately during the exercise.

A final motivation for the design of the game was to minimize the free rider or RHINO problem (Really Here In Name Only)(Lundy, 1991) without completely reliving students of addressing this challenge within their groups. This difficulty arises when a student contributes little to a group exercise while relying on the group to carry him through the exercise. The two phase approach used in LUNA requires that each individual student reach a set level of preparation before being allowed to participate in the second phase. An instructor is left to determine how to bring individual students into alignment with the work done by their groups. This may include barring a student from participating in the second phase of the game and not accepting any submission by the student after the negotiations have started between the groups.

Description of the LUNA game

Overview

LUNA is a two-phase three-team game that requires two teams (seller groups) to offer bids for the sale of refrigeration units to a third team (buyer group). The game is competitive requiring the buyer group to evaluate competing offers, seek alternatives from each group and ultimately accept one of the offers. The number of offers and the time for conducting each phase in the exercise are left to the instructor to define. Typically, the negotiation element can be accomplished within a one hour period in the classroom. If conducted online at least three days are recommended for completion of negotiations.

For larger classes the instructor with access to Blackboard may want to split the class in half and conduct the exercise online with three groups and in the classroom with another three groups. This would accommodate a 30-student class where the instructor would form six groups of five 5 students each. Further

Exhibit 1 Incoterms 2000 Matrix

 INCOTERMS 2000 Responsibility Matrix - Obligations of Importer (Buyer) and Exporter (Seller)													
"E" Departure		"F" Main Carriage Unpaid			"C" Main Carriage Paid				"D" Arrival				
Service	EXW <small>Ex-Works</small>	FCA <small>Free Carrier</small>	FAS <small>Free Alongside Ship</small>	FOB <small>Free Onboard</small>	CFR <small>Cost of Goods & Freight</small>	CIF* <small>Cost Insurance & Freight</small>	CPT <small>Carriage Paid To</small>	CIP* <small>Carriage Insurance Paid To</small>	DAF <small>Delivered At Frontier</small>	DES <small>Delivered Ex Ship</small>	DEQ <small>Delivered Ex Quay</small>	DDU <small>Delivered Duty Unpaid</small>	DDP <small>Delivered Duty Paid</small>
OBLIGATION AND CHARGES													
Warehouse Services	Seller	Seller	Seller	Seller	Seller	Seller	Seller	Seller	Seller	Seller	Seller	Seller	Seller
Export Packing	Seller	Seller	Seller	Seller	Seller	Seller	Seller	Seller	Seller	Seller	Seller	Seller	Seller
Loading at Point of Origin	Buyer	Seller	Seller	Seller	Seller	Seller	Seller	Seller	Seller	Seller	Seller	Seller	Seller
Inland Freight	Buyer	Seller	Seller	Seller	Seller	Seller	Seller	Seller	Seller	Seller	Seller	Seller	Seller
Port Receiving Charges	Buyer	Seller	Seller	Seller	Seller	Seller	Seller	Seller	Seller	Seller	Seller	Seller	Seller
Export Clearance/Handling	Buyer	Seller	Seller	Seller	Seller	Seller	Seller	Seller	Seller	Seller	Seller	Seller	Seller
Ocean/Air Freight	Buyer	Buyer	Buyer	Buyer	Seller	Seller	Seller	Seller	Seller	Seller	Seller	Seller	Seller
Charges at Foreign Port/Foreign Airport	Buyer	Buyer	Buyer	Buyer	Buyer	Buyer	Buyer	Buyer	Buyer	Buyer	Seller	Seller	Seller
Customs Clearance	Buyer	Buyer	Buyer	Buyer	Buyer	Buyer	Buyer	Buyer	Buyer	Buyer	Buyer	Buyer	Seller
Customs Duties	Buyer	Buyer	Buyer	Buyer	Buyer	Buyer	Buyer	Buyer	Buyer	Buyer	Buyer	Buyer	Seller
Delivery Charges to Final Destination	Buyer	Buyer	Buyer	Buyer	Buyer	Buyer	Buyer	Buyer	Buyer	Buyer	Buyer	Seller	Seller

* Sellers obligation to provide & pay for at least minimum insurance.

Retrieved April 20, 2008 from http://www.emotrans.com/emo-usa/forms_folder/emo_incoterms_2000.pdf

discussion of conducting LUNA through Blackboard is provided below. The rest of the discussion in this section focuses on conducting LUNA in the class room.

Before the exercise begins students are randomly assigned to one of the three groups. Each student is provided a general description of the game and each team receives specific information on the cost structure (both the retail price and transportation cost) for the company they represent. The two seller groups have specific data on both the transport time and cost for their company for each leg of the journey. The buyer group also receives an estimate of cost for transport from the United States and specific information on the cost of landing and moving goods in the hypothetical buyer nation. These details may be found at the end of this paper. While all groups are provided the same background, each group has a different brief on their company and the cost for using either ocean or air transport.

During the first phase students are assigned the task of deriving prices in three of the four Incoterm 2000 groups; F-Group, C-Group and D-Group. Students are to do this work individually and they are provided a table of Incoterms 2000 such as the one given in Exhibit 1. This is matrix of Incoterms 2000 obligations that may be found at the Emo Trans website. Students are encouraged to create a similar matrix in Excel so that they can easily make corrections and adjustments to their price quotes. The International Chamber of Commerce also provides a wall chart of Incoterms 2000 that an instructor can

introduce to the class. This wall chart can be found at <http://www.iccwbo.org/incoterms/wallchart/wallchart.pdf>.

Each individual student is required to derive a price quote for ocean and air transport in the three Incoterm 2000 groups. So the student must derive three quotes for ocean and three quotes for air. The student also must derive price quotes for insured term (note that CIP terms can be used for any mode of transport). Altogether, each individual student must derive and submit to the instructor seven different price Incoterm 2000 combination. Students on the same team are encouraged to work on different price quotes within each Incoterm 2000 group. This makes more offers available to the group when the exercise moves to the second phase of the game.

The instructor then reviews each student's set of quotes and either approves the student to move on to phase-two and work with their group or the student is directed to make corrections to his or her bids. It is easier for the instructor to identify error in calculating offers if students submit their Excel worksheet. Each student that completes the first phase are also given half the points for the exercise. This serves as a means to assure students that even if their fellow group members opt out of the second phase, their individual work has been awarded a portion of the points. By awarding only half of the assignment grade at the end of first phase holds students accountable for their group's performance when the game enters the second phase.

The second phase starts when each group is directed to determine a master set of seven price quotes. This is done to insure the groups are minimally prepared for negotiations and to

force consensus within the groups. Groups are encouraged to have alternative details on hand to supplement the offer their group makes to the buyer group. Alternatives may include additional services, speed of delivery, reputation of the firm, qualities of the product that may provide the buyer group enough additional benefit that the entire offer is accepted.

The buyer group is directed also have a group set of possible quotes. These are to be used as a basis for comparing the quotes from the two selling groups during negotiations. The buyer group is also instructed to rank the importance of other qualities are to their final decision. This provides them an alternative measure for evaluating the various offers that are generated during negotiation. If the buyer group has difficulty settling on one offer during negotiations then these details may provide the additional element that makes a given offer the most desirable. It also lends an element of reality to the game where price is important but may not be the final factor that wins the foreign sale. The instructor should recommend that all three groups determine a lead negotiator and to have all their offers and non-price details ready for use as counter bids during this pre-negotiation phase.

Negotiations can begin once the three groups submit their consensus sets of offers with additional non-price details to the instructor. Negotiations start in earnest when the instructor directs the two seller groups to make their initial offers to the buyer group. The buyer group is directed to evaluate the bids and reply to each group on how to improve the offer. The buyer group should be examining the offers based on price but also on the other non-price details. The buyer group should indicate to the seller groups if they need to improve price, speed of delivery or if there are additional services or benefits that would generate a more desirable offer.

The buyer groups should also be directed to look for offers that are underpriced for the sales terms in the quote and if possible accept these quotes. The seller teams should be warned to be careful and not lose money on the sale by under pricing themselves and that their grade in the second phase will be reduced for making this error.

The seller groups may put their offers on paper and hand them over to the buyer group. The offers may also be made vocally so that all class members know what the competing team are submitting to the buyer group. The buyer group may give feedback to the groups in the open class room or have members of their group met with the seller group and describe how the next offer may be improved.

At the end of the second phase the buying team declares which offer has been accepted and why it has settled on that offer. The two selling teams are directed to submit a written list of the offers they made during negotiations and a description of how they adjusted their offers during the game. All the submissions are checked by the instructor for pricing accuracy and assessment of all of the conditions on the sale. Group performance is evaluated based on the number of offers generated, the details of those offers, the correct pricing and how well the groups incorporated the other details in the process.

Phase One Information and Direction

As outlined above each team receives the following set of details and directions for Phase One of the game.

At a recent trade show in the nation of Salinca in Southeast Asia the Luna Fresh Fruit Company (LUNA) was seeking new refrigeration units to handle its lines of frozen exotic fruits. LUNA is looking for large wall-in units that are self contained, easy to set up and low maintenance. LUNA is seeking a total of ten units. The first unit is to be delivered within 2 months of the sale with 1 unit a month to follow over the next year. Typical, walk-in units of this type sell domestically in the US for \$100,000. LUNA understands that there will be additional cost when importing the item from overseas. Five American companies contacted LUNA and two were asked to further demonstrate their products. LUNA will pay for the sale in US dollars.

Arctic Zone, Inc. (ARTICZONE) is based in Bettendorf, Iowa and specializes in food refrigeration units (particularly pork and beef). In the Midwest ARTICZONE's main unit is priced at \$92,000, however typical shipping cost from Bettendorf adds another \$3,000-\$15,000 (depending on the Incoterms used). ARTICZONE is a family owned business and this will be the first large international sale that ARTICZONE has actively sought. ARTICZONE is about 1,000 miles from the nearest ocean port and close to 400 miles from the nearest international airport that handles large cargo.

True Frost Corp. (TRUEFROST) is a Sacramento, California based company that has a long tradition of serving the fruit and vegetable growers of Western region of the United States. While this has been a steady market for TRUEFROST, in recent years management has noticed that more fruit is being imported to the United States from overseas. TFC has recognized the changes and they have been actively soliciting overseas business for 14 years. TRUEFROST's overseas clients have been fruit exporters and distributors in major markets in Europe and Asia. To sell units to these customers TRUEFROST has focused on quality of product. TRUEFROST's units tend to cost about \$100,000 on average with roughly the same added international transport cost. TRUEFROST is only 100 miles from the nearest cargo Airport (San Francisco) and container port in Oakland.

Both companies demonstrated their best units to Luna's executives after the trade shop and each was asked to negotiate for the sales contract on the 10 units that LUNA is seeking.

Directions for the Buying Team LUNA

The following details and directions are provided to the LUNA buying team.

LUNA's executives favor the high quality units built by TRUEFROST, however, the company is also price sensitive and they must seek the best pricing. Speedy delivery is also important since LUNA would like to get this new line frozen exotic fruits launched as soon as possible. The executives have only a vague idea of ground transport cost in the United States. They also do not have exact information on terminal charges for the harbors or airports that the manufacturers would use. LUNA's managers do have detailed cost figures

for landing goods in Solinca and ground transport in Solinca.

LUNA is to focus on the purchase of 10 refrigeration units for delivery over the next year (one unit per month at a minimum). It is important that units be delivered on time and they are all operational within the next year.

LUNA wants to keep the cost per unit at roughly \$105,000 – a lower overall price than this is highly desirable.

LUNA is interested in having the shipper responsible for as much of the shipping and handling cost as possible.

LUNA is roughly 25 miles from the main harbor and airport. There is only a road connection, with no access to rail from either the harbor or airport.

Salinca Based Cost

- 1.) Landing Fees \$250
- 2.) Import Taxes 3%
- 3.) Road transport (from harbor or airport to LUNA) \$1.00 per mile per unit shipped.

Estimated Cost for Shipments from the US

- 1.) Airfreight – about \$8,000 per mile per unit shipped
- 2.) Ocean freight about \$3,000 per mile per unit shipped
- 3.) Road cost – Unknown

Insurance

- 1.) For Ocean freight is \$1,200
- 2.) For Airfreight is \$800

Assignment

You are to generate a master set of price quotes for different Incoterm 2000s conditions.

- 1.) Create prices estimate for ocean carriage for F-Group, C-Group and D-Group – so 3 price quotes- one each for F, C and D Group terms
- 2.) Create price estimates for air carriage for F-Group, C-Group and D-Group – so 3 prices quotes - one each for F, C and D Group terms
- 3.) Create a price quote for insured terms either ocean or air carriage – so 1 price quote using either CIF or CIP for either ocean or air carriage.

You are to submit these 7 price quotes to the instructor by (due date provided by instructor).

Your work must be approved by the instructor before you are allowed to move to the second phase of this assignment. Late or non-submission of phase one of this assignment may mean that you will not be allowed to participate in the second phase and suffer an F grade on the second phase of the assignment.

Directions for the Selling Teams

ARTIC

The following details are provided to the ARTIC Selling Team

Since this is the first time ARTIC has sought business overseas, it is going into the transaction lacking TRUEFROST's international experience. ARTIC's management view these sales as critical to company's future. The knowledge and reputation gained will be an important step towards establishing an international identity.

The following are the primary goals that ARTIC seeks to achieve through a sales agreement with LUNA.

- The final net (after cost of the shipment) should be as close as possible to \$100,000. ARTIC can not

agree to an offer that will lose the company money (i.e. a minimum of \$92,000 after cost of shipment).

- Limit the liability of the company without losing the sale (since you don't know what risk might be present in LUNA's home country).
- Contract to sell all 10 units.

The nearest airport that can handle an international shipment to Salinca is O'Hare in Chicago. The road distance is 350 miles to O'Hare. The major port for overseas shipping is New Orleans, LA which is about 1,050 miles from ARTIC.

Shipping Options / Cost (Time frame) Inland US and International From the US

- 1.) Road transportation \$2.00 per mile (overnight delivery)
- 2.) Air transport \$1,500 terminal processing fee and \$10,000 carriage per unit (3 days)
- 3.) Ocean transport \$500 terminal processing fee and \$3,000 carriage per unit (3 weeks)

Salinca Based Cost

- 1.) Landing Fees \$250
- 2.) Import Taxes 3%
- 3.) Road transport (from harbor or airport to LUNA is about 25 miles) \$5.00 per mile per unit shipped

Insurance Cost

- 1.)For Ocean freight is \$1,200
- 2.)For Airfreight is \$800

Assignment

You are to generate a master set of price quotes for different Incoterm 2000s conditions.

- 1.) Create prices estimate for ocean carriage for F-Group, C-Group and D-Group – so 3 price quotes- one each for F, C and D Group terms
- 2.) Create price estimates for air carriage for F-Group, C-Group and D-Group – so 3 prices quotes - one each for F, C and D Group terms
- 3.) Create a price quote for insured terms either ocean or air carriage – so 1 price quote using either CIF or CIP for either ocean or air carriage.

You are to submit these 7 price quotes to the instructor by (due date provided by instructor).

Your work must be approved by the instructor before you are allowed to move to the second phase of this assignment. Late or non-submission of phase one of this assignment may mean that you will not be allowed to participate in the second phase and suffer an F grade on the second phase of the assignment.

TRUEFROST

The following details are provided to the TRUEFROST selling group

Though your company has not done business in this region of Asia before, TRUEFROST has done considerable business in other parts of the world. The sales to LUNA are key to the company's future in this part of the world and this sale is expected to generate more in this part of the world. .

The following are the primary goals that TRUEFROST seeks to achieve through a sales agreement with LUNA.

- The final net (after cost of the shipment) should be as close as possible to \$100,000. TRUEFROST can not agree to an offer that will lose the company money (i.e. a minimum of \$100,000 after cost of shipment).
- Limit the liability of the company without losing the sale (since you don't know what risk might be present in LUNA's home country).
- Contract to sell all 10 units.

The nearest airport that can handle an international shipment to Salinca is 100 miles away in San Francisco International Airport and the nearest Container port is 120 miles away in Oakland.

Shipping Options / Cost (Timeframe) Inland US and International From the US

- 1.) Road transportation \$2.00 per mile per unit shipped (overnight)
- 2.) Air transport \$1,800 terminal processing fee and \$8,000 per unit shipped (3 days)
- 3.) Ocean transport \$750 terminal processing fee and \$1,000 per unit shipped (2 weeks)

Salinca Based Cost

- 1.) Landing Fees \$250
- 2.) Import Taxes 3%
- 3.) Road transport (from harbor or airport to LUNA is about 25 mile) \$5.00 per mile per unit shipped

Insurance Cost

- 1.) For Ocean freight is \$1,200
- 2.) For Airfreight is \$800

Assignment

You are to generate a master set of price quotes for different Incoterm 2000s conditions.

- 1.) Create prices estimate for ocean carriage for F-Group, C-Group and D-Group – so 3 price quotes- one each for F, C and D Group terms
- 2.) Create price estimates for air carriage for F-Group, C-Group and D-Group – so 3 prices quotes - one each for F, C and D Group terms
- 3.) Create a price quote for insured terms either ocean or air carriage – so 1 price quote using either CIF or CIP for either ocean or air carriage.

You are to submit these 7 price quotes to the instructor by (due date provided by instructor).

Your work must be approved by the instructor before you are allowed to move to the second phase of this assignment. Late or non-submission of phase one of this assignment may mean that you will not be allowed to participate in the second phase and suffer an F grade on the second phase of the assignment.

Phase Two Directions for All Teams

Pre-negotiation Assignment

Now that you and members of your team have successfully completed Phase One your group must come to an agreement on both price quote you will use for negotiations and key details that can be added to your offers that will help achieve your company's objectives.

- 1.) As a group derive a master set of seven bids that will be used by your group during negotiations.
 - F-Group – derive a bid based on transport by ship

- derive a bid based on transport by air
- C-Group – derive a bid based on transport by ship
 - derive a bid based on transport by air
 - derive an insured bid (either for ship or air transport)
- D-Group – derive a bid based on transport by ship
 - derive a bid based on transport by air
- CIF or CIP – one quote for either ocean or air transport

2.) For the seller groups also include an extra statement on a non-price detail your group may use to enhance the desirability of the sale. For example, you may want to stress quality, experience, ability to innovate or speed of delivery as an added element that might give your team an advantage in negotiations.

For the buyer group provide a list of the non-price priorities that you also want to achieve from the sale. For example you may want customer service, better product performance, or speed of delivery as a critical element that may make a higher price more acceptable.

Once this material has been submitted to the instructor we will schedule the final negotiations and complete the second phase of this assignment.

Tables 2 through 5 are provided so that the instructor can cross check the bids provided by students and identify where the individual student has erred in his work during Phase One. Any modification to the conditions of the original exercise by the instructor requires adjustment to these solution tables.

Feedback and Grading

As discussed above the instructor is provided three opportunities to provide feedback to the student in LUNA. Starting with the end of Phase One each student receives a grade and approval to advance to the second phase of the game. Tables 2 through 5 are provided here so the instructor can check the work submitted by students. The second opportunity to check student work occurs when the three groups each present the set of quotes they will be using during negotiations. The instructor should also take the opportunity verifying the non-price details have also been agreed upon by the group members. This second feedback opportunity gives the instructor a chance to observe student perpetrations prior to negotiations and to correct or recommend final details before interaction between the groups. The final opportunity for feedback is at the end of the game. The instructor should discuss with students how the negotiations unfolded, the basis for the choices they made and any improvements they would recommend for future offerings.

The instructor has some latitude on grading the assignment. Originally, LUNA was worth 10% of the course grade with 5% value attached to phase one and 5% to phase two. This approach insures that an individual student is not penalized if the rest of the members of a group do not provide good work, yet it also holds members responsible for the product that their group submits. Aspects of the final grade for the LUNA may be based on the work done in the first set of price quotes, the group set of price quotes, the quality of the negotiation, or the final sets of bids that are submitted at the end of the game.

A two-grade approach also attempts to discourage free rider or RHINO responses from students. All students are held responsible for completing the first set of bids individually.

Students receive no credit for participation in the second phase unless they complete the first. In grading by phases the instructor makes sure students accomplish a minimum level of work on Incoterms 2000 while still holding them responsible for the work accomplished by their groups. The two phase approach also allows the instructor to exclude those students who choose not to participate. This reinforces to students that their individual work matters as does their effort with the group.

ADAPTATION FOR BLACKBOARD OFFERING

LUNA lends itself well to use within Blackboard offering. The game has been offered successfully online using Blackboard's discussion board function. The game is set up the same way and conducted in two phases.

As previously described above the students are divided into three groups. For larger classes two sets of three groups may be used. The instructor then creates separate discussion board threads for the three groups. Each discussion thread must be set to allow access to group members only. This is done by the instructor by using the manage function within each discussion thread. Note that this function allows the instructor to exclude those group members who have not completed phase one. This prevents students prone to free riding from gaining access to the work of their group members who have completed phase one.

The instructor starts the exercise by e-mailing the game background and the details and instructions for each group to the students. Once the exercise enters the pre-negotiation stage students should be encouraged to use the group discussion thread to develop the master set of bids. Group members may want to communicate using e-mail as an alternative. The instructor may want to monitor the group discussion threads in order to gauge the qualities of a student's contribution to the group. If an instructor follows this suggestion the students should be made aware that their postings are being monitored for grading purposes. As with the regular in class offering the instructor should direct students to determine a lead negotiator and to have their alternative offers and non-price details prepared. The instructor should have all three groups submit this work prior to starting negotiations.

Once these are received and reviewed the instructor conducts the negotiation component by starting a fourth discussion board thread. The instructor informs all groups that the negotiations thread is open and that the two seller groups are to post their first offers. The buyer group is instructed to review the offers and post their comments on how the offers could be improved to be more acceptable. The negotiations can be left to proceed over three days or more. The instructor should check in on negotiations if necessary and either spur more action or provide recommendations to the groups. All groups should be encouraged to continue to use their individual group discussion threads as a place to post suggestions or comments privately among group members. If necessary the instructor may want to put a time limit on the game in order to draw the exercise to a conclusion. As is done when conducted in class, all groups submit the last offer made and or accepted, the strategy followed during negotiations and any feedback on the exercise for improvements.

CONCLUSION

An understanding of international logistics is becoming a necessary component to competitiveness among businesses today. More courses and publications are being created on the subject and Incoterms 2000 part of the curriculum. Traditional means of lecture may limit a student's understanding of how Incoterms 2000 are actually used in international transactions. Fortunately, international terms of sales lend themselves well to use in role play game exercise.

LUNA was developed to provide students an opportunity to create more realistic international sales bids by incorporating Incoterms 2000. The game is highly flexible and can be adapted to different sized classes. It lends itself well to use online through Blackboard. The game provides multiple opportunities for feedback to students through out the exercise. LUNA's two stage approach is designed to discourage free rider or RHINO tendencies among students and to insure all students and their groups are properly prepared before advancing in the game phases. The exercise has been offered successfully in a number of in class and on line courses. The directions and game process provides opportunity for instructors to adapt the game to their teaching approaches.

REFERENCE

- David, Pierre, (2004) *International Logistics*, Cincinnati, OH, USA: Atomic Dog Publishing,
- International Chamber of Commerce, (1999) *Incoterms 2000*, Paris, France: ICC Publishing, Inc.,
- Lundy, Jane, *Cognitive Learning from Games: Student Approaches to Business Games.*, Studies in Higher Education, (1991) Vol. 16, Issue 2
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Solution Matrixes

Below are solution keys of price quotes for all three groups.

Table 2 LUNA Solution For Bid from ARTIC

For Ocean

	EXW	FCA-NA	FAS	FOB	CFR	CIF	CPT	CIP	DAF	DES	DEQ	DDU	DDP
Start Price	\$90,000		\$90,000	\$90,000	\$90,000	\$90,000	\$90,000	\$90,000	\$90,000	\$90,000	\$90,000	\$90,000	\$90,000
Inland													
Exit Port													
Int'l					\$3,000	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000
Dest. Port											250	250	250
Customs											\$2,700	\$2,700	\$2,700
Inland											\$25	\$25	\$25
Insurance						1,200		1,200					
Estimated													
Cost	\$90,000		\$90,000	\$90,000	\$93,000	\$94,200	\$93,000	\$94,200	\$93,000	\$93,000	\$95,950	\$95,950	95,975

For Air

	EXW	FCA	FAS-NA	FOB-NA	CFR-NA	CIF-NA	CPT	CIP	DAF	DES-NA	DEQ-NA	DDU	DDP
Start Price	\$90,000	\$90,000					\$90,000	\$90,000	\$90,000			\$90,000	\$90,000
Inland													
Exit Port													
Int'l							\$8,000	\$8,000	\$8,000			\$8,000	\$8,000
Dest. Port												250	250
Customs													\$2,700
Inland												\$25	\$25
Insurance								800					
Estimated													
Cost	\$90,000	\$90,000					\$98,000	\$98,800	\$98,000			\$98,250	\$100,950

Table 3 LUNA Solution For Bid from TRUEFROST

For Ocean

	EXW	FCA-NA	FAS	FOB	CFR	CIF	CPT	CIP	DAF	DES	DEQ	DDU	DDP
Start Price	\$112,000		\$112,000	\$112,000	\$112,000	\$112,000	\$112,000	\$112,000	\$112,000	\$112,000	\$112,000	\$112,000	\$112,000
Inland													
Exit Port													
Int'l					\$3,000	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000
Dest. Port											250	250	250
Customs													\$3,360
Inland											\$25	\$25	\$25
Insurance						1,200		1,200					
Estimated													
Cost	\$112,000		\$112,000	\$112,000	\$115,000	\$116,200	\$115,000	\$116,200	\$115,000	\$115,000	\$115,250	\$115,250	\$118,610

For Air

	EXW	FCA-NA	FAS-NA	FOB-NA	CFR-NA	CIF-NA	CPT	CIP	DAF	DES-NA	DEQ-NA	DDU	DDP
Start Price	\$112,000	\$112,000					\$112,000	\$112,000	\$112,000			\$112,000	\$112,000
Inland													
Exit Port													
Int'l							\$8,000	\$8,000	\$8,000			\$8,000	\$8,000
Dest. Port												250	250
Customs												\$3,360	\$3,360
Inland												\$25	\$25
Insurance								800					
Estimated													
Cost	\$112,000	\$112,000					\$120,000	\$120,800	\$120,000			\$123,610	\$123,610

Note: LUNA does not have access to ground transport cost in the United States for either seller. The prices given in these tables maybe be lower than student estimates since they will have to estimate this cost in their offer calculations.

Table 4 Solution for ARTIC
For Ocean - 3 Week Transport Time

	EXW	FCA-NA	FAS	FOB	CFR	CIF	CPT	CIP	DAF	DES	DEQ	DDU	DDP
Start Price	\$92,000		\$92,000	\$92,000	\$92,000	\$92,000	\$92,000	\$92,000	\$92,000	\$92,000	\$92,000	\$92,000	\$92,000
Inland			2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
Exit Port			500	500	500	500	500	500	500	500	500	500	500
Int'l					\$3,000	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000
Dest. Port											250	250	250
Customs													\$2,760
Inland											\$25	\$25	\$25
Insurance						1,200		1,200					
Estimated													
Cost	\$92,000		\$94,600	\$94,600	\$97,600	\$98,800	\$97,600	\$98,800	\$97,600	\$97,600	\$97,875	\$97,875	\$100,635

For Air - Three Days Transport Time

	EXW	FCA	FAS-NA	FOB-NA	CFR-NA	CIF-NA	CPT	CIP	DAF	DES-NA	DEQ-NA	DDU	DDP
Start Price	\$92,000	\$92,000					\$92,000	\$92,000	\$92,000			\$92,000	\$92,000
Inland		700					700	700	700			700	700
Exit Port		1500					1500	1500	1500			1500	1500
Int'l							\$10,000	\$10,000	\$10,000			\$10,000	\$10,000
Dest. Port												250	250
Customs													\$2,760
Inland												\$25	\$25
Insurance								800					
Estimated													
Cost	\$92,000	\$94,200					\$104,200	\$105,000	\$104,200			\$104,475	\$107,235

Table 5 Solutions for TRUEFROST

For Ocean - Two Weeks Transport Time

	EXW	FCA-NA	FAS	FOB	CFR	CIF	CPT	CIP	DAF	DES	DEQ	DDU	DDP
Start Price	\$95,000		\$95,000	\$95,000	\$95,000	\$95,000	\$95,000	\$95,000	\$95,000	\$95,000	\$95,000	\$95,000	\$95,000
Inland			200	200	200	200	200	200	200	200	200	200	200
Exit Port			750	750	750	750	750	750	750	750	750	750	750
Int'l					\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000
Dest. Port											250	250	250
Customs													\$2,850
Inland											\$25	\$25	\$25
Insurance						1,200		1,200					
Estimated													
Cost	\$95,000		\$95,950	\$95,950	\$96,950	\$98,150	\$96,950	\$98,150	\$96,950	\$96,950	\$97,200	\$97,200	\$100,050

For Air - Three Day Transport Time

	EXW	FCA-NA	FAS-NA	FOB-NA	CFR-NA	CIF-NA	CPT	CIP	DAF	DES-NA	DEQ-NA	DDU	DDP
Start Price	\$95,000	\$95,000					\$95,000	\$95,000	\$95,000			\$95,000	\$95,000
Inland		200					200	200	200			200	200
Exit Port		1800					1800	1800	1800			1800	1800
Int'l							\$8,000	\$8,000	\$8,000			\$8,000	\$8,000
Dest. Port												250	250
Customs													\$3,360
Inland												\$25	\$25
Insurance								800					
Estimated													
Cost	\$95,000	\$97,000					\$105,000	\$105,800	\$105,000			\$105,250	\$108,610

LUNA FRESH FRUIT

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Description: This is a three team game that requires two teams to offer competing price and sales terms to the third team that plays a foreign buyer. The teams are required to use the proper Incoterm 2000 standards for international sales terms and the correct pricing.

This game is normally conducted in two phases and over a longer period of time. For conference use the teams will be given briefs on the situation and their companies. There will also be a short lecture on Incoterms 2000 and how they are used in making international sales. The groups will be given a solution matrix to use as a basis for conducting the exercise. The conference session will focus on the negotiation phase when the two seller groups have to compete to offer the best offer to the buyer group. The buyer group must assess the offers and provide feedback on how the sellers and improve their sales pitch. The game concludes at after a set time frame or when the buyer group accepts one of the seller's offers.

Outcome: Participants enhance their understanding of Incoterms 2000 and how it can be used to generate international sales. They also learn how to properly incorporate Incoterms 2000 into a sales offer and what errors to avoid when conducting business with foreign parties.

Target Audience: Undergraduate students studying logistics or international logistics (at least that how the exercise has been used to date- this exercise might be applicable for other audiences)

2. Time Frame

Training: 20 minutes

Game Play: 60 minutes

Debrief: 15 minutes

3. Absolute Minimum: 2 (game designer can sever as buyer)

4. Items supplied by designer

Full set of briefs and company backgrounds

Solution matrix for all groups

Sample of Incoterms 2000

5. Items needed by participants

Whiteboard or Black board – with markers or chalks – for training and debriefing

3 note pads

3 pen / pencils

6. Room Configuration

Three tables with chairs – tables set up individually with chairs around the tables

7. Note article on LUNA attached with original e-mail for this submission. This provides more detail on the purpose of the exercise and how it is conducted when using both phases. The conference session will only use the group / phase II portion of the exercises.