



**Analysis of Critical Success Factors for Transporting a Special Cargo due the Role
of Freight Forwarder as an Architect of Transport
(A Case Study of Temporary Importing to Brazil)**

**DISSERTATION FOR THE YOUNG INTERNATIONAL FREIGHT
FORWARDER OF THE YEAR AWARD 2008**

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FOREWORDS

Otto Von Bismarck, a great chancellor of German a long time ago ever said that a country is built from “blood and steel”. However, it looks like that Otto forgot that a country is not a union of “something” that is easy enough to be counted. There is one thing except “blood and steel” that build the dream of a country. One thing is imagination.

Based on imagination, the author of dissertation had a dream to continue his study in FIATA diploma and get opportunity to show the capability as a young forwarder. The author thinks that he would get a better life in the future if he finished a study in FIATA diploma. With hope, dream and pray he wants something else that can change his destiny in the future.

Now, after the author finished his dissertation and gained many experiences with limited time and pressure from INFA (Gafeksi), He realizes that imagination, “blood” and “steel” for the meaning of sacrifice and hard works, all of those are not enough.

What we need to dream and to build that is a humble heart to learn and to accept the destiny or “karma” from Allah SWT. Based on that, the author now wants to thank to “The Greatness” with his humble heart that he can finish his dissertation.

The author does not know whether the knowledge that he gained from this program of Youth Forwarder Award can change his life to be better or not, but the author believes that someday he can learn more about his life and become wiser to accept many things that will be happen in the future.

CHAPTER I

INTRODUCTION

1.1 Background

The transportation sector is challenged by globalization, consolidation and the need for faster, more visible and more flexible supply chains. In response, astute providers are now seeking a more agile transportation enterprise. By adopting a service-oriented, alliance-based strategy to reach that objective, service providers can gain a competitive edge in today's transportation sector.

The freight forwarder as one of the component in transportation and supply chains spares no effort to ensure the success of the transportation process from beginning to end or in other terms delivery of goods to destinations in the most appropriate time and lower costs taking into consideration the quality of service.

As an architect of transport, a freight forwarder is hoped to demonstrate a range of skills and qualities that are needed to pursue a successful career in forwarding. Based on that, FIATA, IATA and TT Club invites young forwarders to join TT Club/FIATA Young Freight Forwarder of the Year Award by giving a case study to be solved in best solution in the form of dissertation to encourage training in the freight forwarding industry and to further develop the professionalism in the sector of transportation, value chain and logistics.

1.2 A Case Study Overview

An author as a freight forwarder has been asked to ship a special crane and spare parts from a project site 150 kilometers from author's capital city to Brazil, with final delivery to a project site 50 kilometers from Manaus.

The crane and the spare parts are used and will be re-exported after use-expected time frame for the use at this project is up to 6 months.

The crane is not mobile and is dismantled into 5 parts and can be shipped either on flatracks or as general cargo, however each part of the crane will be "out of gauge" and extend at least in width (pending if you use 20' or 40' flatracks), (measurements 7.50x3.45x3.80 meters, LxBxH – weight of all 5 parts 14 tons). The crane is of a special nature and each of the 5 parts is fitted with a shock-meter.

The used spare parts are packed in cases with a total weight of 12 tones and measuring 17 cubic-meters. With the spare parts a small consignment of hydraulic oil (1 standard drum, weighing 120 kilos), two plastic containers containing paint (weighing 50 kilos) and 4 starter batteries (wet, filled with acid) weighing 150 kilos.

The total consignment constitutes a FCL and the author may co-load either item subject to the relative product restrictions (if any) specified in International Codes (IMDG etc.) or the author may decide to ship this consignment as general cargo. If the author decide to co-load, the author has been asked specify the hazard (if any) and with which other generic product the author would specify not co-load.

1.3 Problem Statements

Based on the condition in a case study, this dissertation will be developed into three problem statements below:

1. What are the critical success factors for transporting the cargo considering condition of the cargo, condition of the route, financial aspects, safety, transit time and custom authorities?
2. Regarding condition of the cargo as one of critical success factors, what is the best method for handling, packaging and marking for the cargo that will be transported?
3. What is the most effective transportation mode considering critical success factors that are explained for the first problem statements? Explain the reason!

CHAPTER II

ANALYSIS

The analysis will be developed into three main points which each point will represent the analysis and discussion of each problem statements above. The three main points of analysis will be:

2.1 Critical Success Factors

A freight forwarder as an architect of transport must make a full documentation and analyze his current business process workflows, identifying what is standard and common across regions and clients, and what needs to be region-specific or client-specific. He must then develop global process templates (critical success factors) for his service offerings (transportation, warehousing and customs brokerage) that standardize core processes while allowing room for region-or client-specific extensions.

The global processes of critical success factors help define the future state company business process architecture that documents durable processes for every company in areas such as customer experience, operations, sales and management. These critical success factors also help define the key events and milestones that will be established and monitored for key business processes and the processes that will be used to manage exceptions.

A freight forwarder has always recognized the importance of data (from partners and from in-house operations) to manage supply chains in

transportation. Good real-time data is critical, but even more critical is the ability to analyze that data to identify the response to exceptions and the ability to execute the actions.

The critical success factors that are related to this cargo will be developed into several factors considering:

2.1.1 ***Condition of the cargo***

As mentioned in a case study, the cargo that must be transported from Indonesia to Manaus, Brazil consists of two goods: first is un-mobile crane. In this point, the author will assume that the fit in single 40' flatrack, as the result of that the cargo will not be over-length and over-height but it will be over-width.

Second are spare-parts that will be put all of them in single 20` GP FCL . Based on the concept of freight forwarding, the condition of small consignment of paint and battery as a critical success factor are considered as hazardous cargo because it will need a special care in handling, packaging, labeling and marking to be safe in destination point.

2.1.2 ***Condition of the route***

In this case study, the author has to transport a special crane and spare parts from a project side 150 kilometers from author's capital city to Brazil, with final delivery to a project side 50 kilometers from Manaus.

In those conditions, the author who lives in Surabaya, Indonesia chooses a city of Wlingi as a project departure from Surabaya and Rio Puerto da Eva as a

project final delivery due to the distance of Wlingi to Surabaya and Manaus to Rio Preto da Eva.

The distance from Wlingi to Surabaya port is approximately 170 kilometers and the distance from Manaus to Rio Preto de Eva is approximately 78,2 kilometers.

The route of project departure to the port in Surabaya will take approximately 12 hours from Wlingi – Blitar – Tulungagung – Kediri – Kertosono – Jombang – Mojokerto – Krian – Waru – Surabaya.

The route of port in Manaus to project destination will take approximately an hour and 16 minutes by car with constant speed. In this case, the author predicts 3 hours considering the speed of Land Transport used. The route will be from Manaus port directs to the north that is heading to Av. Constantino Nery then go to Beco San Marino (approximately 3.6 km), turn slightly to the left at R. Recife, furthermore continue heading to Av. Torquato Tapajos (approximately 12.9 km) and finally the route is just go through along AM. 010 to Rio Preto de Eva (approximately 61.7 km).

Based on the route as a critical success factor, the best method of transport will use Multi Mode Transport Operator

2.1.3 *Financial Aspects*

In this analysis, the cost of cargo and delivery road transport will be based on assumption and data from Internet due to the limited data in the case study.

The author as an architect of transport will consider the cost of freight, local handling and port charges at each side based on the critical success factors on condition of the cargo and condition of the route.

The freight charges will depend on the charges from this 2 shipping company for comparison.

No	Liner	Route	Transit Time	Condition	Detail charge	Total Cost
1	Ben Line	<p>1st Route: Surabaya - Singapore - Sepetiba - Buenos - Rio Grande - Paranagua - Manaus</p> <p>2nd Route: Surabaya - Singapore - Sepetiba - Manaus</p>	<p>36 days exclude waiting time at each port transit</p> <p>28 days exclude waiting time at each port transit</p>	2 X per week	<p>20 GP = 3700 USD Add in gauge = 1500 USD</p> <p>Add DG = 300 USD 40 GP = 7125 USD Add in gauge = 2000 USD</p> <p>Add DG = 600 USD</p>	<p>1 X 20 FCL GP for declared as Hazardous = 3700 + 300 = 4000 USD</p> <p>1 X 40 FL with killing space = 7125 + 2000 + (2 X 7125) = 23,375 USD</p>
2	Maersk	Surabaya - Tanjung Pelepas - Hongkong - Balboa Panama - Manzanilo Panama - Manaus	49 days include waiting time at each port transit	2 X per week	All local charge include but subject to destination local charge such us THC, etc	<p>1 X 20 FCL GP declared as Hazardous = 4,791 USD</p> <p>1 X 40 FL = 28,000 USD</p>

See Appendix 1 for details

Those calculations above for freight will be considered into the calculation for local handling and port charges in Indonesia

No	Detail	Container Type	Charge	USD Rate	Total
1	Pick up	20 GP FCL	Rp3,000,000.00	Rp9,196.20	\$326.22
		40 FL	Rp4,500,000.00	Rp9,196.20	\$489.33
2	Fumigation & ISPM	All in	Rp3,000,000.00	Rp9,196.20	\$326.22
3	Surveyor (DGM Indonesia)				\$150.00
4	Custom Clearance	All in	Rp10,000,000.00	Rp9,196.20	\$1,087.41
5	Port Charge	20 GP FCL	Rp329,010.00	Rp9,196.20	\$35.78
		40 FL	Rp1,366,200.00	Rp9,196.20	\$148.56
6	THC	20 GP FCL			\$95.00
		40 FL			\$145.00
7	B/L Fee	All in	Rp100,000.00	Rp9,196.20	\$10,87
	TOTAL		Rp22,295,210,00		\$2,814,39

See Appendix 2 and Appendix 4 for details

and local handling and port charges in Brazil

Brazilian Local Handling

No	Description	Charges	Total Costs
1	Seaport charge (AFRMM)	25% on freight	6,843.75
2	THC	R\$ 166 per container	199,95
3	Seaport Warehouse - 10 days	0.45% on CIF	800,58
4	Warehouse – optional	0.45% on CIF	800,58
5	Removal to warehouse – optional	R\$ 350 per container	420,81
6	Handling/ Load/ Unload/ Container	R\$ 400 percontainer	480,93
7	Custom broker	R\$ 700 percontainer	841,63
8	Syndicate of the Custom Broker	R\$ 286 percontainer	343,87
9	Bill of Lading clearance		80.00
10	Federal tax on financial transaction	0.38% on Cost after Tax	695.59
11	Exchange Bank Tax		80.00
12	Registration in SISCOMEX system		80.00
13	Road transport / Delivery		500.00
	Total Brazilian Local Handling		11,609.71

*See Appendix 3 for detail

Furthermore, all calculation costs will be one of critical success factors that should be considered by freight forwarder to give the most efficient way of transport to the customer.

2.1.4 *Custom Authorities*

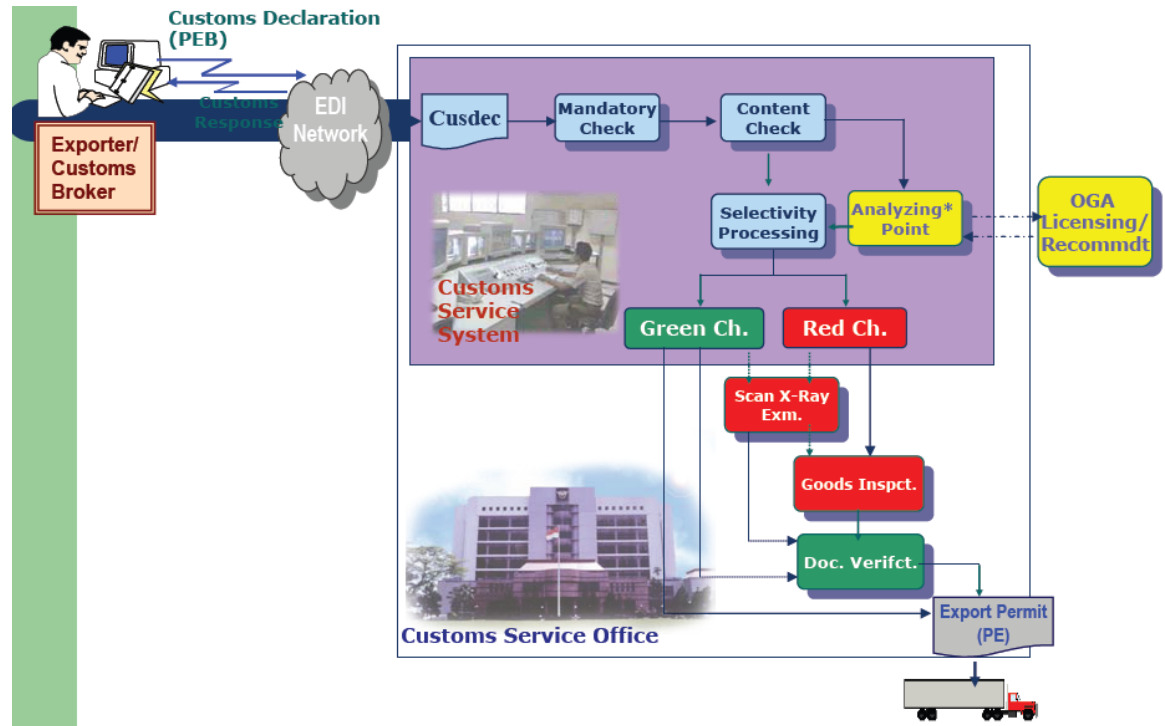
In this case study, the crane as a cargo will export from Indonesia in the condition of temporary use and it was only temporally imported. The destination is Brazil for temporally importing. As the result of that, custom will be one of critical success factors that must be considered by a freight forwarder remembering that the custom is the basic of law for each country to transport any goods.

2.1.4.1 *Custom procedures in Indonesia*

As can be seen in the case study, the condition of the cargo was temporary use and only temporary imported in Indonesia. It means the cargo in Indonesia will be the subject of temporary import tax and the importer must give temporary bond to the government of Indonesia regarding those conditions.

In the term to export to Brazil, the importer should ask back the bond of temporary import from the government of Indonesia by giving written letter and declaration that the condition (quantity, quality, model and identity) of the crane is same as the condition when the good was imported to Indonesia.

Furthermore, the importer must already pay all the custom charges and import tax to the government of Indonesia to get approval to be exported,



The figure above shows the procedure of export in Indonesia by using EDI (Electronic Data Interchange). In order to get approval for exporting, the exporter or freight forwarder must give a written declaration to the custom office by attaching all documents that was related to temporary import before. The custom will check the condition of cargo in the term of documents and physical condition to be matched with the condition when was imported to Indonesia.

2.1.4.2 *Custom procedures in Brazil*

When the cargo enters Brazil, customs clearance procedures are started. The importer, through his customs Broker who should be duly accredited and certified by Receita Federal, will issue the DI - Import Declaration (Declaração de Importação) through Siscomex- Brazilian Foreign Trade

System (Sistema de Comércio Exterior Brasileiro), based on the corresponding documents – Import License (if required), Shipping Documents, Commercial Invoice, Packing List and others when requested due the nature of goods and after payment of duties such as Import Duty (I.I.), Industrialized Products Duty (I.P.I.) and Siscomex fee.

Customs Clearance is an assemble of acts performed by an inspector which aims the clearance of goods (authorization of delivery of goods to the importer) after conclusion and check-out of goods and payments of duties if applicable. Through Siscomex, after customs clearance, the importer can issue a proof of imports named CI – Import Receipt (Compro-vante de Importação), that will confirm customs clearance. For such purpose, after analysis, this system will select randomly and distribute for customs checking, within the following possible criteria:

Green: Automatic Customs Clearance; Estimated time of release of goods: 1 day

Yellow: documentation analysis and if no irregularities are found they proceed with Customs Clearance; estimated time of release of goods: 3 days

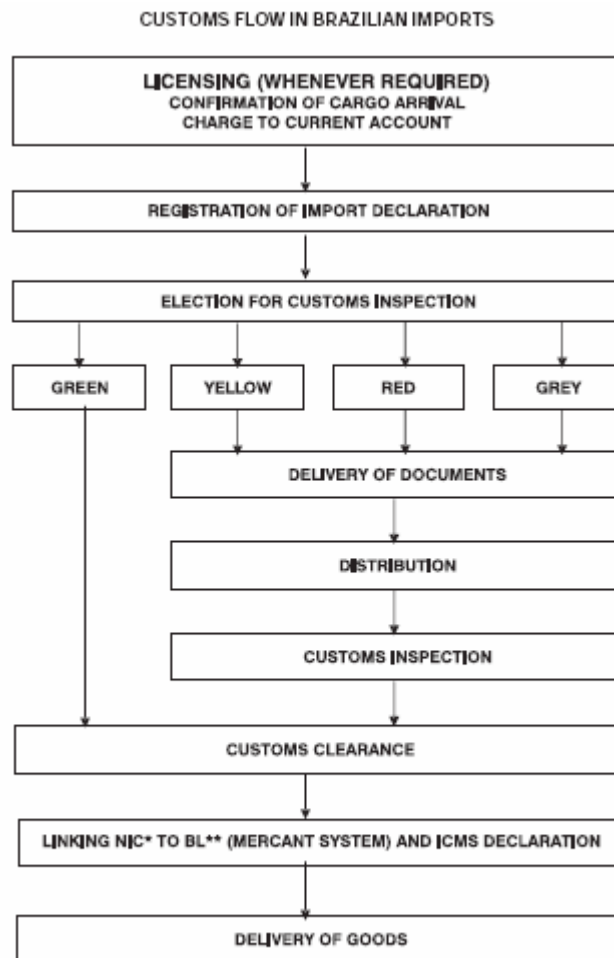
Red: documentation and cargo analysis and after that they proceed with Customs Clearance; estimated time of release of goods: 4 to 5 days

Grey: special procedures for Customs clearance. This occurs when the value of merchandise declared differs from the usual prices in the market. In this

case an explanation and documents will be required and should be presented to customs for analysis. Estimated minimum time of release of goods: 10 days

All documents together with Imports Receipt – issued through Siscomex – Brazilian Foreign Trade System (Sistema de Comércio Exterior Brasileiro) must be presented by the importer to the Customs Authority (Receita Federal) for the conclusion of Customs clearance. The green channel is exempted of this procedure.

The procedures of custom can be summarized into figure below:



N/C: Cargo Identification Number
BL: Bill of Lading (Comhecimento de Embarque)

The payment or VAT (I.C.M.S.) exemption should be informed to Siscomex for the release of merchandise, because requirements are based on local legislation. Considering São Paulo state, for instance, the payment is automatic, since it is possible to print a receipt from the Internet.

The release of goods depends on the conclusion of customs clearance and receipt of VAT (I.C.M.S.) and AFRMM, as well as the identification of inland transport driver. The data presented in the Import Receipt, calculations and indication of penalties or legal increases should be made by specific procedures through Siscomex.

Based on the case study condition, the cargo can be classified into imports under Temporary Admission Program. The Program allows for imports of goods for a pre-determined time frame and a clear objective. Under the program, import tax and the Federal tax (IPI) are only charged on products that will be used in the production of other products and involves payment of rental or lease from the local importer to the international exporter. This includes products such as dies, matrixes, sheets and industrial tools. Due taxes are proportional to the time frame the imported product will remain in Brazil. The import tax applicable on products imported under temporary admission program is calculated according to the following formula:

$$V=I/U*P$$

V = the tax to be paid

I = Federal Taxes in the normal import process

P = number of months in which the product will remain in Brazil

U = the life span of the product - according to Normative Instruction # 162, dated December 31, 1998

The Manaus free-trade zone (Zona Franca de Manaus, Amazônia Ocidental and Área de livre Comércio de Macapá/Santana) was created in 1967 to attract industries and commerce to the Amazon region.

All imported foreign goods are tax free, provided they are consumed within the zone or are exported abroad. Sales or transfers of these goods to other parts of Brazil result in payment of the previously exempt taxes unless they are incorporated into manufactured products within the free-trade zone.

Foreign-controlled subsidiaries may establish assembly operations and enjoy the same benefits as local companies. Sales from other parts of Brazil to the Manaus free-trade zone are also entitled to some tax benefits. These fiscal benefits are also applicable to certain specific areas of the Western Amazon region, which covers the states of Acre, Amazonas, Amapá, Rondônia and Roraima. Incentives granted:

- **Import Tax (II):** Exemption if goods are for internal (free-trade zone) consumption and reduction of 88% of the import tax over raw material, intermediate and secondary coming from abroad used in the manufacture of products in the Free Zone, when sent to any of the Brazilian states, as long as the producers have their project approved by the Administration Council of Suframa and cor-respond to the basic

production process-PPB (a small number of steps to distinguish industrialization).

- **Tax Over Industrialized Goods (IPI):** Exemption
- **Municipal Government Incentives:** Exemption for 10 years of IPTU Tax, public cleaning and conservation tax and business running tax

Sales from other parts of Brazil to the Free Zone are also entitled to some tax benefits. These benefits apply only to merchandise entering the free trade zone by Manaus Airport or Manaus Harbor. They do not apply to the importation of weapons and ammunitions, perfumes and beauty products, tobacco products, alcoholic beverages or auto-motive vehicles.

2.2 Methods for handling, packaging and marking

Specific technique, methods, and equipment are involved in controlling the flows of cargo through the terminals and onto the ship. The freight forwarder should have knowledge of specific activities but realize that each installation may do things in slightly different way.

2.2.1 *Out of Gauge cargo*

The dismantled crane will be categorized into Out of Gauge cargo. The Transport of out of Gauge items requires careful advance planning. There are special considerations that apply to all Out of Gauge cargo. Accurate information on the cargo: dimensions, weight, weight concentration,

protuberances, base structure for handling, drawings, diagrams, and photograph may be needed for a final decision.

Prior to loading machinery in a container, special consideration should be given to the following areas:

1. Metal surface bolted to wooden skids should be protected with a heavy oil coating.
2. Non-precision surface should be painted with a tough hard-drying preservative.
3. Critical function or close tolerance surface and openings should be thoroughly cleaned prior to application of preservatives.
4. Highly finished surface of high tolerance components should be cleaned and painted with an appropriated preservative plus a neutral greaseproof wrapping to prevent running of the preservative at high temperatures.
5. Delicate machinery and instruments which are not suitable for use of a clogging preservative or cannot be protected by a rust inhibiting compound moisture-proof sheath containing adequate amounts of desiccants to lower the moisture content of the air to safe margin and maintain it at or below that level.
6. Threaded or mechanical surface and pipe ends should be protected by using suitable end protectors and preservations.

7. Projections, such as brackets, instrument fitting, and soon, which can be removed, should be packed in a separate box and securely fastened in or to the items to which they belong.

Load distribution. The total load must be within the limits of the container. Load In excess of the capacity of the individual cross members of the container must be distributed over enough cross members to carry the load.



Sample of Out of Gauge cargo

2.2.2 *Hazardous cargo*

In the handling of hazardous commodities two main things must kept on mind:

1. Handle Carefully
2. Know the Nature of the Hazard.

The safety of the cargo handler depends upon the adequacy of the packaging and its proper identification.

Two plastic containers containing paint (weighing 50 kilos) will be classified into hazardous goods class 3 (flammable liquid) and class 8 (corrosives). Furthermore, 4 starter batteries (wet, filled with acid) weighing 150 kilos will be classified into hazardous goods class 8 (corrosives).

Batteries, wet, filled with acid electric storage are part of the dangerous goods list with UN No. 2794 with Class or Division 8. It has no Packing Group but has a special provision that need not individually marked and labeled if the pallet bears the appropriate mark label. Its limited shipment quantities is 1 (One) Liter with packing instruction that applied to new and used batteries assigned to UN Nos. 2794, 2795, 3028. The following packaging is authorized, except that packaging need not conform to the provision of parts 6:

1. Rigid outer packaging;
2. Wooden slatted crates;
3. Pallets.

Used storage batteries may also be transported loose in stainless steel or plastics battery boxes capable of containing any free liquid. Additional provisions:

1. Batteries shall be protected against short circuits.
2. Batteries stacked shall be adequately secured in tiers separated by a layer of non-conductive material.

3. Battery terminals shall not support the mass or other superimposed elements.
4. Batteries shall be packaged or secured to prevent inadvertent movement.
5. For UN 2794 and UN 2795, batteries shall be capable of passing a tilt test at an angle of 45 degree with no spillage of liquid.

Furthermore, the properties and observations that should be considered are: metal plates immersed in acid electrolyte in a glass, hard rubber or plastics receptacle. When electrically charged, may cause fire through short-circuiting of terminals. Acid electrolyte is corrosive to most metals. Cause burns to skin, eyes, and mucous membranes. Used batteries being transported for disposal or reclamation should be carefully checked prior to shipment to ensure the integrity of each battery and its suitability for transport.

General stowage precautions for goods of class 8:

1. The substance of this class shall be kept as dry as reasonably practicable, since in the presence of moist, they may be corrosive to most metals and some also react violently with water.
2. All substance of this class for which an unprotected plastics packaging is permitted shall be kept as cool as reasonably practicable as the resistance of most plastics decreases at higher temperature.

Additional stowage precautions for corrosive substance which are also flammable liquids

1. On ships carrying passengers, these substances shall be stowed well “away from” any deck or spaces provided for the use of passengers.
2. These substance shall be stowed in mechanically ventilated space and be kept as cool as reasonably practicable during transit. They should be stowed “away from” all source of heat.

The method to handle paint will be based on the type of paint as dangerous goods. There are two type of paint in dangerous goods list and limited quantities exceptions

1. UN No. 1263 for PAINT (Including paint, lacquer, enamel, stain, shellac solutions, varnish, polish, liquid filler and liquid lacquer base) or PAINT RELATED MATERIAL (Including paint thinning or reducing compound)
2. UN No. 3066 for PAINT (Including paint, lacquer, enamel, stain, shellac, varnish, polish, liquid filler, and liquid lacquer base) and (Including paint thinning or reducing compound)

Paint with UN No. 1263 includes in Class or Division 3 with packing group differs from II, III, and I since the miscibility with water depend upon the composition.

Paint with packing group I have a special provisions as follows:

A substance specifically listed name in the dangerous goods shall not be transported under this entry. Materials transported under this entry may

contain 20% or less nitrocellulose provided the nitrocellulose contains not more than 12.63% nitrogen (by dry mass)

While which with Packing Group II has special provision as mentioned above plus if material, substance or article transported under this entry is a severe marine pollutant and the limited quantities, shall be changed to 500 g for solids or 500 ml for liquid.

The paint in packing groups III has special provisions as mentioned above plus if the chemical or physical properties of substance covered by this description are such that, when tested, it is not subject to the provisions of this code except in the case of marine pollutant.

As declare in the case the pain is packed in a 2 single plastic packaging containers which the Author assume in composite packaging of plastic receptacle in fibre, plastics, or plywood drums with maximum capacity / net mass for packing group I is 120 l while for packing group II and III is up to 250 l.

While paint with UN No. 3066 includes in Class or division 8 with packing group II which has similar provision with the paint with UN No. 1263. It is limited quantities up to 1 l because of the corrosive content which may cause burns to skin, eyes, and mucous membranes.

2.2.3 *Special requirements of Stowage*

As can be seen from the case study, there is a small consignment of hydraulic oil (1 standard drum, weighing 120 kilos). In this condition, a freight forwarder should know the way of stowage for barrels and drums because they usually contain material which can be highly objectionable, dangerous, and contaminating to other cargo.

Unusual pains must be taken to ensure that the receptacle itself is sound and capable of delivering its content safely. Any movement of the drums can result in damage.



There are some special instructions on metal drums as of:

- i. Always stowed upright
- ii. Stowe drums with bung uppermost if the bung or closure is at one end

- iii. Do not re-use single-or one-trip drums. Avoid second hand drums for ocean transport. If shipper insists on using second hand drums make notation on B/L.
- iv. Use adequate seals on locking levers and sealing ring of open-end drums. Failure of seals can cause spillage.
- v. Be sure drums are approved for hazardous cargo
- vi. Inspect drums thoroughly before shipping. Reject any drum showing signs of leaks or weakness. Watch for unusual bulges.
- vii. Attach special instructions concerning handling of drums and content to the container. This is obligatory if any dangerous or Hazardous materials are involved.

For the cargo that contains hazardous goods and the rest of spare parts as explained above will need a special container stowage method



The stowage methods that can be used to those goods above can be:

A. Fibre-board Boxes or Cartons

Plywood, wood dunnage or corrugated sheets are used to segregate ties of different sizes.



Provide plastic or waterproof shrouds over top and sides of load to protect from water damage. Provide proper bracing at end to prevent movement.



B. Wooden Boxes and Crates



Boxes and crates of uniform size and weight should be staked directly on top of each other. Items of different dimensions should be separated by dividers or auxiliary decking and must be adequately braced.



C. Palletized/Unitized Cargo



Unitization is defined as the assembly of one or more items into a compact load, secured together, and provided with skids or cleats for ease of handling.



2.3 The most effective transportation mode

The best method of transport will be Multi Mode Transport Operator because there are two model of transport that will be used and two countries involved. The main model of transport is Sea transport, however the secondary transport to take the cargo from project side departure to Indonesia sea port and from Brazil sea port to project side destination will be Land transport.

Based on assumption for financial aspect of critical success factors, the author will decide use Ben Line for shipping company with 2nd route (Surabaya-Singapore-Sepetiba-Manaus) considering shorter transshipment day and the most efficient costs that should be paid by the customer as of:

$$1 \text{ X } 20\text{' GP FCL} = 4,000.00 \text{ USD}$$

$$1 \text{ X } 40\text{' Flatracks} = 23,375.00 \text{ USD}$$

With total Transportation Cost is as follows:

$$\text{Indonesian Local Charge} = 2,883.52 \text{ USD}$$

$$\text{Sea Freight} = 27,375.00 \text{ USD}$$

$$\text{Brazilian Local Charge} = 11,609.71 \text{ USD}$$

$$\text{Total Cost} = 41,868.23 \text{ USD}$$

2.3.1 Documents

Within this transportation the most important thing to be considered is the proper documentation process since the cargo is only for temporary used in both places plus the cargo handling. All documents that will be used are for the transportation:

- Bill of Lading (B/L) which is stated on the description that there are Dangerous goods cargo per attached shipper declaration
- Packing lists
- Invoice
- Insurance
- Shipper's declaration
- Fumigation and ISPM document

CHAPTER III

CONCLUSION

3.1 Conclusion for 1st Problem Statement

The critical success factors that are related to this cargo will be developed into several factors considering:

1. Condition of the cargo
2. Condition of the route
3. Financial Aspects
4. Custom Authorities

3.2 Conclusion for 2nd Problem Statement

In this case study, the cargo can be categorized into hazardous and heavy lift cargo which the handling, packaging and marking will be different. The dismantled crane will be categorized into heavy lift cargo which requires careful advance planning. There are special considerations that apply to all heavy or Out of Gauge cargo. Accurate information on the cargo: dimensions, weight, weight concentration, protuberances, base structure for handling, drawings, diagrams, and photograph may be needed for a final decision.

The spare parts that contains a small consignment of hydraulic oil (1 standard drum, weighing 120 kilos), two plastic containers containing paint (weighing 50 kilos) and 4 starter batteries (wet, filled with acid) weighing 150 kilos, will be categorized into hazardous cargo. The safety of the cargo handler depends upon the adequacy of the packaging and its proper identification. Likewise,

the safety of the ship, train, or truck depends on the knowledge of the hazard so that proper precautions can be taken.

3.3 Conclusion for 3rd Problem Statement

Based on critical success factors analysis, the author as an architect of transport decide to transport this special cargo by using 1 X 40` Flatracks for the Crane and 1 X 20` GP FCL containing a Dangerous Goods and Non Dangerous Goods for the spare parts. The transportation will use one shipment and one Bills of Ladings (B/L) and the best method of transport will be Multi Mode Transport Operator because there are two mode of transport that will be used, Sea and Land Transport.

Based on assumption for financial aspect of critical success factors, the author will decide use Ben Line considering the shortest transshipment day and most efficient costs that should be paid by the customer.

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APPENDIXES

Appendix 1

No	Liner	Route	Transit Time	Condition	Detail charge	Total Cost
1	Ben Line	<p>1st Route: Surabaya - Singapore - Sepetiba - Buenos - Rio Grande - Paranagua - Manaus</p> <p>2nd Route: Surabaya - Singapore - Sepetiba - Manaus</p>	<p>36 days exclude waiting time at each port transit</p> <p>28 days exclude waiting time at each port transit</p>	2 X per week	<p>20 GP = 3700 USD</p> <p>Add in gauge = 1500 USD</p> <p>Add DG = 300 USD</p> <p>40 GP = 7125 USD</p> <p>Add in gauge = 2000 USD</p> <p>Add DG = 600 USD</p>	<p>1 X 20 FCL GP for declared as Hazardous = 3700 + 300 = 4000 USD</p> <p>1 X 40 FL with killing space = 7125 + 2000 + (2 X 7125) = 23,375 USD</p>
2	Maersk	Surabaya - Tanjung Pelepas - Hongkong - Balboa Panama - Manzanilo Panama - Manaus Brazil	49 days exclude waiting time at each port transit	2 X per week	All local charge include but subject to destination local charge such us THC, etc	<p>1 X 20 FCL GP declared as Hazardous =4,791USD</p> <p>1 X 40 FL = 28.000 USD</p>

Appendix 2

No	Detail	Container Type	Charge	USD Rate	Total
1	Pick up	20 GP FCL	Rp3.000.000,00	Rp9.196,20	\$326,22
		40 FL	Rp4.500.000,00	Rp9.196,20	\$489,33
2	Fumigation & ISPM	All in	Rp3.000.000,00	Rp9.196,20	\$326,22
3	Surveyor (DGM Indonesia)				\$150,00
4	Custom Clearance	All in	Rp10.000.000,00	Rp9.196,20	\$1.087,41
5	Port Charge	20 GP FCL	Rp329.010,00	Rp9.196,20	\$35,78
		40 FL	Rp1.366.200,00	Rp9.196,20	\$148,56
6	THC	20 GP FCL			\$95,00
		40 FL			\$145,00
7	B/L Fee	All in	Rp100.000,00	Rp9.196,20	\$10,87
	TOTAL		Rp22.295.210,00		\$2.814,39

Appendix 3

CIF Value

No	Detail	Description	Charges	Total Costs in USD
1	Exchange rate US\$ / R\$ reference 28 April 2008	1,66		
2	FOB Value Indonesian Seaport			150.000,00
3	International Sea Freight - Estimated	Using Ben Line		27.375,00
4	International Insurance Door to Door		0,30%	532,13
	CIF Value Brazil			177.907,13

Tax To be Paid for Temporary Import

No	Description	Description	Charges	Total Costs in USD
1	Import Tax (II) Federal	FREE (Manaus Free Trade Zone)	14%	0,00
2	Tax over Industrialized Products (IPI) Federal	FREE (Manaus Free Trade Zone)	5%	0,00
3	Program for the Social Integration (PIS) Federal	1.65% on (CIF+II+IPI)	1,65%	2.935,47
4	Contribution for the Financing of Social Security (COFINS) Federal	7.6% on (CIF+II+IPI)	7,60%	13.520,94
	Tax on the circulation of goods (ICMS) State	18% on (CIF+II+IPI+PIS+COFINS)	18%	34.985,44
	Tax for normal Import			51.441,85
	Life Span of Product		60	
	Number of Month Remain In Brasil		6	
	Tax to be paid for temporary Import			5.144,18

Total costs after Tax

No	Description	Description	Charges	Total Costs in USD
1	Total costs after Tax	Tax to be paid for temporary Import + CIF Value Brasil		183.051,31

Brazilian Local Handling

No	Description	Description	Charges	Total Costs in USD
1	Seaport charge (AFRMM)	25% on freight	25%	6.843,75
2	THC	R\$ 166 per container	99,973	199,95
3	Seaport Warehouse - 10 days	0.45% on CIF	0,45%	800,58
4	Warehouse - optional	0.45% on CIF	0,45%	800,58
5	Removal to warehouse - optional	R\$ 350 per container	210,407	420,81
6	Handling/ Load/ Unload/ Container	R\$ 400 percontainer	240,466	480,93
7	Custom broker	R\$ 700 percontainer	420,815	841,63
8	Syndicate of the Custom Broker	R\$ 286 percontainer	171,933	343,87
9	Bill of Lading clearance			80,00
10	Federal tax on financial transaction	0.38% on Cost after Tax	0,38%	695,59
11	Exchange Bank Tax			80,00
12	Registration in SISCOMEX system			80,00
13	Road transport / Delivery			500,00
	Total Brazilian Local Handling			12.167,70

Note:

- 1 All cost are draft calculation based on similar scenario Aroana Trading and Logistics - www.aroana.com.br
- 2 Value of Goods is Assume as USD 150,000.00
- 3 Value of Road transport / Delivery is Assume as USD 500
- 4 No of containers per shipment : 2 (Two)
- 5 No of B/L per shipment : 1 (One)
- 6 Life span of product : 60 (Sixty)
- 7 Number of months remain in Brazil : 6 Month
- 8 Tax should be paid for Brazilian is only USD 5.144,88

Appendix 4

INDONESIAN PORT CHARGE

20 GP FCL

No	Description	Period	Container Hazardouz Cargo	USD Rate	Total
1	Container Stacking	I (1----5)	Rp44.400,00	Rp9.196,20	\$4,83
		(6----10)	Rp88.800,00	Rp9.196,20	\$9,66
		II (11---etc)	Rp133.200,00	Rp9.196,20	\$14,48
2	Lift ON / Lift OFF		Rp155.000,00	Rp9.196,20	\$16,85
3	VAT		Rp19.940,00	Rp9.196,20	\$2,17
	(10 % of Container Stacking & Lift ON / Lift Off)				
	TOTAL		Rp219.340,00	Rp9.196,20	\$23,85
	Total Charge		Rp329.010,00	Rp9.196,20	\$35,78
	(150% deposit guarantee of Total Charge)				



Assumption that Cargo is only on I (1---5) Period

40 Flat Rack

No	Description	Period	Container Hazardouz Cargo	USD Rate	Total
1	Container Stacking	I (1----5)	Rp78.000,00	Rp9.196,20	\$8,48
		(6----10)	Rp156.000,00	Rp9.196,20	\$16,96
		II (11---etc)	Rp234.000,00	Rp9.196,20	\$25,45
2	Lift ON / Lift OFF		Rp750.000,00	Rp9.196,20	\$81,56
3	VAT		Rp82.800,00	Rp9.196,20	\$9,00
	(10 % of Container Stacking & Lift ON / Lift Off)				
	TOTAL		Rp910.800,00	Rp9.196,20	\$99,04
	Total Charge		Rp1.366.200,00	Rp9.196,20	\$148,56
	(150% deposit guarantee of Total Charge)				

Assumption that Cargo is only on I (1---5) Period

Appendix 5

SHIPPER'S DECLARATION FOR DANGEROUS GOODS						
Shipper PT. DGM INDONESIA JL. VETERAN NO. 8-F, UNIT I-03, TEL : 62 31 382 3834, 367 884, FAX : 62 31 367 9297 60175 SURABAYA, INDONESIA For: PT. PERUSAHAAN ROKOK TJAP GUDANG GARAM TBK, JALAN SEMAMPUR III, KEDIRI, INDONESIA			Air Waybill No. Page 1 of 1 Pages Shipper's Reference Number: DGMSUB001011 <i>(optional)</i>			
Consignee M/S HONEYWELL INTERNATIONAL ATTN. MR. DARBY HILTON / , MR. MIKE MATTEWS, 65 BEECO ROAD, GREER 29650, USA TEL +1 804 801 2200 FAX +1 804 801 8818						
Two completed and signed copies of this Declaration must be handed to the operator.			WARNING Failure to comply in all respects with the applicable Dangerous Goods Regulations may be in breach of the applicable law, subject to legal penalties.			
TRANSPORT DETAILS This shipment is within the limitations prescribed for: <input type="checkbox"/> PASSENGER AND CARGO AIRCRAFT <input checked="" type="checkbox"/> CARGO AIRCRAFT						
Airport of Departure: SURABAYA, INDONESIA			Shipment type: <i>(delete non-applicable)</i> <input checked="" type="checkbox"/> NON-RADIOACTIVE <input checked="" type="checkbox"/> HAZARDOUS			
Airport of Destination: ATLANTA, USA						
NATURE AND QUANTITY OF DANGEROUS GOODS						
Dangerous Goods identification						
UN or ID No.	Proper Shipping Name	Class or Division (Subsidiary Risk)	Packing Group	Quantity and type of packing	Packing Inst.	Authorization
UN 3184	ENGINES, INTERNAL COMBUSTION, FLAMMABLE LIQUID POWERED	9		1 Plywood box x 153 kg	900	
Additional Handling Information 24 HOURS EMERGENCY CONTACT NUMBER : 011 62 31 817 323 629 CONTACT PERSON : SRI HANDAYANI						
I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labelled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. I declare that all of the applicable air transport requirements have been met.				Name/Title of Signatory SRI HANDAYANI / OPERATION MANAGER Place and Date SURABAYA, 7 January 2008 Signature (see warning above) 		
Copyright © 1995 - 2008 DGM-SDG						

Appendix 6



TARIFF RECAPITULATION OF YARD AND CONTAINER MOVEMENT SERVICES

PT. TERMINAL PETIKEMAS SURABAYA

Based on TPS Circular Letter No. 01/SE.Kp.0.1/TPS-2007, dated 08/01/2007

CODE:CY

Effective per 1 February 2007

NO.	DESCRIPTION	PERIOD	DRY CONTAINER						CONTAINER HAZARDOUS GOODS			OH / OW / OL / REEFER			UNCONTAINERIZED			CHASSIS			
			FULL			EMPTY			20'	40'	45'	20'	40'	45'	< 20 TON	20 s/d 35 TON	> 35 TON	20'	40'		
			20'	40'	45'	20'	40'	45'	20'	40'	45'	20'	40'	45'	TON	TON	TON	20'	40'		
1	CONTAINER STACKING IMPORT / EXPORT	I (1-- 5)	22,200	44,400	55,500	11,100	22,200	27,750	44,400	88,800	111,000			39,000	78,000	97,500	39,000	78,000	97,500	16,500	33,000
		(6-- 10)	44,400	88,800	111,000	22,200	44,400	55,500	88,800	177,600	222,000			78,000	156,000	196,000	78,000	156,000	195,000	33,000	66,000
		II (11--dst)	66,600	133,200	166,500	33,300	66,600	83,250	133,200	266,400	333,000			117,000	234,000	292,500	117,000	234,000	292,500	49,500	99,000
2	LIFT ON / LIFT OFF IMPORT/ EXPORT	~	155,000	233,000	291,250	77,500	116,500	145,625	155,000	233,000	291,250	(R) (OH)	155,000 500,000	233,000 750,000	291,250 937,500	~ 500,000	~ 750,000	~ 937,500	~ ~	~ ~	
3	EXTRA MOVEMENT Without Additional Equipment With Additional Equipment	~ ~	340,000 ~	510,500 ~	638,125 ~	171,000 ~	257,500 ~	321,875 ~	340,000 ~	510,500 ~	638,125 ~	(R) (OH)	340,000 1,030,000	510,500 1,544,500	638,125 1,930,625	~ 1,030,000	~ 1,544,500	~ 1,930,625	~ -	~ ~	
4	LOADING CANCELLATION	~	340,000	510,500	638,125	171,000	257,500	321,875	340,000	510,500	638,125	(R) (OH)	340,000 1,030,000	510,500 1,544,500	638,125 1,930,625	~ 1,030,000	~ 1,544,500	~ 1,930,625	~ ~	~ ~	
5	ELETRICITY POWER SUPPLY	~	~	~	~	~	~	~	~	~	(R)	73,500	110,250	137,810	~	~	~	~	~	~	
6	MONITORING	~	~	~	~	~	~	~	~	~	(R)	22,000	22,000	22,000	~	~	~	~	~	~	
7	STRIPPING (L)	~	36,000	54,000	67,500	~	~	~	~	~	~	~	~	~	~	~	~	~	~	~	
8	STUFFING (L)	~	~	~	~	36,000	54,000	67,500	~	~	~	~	~	~	~	~	~	~	~	~	
9	HAULAGE (L)	~	30,000	44,500	55,500	16,000	24,500	30,500	30,000	44,500	55,500	(R)	30,000	44,500	55,500	~	~	~	~	~	
10	WHARF	~	~	~	~	15,650	23,400	29,250	~	~	~	~	~	~	~	15,600	31,200	39,000	~	~	
11	CANCELLATION: a. PER-CONTAINER	~	5,500	5,500	5,500	5,500	5,500	5,500	5,500	5,500	5,500	5,500	5,500	5,500	5,500	5,500	5,500	5,500	~	~	
12	b. CANCELLATION	~	5,500	5,500	5,500	5,500	5,500	5,500	5,500	5,500	5,500	5,500	5,500	5,500	5,500	5,500	5,500	5,500	~	~	
	DOCUMENT CORRECTION	~	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	~	~	

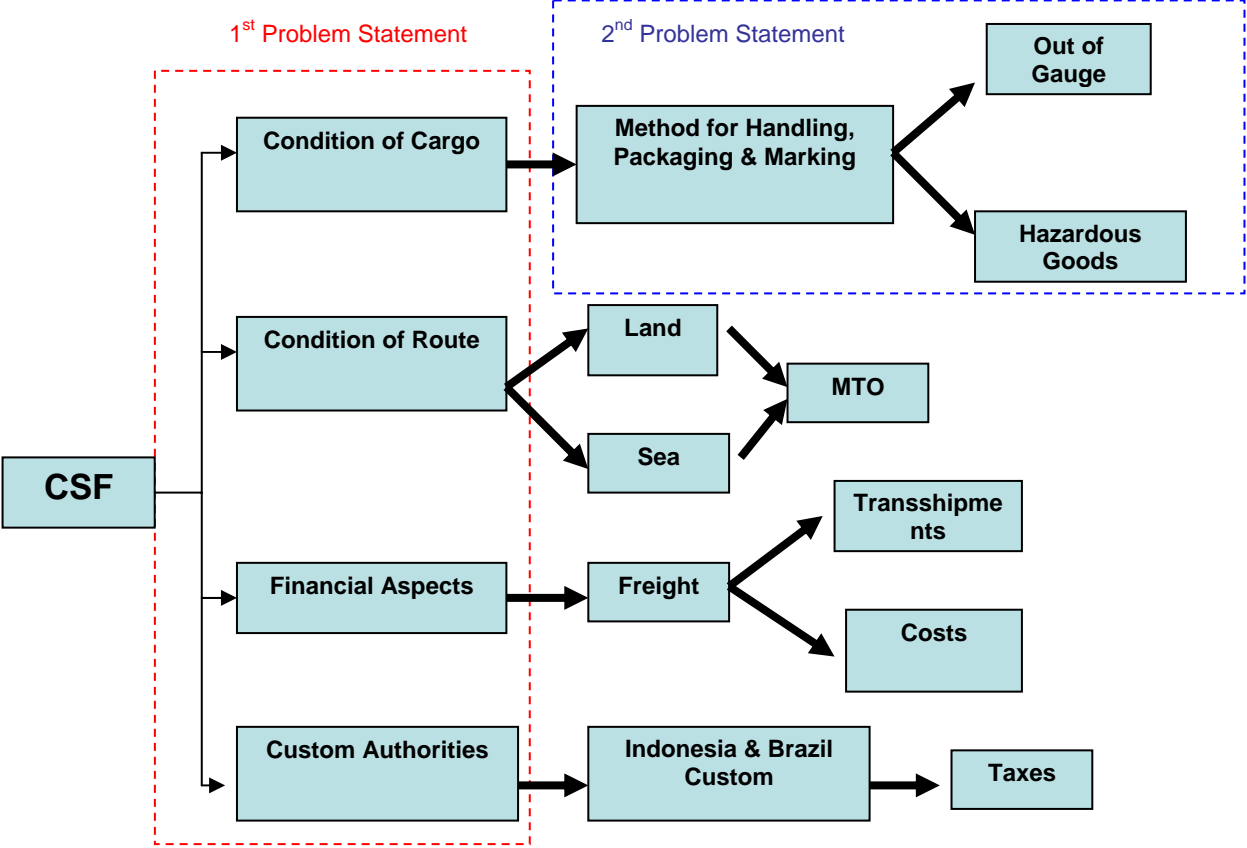
NOTE MINIMUM INVOICE = Rp. 15.000

Surabaya, 08 January 2007
An.DIREKSI PT.TERMINAL PETIKEMAS SURABAYA
ADMINISTRATION MANAGER

SUEB ZAENAL, SH, MM

Appendix 7

Concept of Thinking I



Appendix 7

Concept of Thinking II

