

Aircraft Maintenance Company's Spare Part Logistics Into Russia

Sami Partanen

Bachelor's Thesis

2011

Degree Programme in Logistics Engineering
Technology, communication and transport



JYVÄSKYLÄN AMMATTIKORKEAKOULU
JAMK UNIVERSITY OF APPLIED SCIENCES



Tekijä(t) PARTANEN, Sami	Julkaisun laji Opinnäytetyö	Päivämäärä 29.11.2011
	Sivumäärä 40	Julkaisun kieli Englanti
	Luottamuksellisuus () saakka	Verkkojulkaisulupa myönnetty (X)
Työn nimi MAINTENANCE COMPANY'S SPARE PART LOGISTICS INTO RUSSIA		
Koulutusohjelma Degree Programme in Logistics Engineering		
Työn ohjaaja(t) SEPPÄLÄ, Ami		
Toimeksiantaja(t) KOKKO, Ari, Finnair Tekniikka Oy		
Tiivistelmä <p>Vasta viime vuosina Venäjä on avautunut länsimaisille yrityksille potentiaalisena maana liiketoiminnan harjoittamiseen. Monet yritykset ovat ryhtyneet toimenpiteisiin liiketoiminnan laajentamiseksi Venäjälle huolimatta merkittävistä toiminnan riskeistä ja esteistä. Harjoitettaessa vienti- ja tuontitoimintaa yksi suurimmista konkreettisista ongelmista on Venäjän tullin toiminta.</p> <p>Tämän opinnäytetyön tavoitteena oli analysoida ja kehittää lentokoneen varaosien kuljetusprosessia Venäjällä sijaitseviin Finnair tekniikan toimipisteisiin. Lisäksi tavoitteena oli selvittää yleisen ja kansainvälisen huolintatoiminnan toimintamalleja, sekä toiminnan vaatimuksia Venäjälle suuntautuvassa viennissä. Tietoa kerättiin haastatteleamalla kuljetuspalveluita tarjoavien yritysten henkilöstöä, sekä selvittämällä muista lähteistä Venäjälle suuntautuvien kuljetuspalveluiden yleistä tasoa.</p> <p>Opinnäytetyön tarkoituksena oli tuottaa Finnair Tekniikka Oy:lle lähtökohtainen ehdotus yhtiön Venäjälle suuntautuvan varaosaliikenteen kehittämisestä, sekä verrata palvelun ulkoistamisen ja Venäjälle etabloitumisen vaihtoehtoja. Analysoimalla haastatteluista kerättyjä tietoja, saatiin lopputulokseksi ehdotus yhteistyömuodoista erityyppisissä varaosakuljetuksissa.</p>		
Avainsanat (asiasanat) Huolinta, tullaustoiminta, varaosa, lentokonehuolto, Venäjä.		
Muut tiedot		



Author(s) PARTANEN, Sami	Type of publication Bachelor's Thesis	Date 29.11.2011
	Pages 40	Language English
	Confidential () Until	Permission for web publication (X)
Title AIRCRAFT MAINTENANCE COMPANY'S SPARE PART LOGISTICS INTO RUSSIA		
Degree Programme Degree Programme in Logistics Engineering		
Tutor(s) SEPPÄLÄ, Ami		
Assigned by KOKKO, Ari, Finnair Technical Services		
Abstract <p>Not until some years ago, Russia has opened up for western companies as a potential place to do business. Many companies have begun establishing business there despite the relatively high barriers of entry. When doing business in Russia, one of the biggest problems in operating in import and export business is caused by the operations of the Russian customs.</p> <p>The aim of the thesis was to make a research about and analyze the process of transporting aircraft spare parts into Finnair's maintenance sites in Russia as well as to think how to develop the process. To understand the process better, it was essential to study general issues about forwarding and international forwarding as well as the requirements of transporting into Russia. The information was gathered by interviewing the staff in transport companies and by finding out what is the level of service in Russia in different companies.</p> <p>The purpose of this thesis was to produce a proposal for Finnair Technical Services on how to develop their spare parts logistics into Russia and to compare the options of outsourcing and establishing a business into Russia. By analyzing the information gathered from the interviews, a final proposition about co-operating in different cases was produced.</p>		
Keywords Forwarding, customs procedures, spare parts, aircraft maintenance, Russia.		
Miscellaneous		

TABLE OF CONTENTS

1	INTRODUCTION	1
1.1	Purpose of the Thesis	1
1.2	Research Methods	2
1.3	Companies Participating in the Study	3
1.3.1	Finnair Technical Services	3
1.3.2	DHL	3
1.3.3	FedEx	4
1.3.4	Itella Logistics	4
2	DEFINITIONS	5
2.1	Import- and Export Duty	5
2.2	Trans shipment	6
2.3	AOG Situation	6
2.4	ETA and EFTA	7
2.5	GATT-Agreement	7
2.6	GSP-System	7
2.7	RZD	8
2.8	IRU	8
2.9	ADR-Clause	9
2.10	CIS-Country	9
2.11	IATA and IATA-DGR	9
2.12	AWB	10
2.13	ICAO and ICAO-TI	10
3	DGR Transports	10
3.1	Package Markings and Labeling	11
3.2	Class 1 Explosives additional regulations	11
3.3	Classification of Dangerous Goods	11
4	ESTABLISHING BUSINESS IN RUSSIA	12
5	LOGISTICS OPERATIONS	13
5.1	Forwarding	13
5.1.1	Forwarding Contracts	14
5.2	Incoterms	15
5.2.1	Recommended Delivery Terms to Use in Russia	16

5.3	Air Freight.....	17
5.3.1	Equipment.....	17
5.3.2	Air Freight Documents.....	18
5.3.3	Restrictions Concerning Air Freight.....	19
5.4	Customs Treaties.....	20
5.4.1	EU Customs Union.....	20
5.4.2	Treaties Between EU and Third Countries.....	21
5.4.3	EU and WTO.....	21
5.4.4	TIR-carnet -System.....	22
5.4.5	ATA-carnet –System.....	23
5.5	Traffic Between Finland and Russia.....	24
6	ANALYSIS OF THE INTERVIEWS.....	25
6.1	Itella Logistics.....	25
6.2	FedEx.....	29
6.3	DHL.....	31
7	CONCLUSIONS AND FINAL DISCUSSION.....	35
8	REFERENCES.....	38

1 INTRODUCTION

1.1 Purpose of the Thesis

Purpose of this thesis is to provide a starting point for Finnair Technical Services, FTE, as they want to improve their logistics operations in Russia. Russian market is quite a new operating area for FTE with its legislation and custom procedures. At the moment FTE handles one-time spare part deliveries to a few clients and they want to make their transport procedures to Russia more fluent. FTE also wants information gathered on strong operators in the Russian transportation market and is also working on acquiring new customers. FTE is looking for a partner who is a big player in the transportation business as in their current state they cannot provide fast enough service. Also the company should have knowledge and experience on handling valuable and delicate shipments. This thesis will also show to FTE what kind of responsibilities will be left for them to do when dealing with a shipment to Russia.

The task was to analyze three or more companies by conducting a series of interviews and to map out the strengths of each company and to get a general picture on how the companies handle their Russian traffic. One issue was also to determine whether FTE should found a new place of business to Russia where an associate or a service provider takes care of receiving the goods and the local customs procedures. The second option is to choose a service provider who can provide the same service in their own facilities. The way to reach the final conclusion is to analyze the interviews done in companies and to study them based on requirements set by Finnair Technical Services.

1.2 Research Methods

In order to gather the necessary data to make the final conclusions, theoretical research and experience in the field was required. To get the experience in the field, visits to the premises of airport several times were organized as well as conducting interviews in several companies. Theoretical data was gathered from e-mails, aviation regulations, internet documents and books.

Three internal interviews at Finnair Technical Services' forwarding unit were conducted to map out their current situation in their Russian logistics operations. It was also necessary to find out which issues were thought to be the most essential bottlenecks, according to different people, during their operations and what exactly is the desired situation they want to have concerning their Russian logistics operations.

The second set of interviews was made in several potential co-operation companies to map out their level of service and to see if they fulfilled the needs that FTE has. This information is important to be able to make a comparison between the companies and thus make the final proposal of the co-operation.

The most important factors that FTE emphasizes when choosing the co-operation partner are:

- Safety and reliability
- Accuracy in deliveries and flexibility
- Scope of service and time of transport
- Cost effectiveness and cost

In addition the task was to find out if the companies are able to organize an example case that was given by FTE. The case was transportation of an airplane part, value 70 000EUR, weight approximately 20kg and dimensions 60x50x40cm to St. Petersburg. This case is fictional.

1.3 Companies Participating in the Study

1.3.1 Finnair Technical Services

Finnair Technical Services, FTE, is a part of Finnair corporation and it provides both full maintenance service as well as separate repairs to Finnair and other airline companies. Their service is adapted individually the needs of every client and they have readiness to maintain several different types of engines and hull types. (About us, 2011.)

FTE's business unit is formed by two Finnair Group subsidiaries; Finnair Technical Services Ltd and Finnair Engine Service Ltd. Finnair Technical Services' core business is aircraft and component repair and overhaul. The latter focuses on engine and landing gear repair and overhaul. Together these two companies provide full maintenance service to their customers. (Op. cit. 2011.)

1.3.2 DHL

DHL was established in 1969 in San Francisco by three American entrepreneurs. Their business idea was to deliver customs clearance documents from San Francisco to Honolulu by air courier. Over the course of years DHL's network grew larger and larger and eventually reached every corner of the world. The company developed its operations according to the client's changing needs both globally as well as in the local level. (Tietoa DHL:stä, 2011.)

Today, DHL's service network covers over 220 countries and areas all over the world. The company's expertise is strong in the fields of express deliveries, air and sea freight, road transportation, contract logistics and international mail services. (Op. cit. 2011.)

1.3.3 FedEx

FedEx was founded in 1971 originally with the name Federal Express Corporation. It was founded in the town of Little Rock, Arkansas in the United States by Fred Smith. After moving the company to Memphis, Tennessee in 1973, caused by the lack of support from the Little Rock national Airport, they started overnight operations to twenty-five cities in the United States. Their services included overnight and two-day package and envelope delivery services. They began to market the company as “the freight service company with 550-mile-per-hour delivery trucks” which meant the fourteen Dassault Falcon 20 aircrafts that the company had. (FedEx Express, 2011.)

In 1994, Federal Express adopted the name “FedEx” name, which had been unofficial abbreviation until that time. Also in the same year, FedEx launched Fedex.com and was the first transportation company to offer online package tracking service, this allowed customers to do their business over the internet. In the year 2000 the company dropped the “Federal Express” name and became “FedEx Express” to separate its express shipping service from the parent company. (Op. cit. 2011.)

Today FedEx Express is the largest airline in the world, when talking about freight tons flown and the world’s second largest in fleet size. They deliver freight and packages to more than 375 destinations in almost every country each day. (Op. cit. 2011.)

1.3.4 Itella Logistics

Itella Corporation, formerly known as Suomen Posti, is a national mail enterprise owned by the Finnish state. Itella does business in fifteen countries, mainly around Scandinavia, the Baltic area and Eastern-Europe. Their operations are divided into three different sections: Itella Mail Communication, Itella Information, and Itella Logistics. (Itella lyhyesti, 2011.)

Itella Mail Communications takes care of delivering parcels, direct advertisements, newspapers and magazines in Finland, it also produces all the stamps used in Finland. Itella Information works in the field of handling and distributing companies' information flow. It is specialized in electronic billing and outsourcing financial administration solutions. Itella Logistics' branches are forwarding and freight, transporting and distributing, and warehousing. Itella Logistics has over thirty offices in eight countries. (Op. cit. 2011.)

2 DEFINITIONS

2.1 Import- and Export Duty

When importing goods an import duty must be carried out in addition of value added tax. If the goods are imported from outside EU, a so called third country custom duty must be paid. This duty in accord with a tariff must be carried out unless some special quotas or custom suspensions decrease or remove this duty. Import duty is usually a value duty, which means that the duty is calculated as a percentage of the customs value. Some of the items' duties are carried out as quantity duty for example according to the weight or quantity. The duty is determined by the class in which the goods are categorized. (Mitä tavaran tuonti maksaa?, 2011.)

From all goods that are exported outside the EU an export duty must be paid. Usually the goods are exported permanently, so that they will not be brought back to EU. Exporting can also be temporary for example in case of a fare or exhibition. Temporarily exported goods are meant to be brought back in the same condition after use. (Mitä on vienti?, 2011.)

Between EU countries an export declaration is not needed although an Intrastat-declaration must be made to compile statistics on foreign trade if the value of export is more than 500 000 € (in the year 2011). The export declaration must be made so that the customs official can supervise the possible exporting restrictions and forbiddances

of the goods, collect foreign trade statistic, carry out possible export duties (these are not used inside EU at the moment) and supervises the exiting of the goods from EU area. There are also other reasons to making an export declaration. Goods sold to outside EU are value added tax free. By providing an export declaration which confirms a good's exiting the EU area, the seller can show why the selling has been made without value added tax. (Op. cit. 2011.)

2.2 Trans shipment

Trans shipment means shipping goods to an intermediate country and from there to a third country. These shipments are not bought into the intermediate country, they are not declared in it nor are they compiled on the intermediate state's export statistics. (Transit transport, 2011.)

2.3 AOG Situation

Aircraft on Ground , AOG, is a term in aviation maintenance indicating that there is a problem serious enough to prevent an aircraft from flying. Usually it creates a rush to acquire the parts to get the aircraft back into service, and prevent further delays or cancellations of the planned itinerary. AOG applies to any aviation materials or spare parts that are needed immediately for an aircraft to return to service. AOG is also used to describe critical shipments for parts or materials for aircraft that is "out of service" at a location. (Aircraft on ground, 2011.)

When an aircraft has AOG status and required materials are not available at the aircraft's location, parts and personnel must be transported to the location of the grounded aircraft. Usually the problem is escalated through an internal AOG Desk, then the manufacturer's AOG Desk, and finally competitors' AOG Desks. All major air carriers have an AOG Desk and it is manned 24 hours a day, 7 days a week by personnel trained in purchasing, hazardous materials shipping, and parts manufacturing and acquisition processes. (Op. cit. 2011.)

If an AOG situation happens, the carrier's responsibility is to move the passengers to a later flight or sometimes even provide accommodation for them if the next flight is for example on the next day.

2.4 ETA and EFTA

ETA, European Trade Association, consists of the EU member states and EFTA countries excluding Switzerland. ETA contract was made in 1994. EFTA, European Free Trade Association, was founded in 1960 to promote the free trade between its member states. Finland resigned from EFTA in 1995. Current member states are Iceland, Liechtenstein, Norway and Switzerland. (EU-, Eta,- Efta,- and Schengen-countries, 2011.)

2.5 GATT-Agreement

The General Agreement on Tariffs and Trade, which was signed on 1947, is a multilateral agreement regulating trade among 153 countries. The purpose of the GATT is the "substantial reduction of tariffs and other trade barriers and the elimination of preferences, on a reciprocal and mutually advantageous basis". It was replaced by the World Trade Organization in 1995. The original GATT text is still in effect under the WTO framework, subject to the modifications of GATT 1994. (GATT/WTO, 2011.)

2.6 GSP-System

Generalised System of Preferences is used to promote the integration of developing countries into world trade by granting the countries customs benefits. It can promote the economic growth of developing countries and reduce poverty. This system encourages sustainable development and following the principles of good management. (EU:n yleinen tullietuusjärjestelmä, 2011.)

2.7 RZD

The Russian Railways is the government owned national rail carrier of the Russian Federation, which headquarters is located in Moscow. The Russian Railways operate over 86 000km of common carrier routes as well as a few hundred kilometres of industrial routes, making it the second largest network in the world exceeded only by the United States. The Russian Railways was created in 1992, to take over existing lines within Russia from the Soviet Union. It has also monopoly in Russia. (The company, 2011.)

2.8 IRU

The International Road Transport Union, IRU, was founded in 1948. It acts as advisor in all issues concerning international road transporting. It also is guarantor of the TIR-carnet system. IRU aims to:

- Be initiative in issues concerning the safety, cleanliness and economic points of the cars.
- Point the operators into reasonable use of equipment, maintenance and to the driver's working conditions.
- Advance road safety and to reduce traffic jams.
- Improve nature friendliness of the vehicles.
- Create good relationship with national, international and private competent authorities.
- Harmonize and simplify procedures in road transporting.
- Guide the industry in national and international legislation issues.
- Protect international transports and trade. (Karhunen, Hokkanen 2007, 34)

2.9 ADR-Clause

Governed by the UN, the ADR – treaty, European Road Transport Regulation on dangerous goods, includes the directions concerning the transporting dangerous goods. ADR clause is used in international dangerous goods transportations. In 2009 EU-commission published a directive which relates to transporting dangerous goods on land; it covers road-, railroad-, and inland water transportations. The directive includes restrictions in transporting concerning e.g. bridges and tunnels. (Mikkonen 2009, 34.)

2.10 CIS-Country

The Commonwealth of Independent States, is a regional organization whose participating countries include former Soviet Republics, formed during the breakup of the Soviet Union. (Commonwealth of Independent States, 2011.)

2.11 IATA and IATA-DGR

International Air Traffic Association, is an international industry trade group of airlines. It was founded in 1945 and its mission is to represent lead and serve the airline industry, at the moment it represents 230 airlines. Some of its activities include acting as a price setting body for international airfare as well as assigning the three letter airport codes and two letter airline designators, which are commonly used worldwide. All the airline rules and regulations are defined by IATA. The main aim of IATA is to provide safe and secure transportation to its passengers. (Our mission at the Air Transport Industry's side, 2011.)

IATA-DGR is a collection of instructions for safe handling and packaging of dangerous goods in air transporting. (Vaarallisten aineiden ilmakuljetukset, 2011.)

2.12 AWB

Airway Bill, used in air transport. It holds all the information of the transport, place of departure, destination, definition of goods, the size of the package etc. Similar to the bill of freight used in land transport. (Karhunen et al. 2007, 166.)

2.13 ICAO and ICAO-TI

A specialized agency of the United Nations, the International Civil Aviation Organization was created in 1944 to promote the safe and orderly development of international civil aviation throughout the world. It sets standards and regulation necessary for aviation safety, security, efficiency and regularity, as well as for aviation environmental protection. The Organization serves as the forum for cooperation in all fields of civil aviation among its 190 member states. (Karhunen et al. 2007, 33.)

ICAO-TI is a collection of instructions concerning the technical regulations of air transporting of dangerous goods “Technical Instructions for the Safe Transport of Dangerous Goods by Air, Doc 9284-AN/905”. (Vaarallisten aineiden ilmakuljetukset, 2011.)

3 DGR Transports

Dangerous goods are solids, liquids or gases that can be harmful to people, other living organisms, property or the environment. Every material that has been classified as a dangerous good has its own four digit UN-number code that allows it to be identified. (Mikkonen 2009, 38.)

A dangerous good is classified into its respective class according to its main characteristic of danger and the characteristic is marked in a warning label. The material may have several dangerous characteristics and they are marked in an extra label. The label is often a diamond shaped, has a symbol of the danger and it is

coloured according to the danger for example flammable materials have a red label and toxic gases green. (Op. cit. p. 38.)

3.1 Package Markings and Labeling

Package markings and their validity is the sender's responsibility. The transporter has to check that the package markings are attached to the cargo but he can trust the markings made by the sender to be valid. Every package must be marked with the material's UN-number and the danger labels. The labels of the actual danger and possible additional danger are to be placed next to each other. This is to prevent misunderstanding the danger characteristics during transport. (Mikkonen 2009, 68.)

3.2 Class 1 Explosives additional regulations

Each class 1 package must have the official name of the material written on it. In international transports it must be in one of the ADR languages which are English, German and French. Class 1 warning labels must be marked with the danger class and the compatibility letter. (Mikkonen 2009, 68.)

3.3 Classification of Dangerous Goods

There are nine categories and each category has several subcategories to further clarify the danger, where the material can be placed. They include:

- Class 1, Explosives
- Class 2, Gases
- Class 3, Flammable Liquids
- Class 4, Flammable Solids
- Class 5, Oxidizing Agents and Organic Peroxides
- Class 6, Toxic and Infectious Substances

- Class 7, Radioactive Substances
- Class 8, Corrosive Substances
- Class 9, Miscellaneous (Mikkonen 2009, 38.)

For this thesis the most relevant class was class 1 explosives because one item which are obligatory in aircrafts are emergency torches which contain phosphorus and are therefore classified as explosives. The explosive class is further divided into 6 subclasses from 1.1 through 1.6. Starting from the most dangerous class the order is: 1.1, 1.5, 1.2, 1.3, 1.6 and 1.4. The torches are classified as 1.4 the least dangerous subclass in explosive category. Also all materials in class 1 have a compatibility class, which is marked as a letter and used when transporting different exploding materials in one vehicle. It is used to separate those materials which cannot be transported in a same vehicle. (Op. cit. p. 39.)

4 ESTABLISHING BUSINESS IN RUSSIA

The Russian market is geographically as close to Finland as the Swedish market. The connections to Russia work just as well as in for example European internal market. The airplanes and trains operate and you can even use your own car to visit the neighboring areas in Russia. But still expanding business to Russia causes more weighing and speculating than expanding to a new EU country. (Aitio, Alho, Esilä, Filppula, Kaasalainen, Kairento, Kekki, Laakso, Lumijärvi, Matilainen, Nurmilaukas, Rinne, Ruohonen, Smirnoff, Stenholm, Stepanova, Tiirikainen, Tiri & Vimpeli. 2009, 80.)

Many Finnish companies have been transporting goods over to Russia since the Soviet Union times. The new Russia and their new economic order have encouraged Finnish enterprises to move to Russian market again. Finnish companies have thought Russia as a natural business partner for decades and the information on the market is held well up to date. The means to succeed in your business in Russia are pretty much the same as anywhere else. Usually these means are skilled personnel, well planned and implemented marketing campaign, well chosen area and target group, correct product,

competitive prices and active production and logistics. These actions also work in Russia. (Op. cit. p. 80.)

5 LOGISTICS OPERATIONS

5.1 Forwarding

Forwarding is an essential part of the activities included in foreign trade and international freight. Along with globalisation and expanding market areas, forwarding has become increasingly important part of the logistics chain.

According to Hokkanen, Karhunen & Luukkainen (2004, 133) there is no mention of forwarder in Finnish law. For this reason a collection of rules called “General Conditions of the Nordic Association of Freight Forwarders” has been compiled. They are the rules that Finnish forwarders follow as they carry out their business.

According to the conditions the forwarder has several duties and responsibilities. The most important ones are:

- *The duty to operate*, which begins when the forwarder and the client have made a deal about co-operation and the forwarder has received the assignment. The most important duty is to work without delay. In the duty to delivery is included choosing the representatives and freighters and delivering the action plan for them.
- *The duty to inspect*, which means the forwarder has a responsibility to check and inspect the goods and their packing’s condition, amount, markings, numbers, documents etc. in different stages of the transport chain.
- *The duty to follow the action plan*, which means that the action plan which was made by the forwarder and the client has to be followed throughout the transporting chain.

- *The duty to report*, which is made to avoid ceasing of the transporting due to a failure in the information flow. The forwarder is required to give the client information about the moment of loading, destinations, and when the goods need to be ready for transport and also the schedule when the forwarder or the customs must have all the required documents. Also every possible unusual matter such as delays and their consequences must be reported.
- *The duty of loyalty*, which means that the forwarder has a responsibility in exchange of compensation to look after the shipment and all related procedures.
- *The duty to account*, in cases when the forwarder collects funds under the name of the client. The forwarder is then duty-bound to account the funds to the client immediately. (Op. cit. p. 133-134.)

5.1.1 Forwarding Contracts

The relation between the client and the forwarder is defined by the contract made by the two which can include how to handle the customs documents or other documents concerning the commission, getting insurance, performing transportation or providing it and possible warehousing and distribution. For the contract, the client requests the forwarder to make an offer of the expenses in the country of departure and destination or an offer of forwarding and transporting. The forwarder answers to the request by making an offer. General conditions of the Nordic Association of Freight Forwarders is attached to the contract to which the offer's delivery terms refer to. The transportation part is confirmed by a "routing order" document signed by the freight payer. If nothing else is arranged it can be said that a contract has been made when a forwarder receives an assignment from the client. (Karhunen et al. 196.)

The Union of Forwarders recommends those companies that use freight services many times in a year to make an annual contract. This contract is a skeletal agreement which holds the prices of forwarding and transporting as well as the volume of the goods to be handled and transported. The annual contract helps to simplify the forwarding routines because the client can give the forwarder permanent instructions on handling

the goods and because of this the assignment will get simpler. Along with long-term co-operation operative activity gets more efficient as the two sides get to know each other's methods of working. (Op. cit. p. 196.)

Forwarding contract binds the forwarder to perform the duties given to it and to make necessary contracts with third party. In addition the forwarder agrees to follow the general conditions of the Nordic Association of Freight Forwarders and to fund and pay any fees like freight, taxes and payments on behalf of the client. These payments will be charged later by the forwarder with forwarding bill. Respectively the client commits to pay the agreed fee and to follow the duties and responsibilities written in general conditions of the Nordic Association of Freight Forwarders. (Op. cit. p. 196-197.)

5.2 Incoterms

One of the things that the buyer and seller need to cover during the transaction is settling the delivery terms. The purpose of the delivery term is to define a common interpretation of cost-, damage- and procedure responsibilities in anywhere in the world. The delivery term of the deal not only affects the buyer and seller but also any third parties like transporters, loaders and forwarders and customs administration. (Hokkanen et.al. 2004, 137.)

To rule out especially the threatening factors in international transport, a collection of regulations called Incoterms has been made by the ICC – International Chamber of Commerce. These regulations define the content of the most common commercial terms. The commercial terms are used to divide the transaction costs and responsibilities between seller and the buyer. (Op. cit. p. 137.)

Group E (Point of departure)	EXW	Ex Works, retrieved from the sender
Group F (Freight not included)	FCA FAS FOB	Free Carrier Free Alongside Ship Free On Board
Group C (Freight included)	CFR CIF CPT CIP	Cost and Freight Cost, Insurance and Freight Carriage Paid To Carriage and Insurance Paid To
Group D (Point of arrival)	DAF DES DEQ DDU DDP	Delivered At Frontier Delivered Ex Ship Delivered Ex Quay Delivered, Duty Unpaid Delivered, Duty Paid

FIGURE 1. *Incoterms*.

5.2.1 Recommended Delivery Terms to Use in Russia

The least inconveniencing way for the seller to deliver the goods for the client is to use ex works/Free carrier, FCA, terms. These terms are used for example in a case when it is known that it is smoother to get the goods over the border when the customer does it. The client might have their own affordable transportation system and so during the price negotiations the focus can be the production cost.

The terms can be divided into four groups, E-, F-, C- and D-group. In the E-group, ex works, the seller's risks have been minimized. The responsibilities and control over the distribution channel are increased progressively when moving on to the F- and C-groups. In D-group the goods are handed in buyer's presence, which means that all the costs of transport, insurance etc has to be taken care of by the seller, but at the same

time the whole transportation chain is in the seller's control. (Hokkanen et.al. 2004, 138-139.)

When using ex-works, the buyer handles all the risks and costs. He must arrange the transportation and everything connected with receiving the goods. There is also clause called DDU, which means Delivered Duty Unpaid. In this case the seller supplies the goods answering about all risks and costs until the goods reach the customs, after that the buyer takes care of all custom charges and taxes. These two clauses are the safest ones to use for the seller.

5.3 Air Freight

5.3.1 Equipment

Air freight uses partly the same equipment as passenger traffic. The cargo space below is identical in passenger- and in freight aircraft, but in freight aircrafts the cabin compartment has been modified to be the upper cargo space. The cargo capacity of the aircraft varies from smaller aircraft's few cubic metres all the way up to Boeing 747's over 700 cubic metres cargo compartment. Cargojumbo can carry 112 tonnes. For carrying heavier cargo, larger aircrafts have been built, like Antonov An225 "*Mriya*", which can carry about 250 tonnes and Antonov An124, which can carry up to 150 tonnes. Both of these aircrafts have over 1000 m³ cargo compartment. They are used for special transports as well as Airbus a300-600ST "*Beluga*", which is equipped with a 1400m³ cargo compartment. (Karhunen et al. 2007, 164-165.)

According to Karhunen (2007, 165) there are no actual freight aircrafts listed in the Finnish aircraft register, but companies that offer freight services and have their equipment and alliance companies registered abroad fly frequent freight flights from Finland. An aircraft can be leased by either dry leasing or wet leasing principle. Dry leasing means that an air carrier leases just an aircraft for their own use and in wet leasing the carrier leases the aircraft and crew plus maintenance- etc. services if needed.

5.3.2 Air Freight Documents

The contract of carriage is written into an airway bill, AWB. According the air freight law, filling out the airway bill is the sender's responsibility. Three original copies of airway bill are made from which one is given to the sender, second for the carrier and third for the receiver. The bill is not a negotiable document so the sender maintains control over goods even after handing them over to the carrier. The airway bill is:

- The carriers receipt that it has received the goods for transporting
- A contract transport between the sender and the carrier
- Instructions on handling the goods during transport
- Customs clearance document
- Bill of freight
- When needed, proof of insurance, if insurance is attached. (Karhunen et al. 2007, 166.)

Air carriers use the IATA set carriage conditions which define the carrier's rights and duties. In case of damage the sender is liable to compensate if he has provided misinformation of the goods. (Op. cit. p. 167.)

Air carriers publish their freight cost in international currency. The freight pricing is based on the weight of the goods and it is given in kilo price. Air freight's weight of volume is determined by dividing the volume of the shipment by 6000. If the gross weight of the shipment is left smaller than the estimated weight of volume, it is used as the ground of carrying. (Op. cit. p. 167.)

According to IATA's instructions, air freight pricing is divided into four freight classes:

- General cargo Rules
 - basic prices for shipments under 45 kg

- volume discount classes when the weight exceeds 45, 100, 300 and 500 kg
- Class Rates
 - for certain prices declared in tariffs
- Commodity Rates
 - discounted freight rates between certain locations
- Unit Load Device, ULD
 - large unit –pricing (Op. cit. p. 167.)

Forwarders also perform consolidating small shipments when several small shipments are transported on same route. In that case a master airway bill, MAWB, is written out between the forwarder and the air carrier, also for every single shipment a house airway bill, HAWB, is made. The benefit of consolidating for the client is the reduction of freight rates. (Op. cit. p. 167.)

Most of the air carriers and couriers offer tracking service for the shipments, where a client can follow the shipment over internet with provided number of the airway bill. In addition many traditional air carriers have extended their service to door-to-door. (Op. cit. p. 167.)

5.3.3 Restrictions Concerning Air Freight

The dimensions of cargo crates are restricted by the sizing of the doors and the maximum carrying capacity of conventional aircraft. Size of the shipment is limited by the size of the cargo compartment. Following chart shows the sizes of cargo compartments and maximum dimensions of loading doors used in some of the aircraft types in Finland. The loading doors in a proper freight aircraft are considerably larger than in those used for passenger traffic. Commercial airlines may restrict the freight capacity in certain routes to allow more passenger freight. Route possibilities for large freight air crafts are restricted by the length and width of the runways. (Karhunen et al. 2007, 165.)

Aircraft Type	Size of the cargo compartment (m³)	Carrying capacity (kg)	Largest package size (cm)
Airbus A319	18	5 000	143 x 108 x 146
Airbus A320	18	5 000	143 x 108 x 146
Airbus A321	18	5 000	143 x 108 x 146
Boeing 747F	140	100 000	310 x 305 x 511
Boeing 757	15	3 000	106 x 139 x 152
Boeing MD11	85	28 800	162 x 259 x 320
Boeing MD80	25	4 000	132 x 75 x 127

FIGURE 2. *Types and cargo hold specifications of cargo aircrafts.*

Packing, marking and restrictions concerning the contracting states of dangerous goods are defined in ICAO-TI. Transportation instructions of dangerous goods have been collected into IATA's DGR –book. (Op. cit. p. 166.)

Shipping of certain valuables like money, stocks, promissory notes, jewels, art, antiques etc. can be denied, restricted or the shipping must be arranged as special freight under supervision. Some transport companies are concentrated especially to transporting valuable goods. Transportation of valuable goods requires special insurance. (Op. cit. p. 166.)

5.4 Customs Treaties

5.4.1 EU Customs Union

The EU treaty has a mention that describes the foundation of the union to be a customs union which includes all kind of trade. It means that all export- and import duties along with any similar payments between the member states are prohibited. In addition a common tariff is implemented in relation to the third countries. According to the 26. and 27. articles the council confirms the customs tariff duties suggested by

the commission. The foundation of the commission as they manage the duties connected to the customs union is:

- The need to promote trade between EU member states and third countries.
- Development of conditions of competition within the union to the extent that it improves companies competitiveness.
- Matters concerning receiving raw materials and semi-finished products, in which case the commission makes a point that the conditions of competition for finished products between member states are not misrepresented.
- The need to avoid severe disruptions in the member state's economies and the need to secure the rational development of the production and growth of consumption in the union. (Karhunen et al. 2007, 38.)

5.4.2 Treaties Between EU and Third Countries

EU has made a reciprocal agreement with ETA-, EFTA-states and European countries that are not EU members about removing custom duties. In addition one-sided agreements about importing goods without customs duties have been made with some Mediterranean countries, African countries, the Caribbean area and the Pacific countries. (Karhunen et al. 2007, 38.)

5.4.3 EU and WTO

In 1995 World Trade Organization, WTO, was founded. Up to day 148 countries has joined to it. WTO is the follower of the 1995 GATT-treaty and its function is to develop and to globally supervise the rules of international trading. The WTO-treaty, which is administered by the organization, is a treaty, which consists of three principles, trading of; goods, service and mental capital. (Karhunen et al. 2007, 39.)

EU is a significant factor in WTO with 27 countries where the other countries are mostly developing countries. The commission negotiated a private contract with Russia in spring 2004 which aimed to include Russia in WTO. In addition the commission has tried to include a procedure like the GSP-system to the WTO-treaty, in which case all of the WTO member states would commit to equally support the developing countries. (Op. cit. p. 40.)

5.4.4 TIR-carnet -System

To speed up international road transport and to cut the driver's working time, a TIR-carnet treaty has been created for traffic which crosses borders and it also aims to ease the customs procedures. The system is based on TIR convention in 1975 which covers the international transporting of goods. TIR-treaty leans on an international warranty system which has been practically established by IRU with its member unions.

Benefits gained along with the treaty are:

- For the authorities:
 - Decreases the amount of work done by authorities in the trans shipment country.
 - Decreases the amount of document fraud.

- For the user:
 - Decreasing customs procedures.
 - Making international trade more effective.
 - Decrease in the transporting cost due to shorter transport time.
 - Greater freedom to choose the mode of transport. (Karhunen et al. 2007, 40.)

When using TIR-carnet the customs authorities in the country of departure seal the container of the vehicle after which the vehicle can pass the border inspection posts without inspection formalities to its destination where the seals are removed under

supervision of customs authorities. In Finland TIR-carnet is provided by Suomen Kuljetus ja Logistiikka SKAL ry. (Op. cit. p. 41.)

SKAL has signed a contract made by the Finnish customs authority to pay claims caused by misusing the carnets up to 50 000 USD. The warranty chain requires a guarantee of 5 000 USD from a company that is listed in the system. A transport which goes to or through Belarus, Russia, Kazakhstan or Ukraine requires a guarantee of 8 000 USD. A company that transports risky goods must also pay a guarantee of 50 000 USD. (Op. cit. p. 41.)

According to TIR convention customs safety dictates that the containers and vehicles that will be sealed and used for TIR transport can be only accepted if their loading space have been build so that:

- No goods can be removed from or added to the sealed part of the container or vehicle in a way where no traces will be left or so that the seal will not be broken
- The custom seals can be attached simply and efficiently
- They do not have any concealed space where goods can be placed
- All space used to store goods can be easily inspected at the customs inspection point. (Op. cit. p. 41.)

To reach the goal, the convention includes structural standards and acceptance procedures. Goods can be transported under TIR-carnet only if the road vehicle or the container is approved according to these regulations. If the container or cargo unit fulfils the requirements of the convention, appropriate national inspection authority gives the official documents and the sign. (Op. cit. p. 41.)

5.4.5 ATA-carnet –System

ATA-carnet is an international customs document, which can be used to transport goods temporarily to countries that have joined the customs convention. These goods

include exhibition equipment, commercial sample of merchandise and equipment needed to practise a profession for example tools for a mechanic. Terms that allow importing goods temporarily are that the goods are recognisable when re-exporting them and that the number of similar objects is reasonable considering the purpose of their importing. (Karhunen et al. 2007, 43.)

The system eases and simplifies temporary exemption from duty procedure. This system has 61 member countries. ATA-carnet replaces all documents that are needed for exporting the goods from the country of departure and all customs documents required in the country where the goods will be temporarily exported. It includes an internationally acceptable warranty that covers possible customs duty and import duty from the goods. Carnet also operates as trans shipment document. (Op. cit. p. 44.)

ATA-carnet is valid for one year. It is granted by chamber of commerce in the countries that have joined the system. These countries form a security-ring for customs duties. Size of the price that is needed to claim the carnet depends on the total value of the goods mentioned in a list of cargo and on the number of destination countries. In addition the applicant must make a deposit which he will get back after returning the carnet to the chamber of commerce. (Op. cit. p. 44.)

5.5 Traffic Between Finland and Russia

A treaty regarding road transporting between Finland and Russia was made in 1997. It dictates the general conditions of border crossing road traffic, its essential definitions and requirements regarding documents. Traffic is based on licensed trade, both freight- and passenger traffic, and the terms of the license are agreed yearly. On the grounds of the treaty a yearly conference is summoned where they discuss the license issues and other issues considering the treaty. The main rule in a bilateral road traffic treaty, including the treaty between Finland and Russia, is reciprocity. In practice a total balance is impossible. For example after the 1998 devaluation, Russia's competitive position improved substantially which has increased the usage of Russian equipment. As per the treaty any transport that includes transporting dangerous goods

must follow the ADR-transport terms. Though the Russian side has set some of the ADR-material as subjects of license. (Karhunen et al. 2007, 50.)

Up until now connecting railway traffic has followed a convention made by Finland and the Soviet Union in 1948 regarding the railroad traffic between these two countries. In spring 2007 a new connecting railroad traffic convention between Finland and Russia came into effect, which replaced the outdated convention. The basic principle regarding the transporting equipment still remains so that the equipment used in transport must be registered in a CIS-country or owned by a railway operator of a CIS-country. As per the convention any equipment crossing the border is a subject to a technical arrival inspection and the Finnish side pays daily operation fee for equipment owned by RZD (Russian Railways). Similar inspection- and usage charge principle has been included in conventions used in Western Europe. The convention of connecting traffic is governed by regularly convening international connecting railway traffic conference. (Op. cit. p. 50-51.)

6 ANALYSIS OF THE INTERVIEWS

6.1 Itella Logistics

Itella Logistics is a part of the Itella corporation, there are also two more divisions, Itella Mail Communications and Itella Information. Itella has been transporting goods to Russia since the Soviet Union times so they have a good experience on that field. In 2008 Itella Logistics acquired a leading Russian warehousing service provider, NLC, who actually had a 30% market share of the transportations of stored and custom cleared products. NLC had been operating in the Russian logistics market since 1995 and had gained wide experience in implementing various logistics solutions as part of total supply chain management. Since then Itella has co-operated with many international companies such as Colgate, Philips, Canon, Lumene and Whirlpool. Also Finnair Cargo and Blue1 are their customers.

Itella Logistics operates in eight countries in the Nordic and Baltic area. In each of these countries Itella has contract logistics services including warehousing services, logistics centres and inland transporting services. In Russia Itella has a very extensive network of warehouses to ensure as good and fast service as possible. There are 12 logistics centres in Russia and six of them are located in Moscow area. Other locations for them are St. Petersburg, Rostov-on-Don, Samara, Yekaterinburg, Novosibirsk and Vladivostok. Total surface area of the warehouses is 600 000m². Itella is spread around Russia to cover almost every corner of the country; they have a good North-South network of logistics centres around Moscow and Itella plans to invest more to develop their East-West as well as North-South network.

Itella does not clear goods through Russian customs themselves, but they are a registered customer of Russian customs, they use a customs broker called National Customs Broker, NCB, which handles all of the customs procedures in their stead. All goods, which need to be cleared through customs, must go through one of Itella's customs terminals before they can be transported forward. Itella does not have the possibility to clear goods at airports. The goods are then delivered to Itella's service warehouses which are as close to the market as possible, this will ensure fast deliveries to customers and makes their operations more transparent. The service warehouses where the goods are stored are chosen with the customers. Itella also offers additional value-adding services in their warehouses, that include labelling, re-packing and making store stands.

All the warehouses are so called A-class standard. They are built and maintained by Itella's own standards which means that they have:

- Dry inside space
- A-Class security system
 - Security cameras
 - Electric access control system
- Fences around the area
- Guarded 24 hours a day



FIGURE 3. *Itella Logistics' service network in Russia (2011).*

Itella has a 36 hour service principle, which means that they make a promise that they can deliver any goods from one of their warehouses to the customer in maximum of 36 hours. They feel that they can compete very well in transporting goods that are cleared through customs. This is why the network of warehouses is important.

The most important issues, which affect the time of the transport are the location where the goods are cleared, who handles the clearing, correct documentation and information. Most problems which have occurred have been caused by old information given or held by the receiver. Ahonen reckons that good information flow actually speeds up the transporting more than the place where the goods were to be cleared. Any estimation on the price and schedule can be given when Itella gets the information on which customs terminal the goods will be transported.

Itella's value limits for their transports are determined by waybill insurance. It means that the amount of taxes to be paid from the goods is the key element. The customs officials use some formula to determine the amount of taxes which are to be carried from the goods, if the amount of taxes exceeds \$50 000 the options for transporting will be customs convoy or to buy extra collateral security at the border. So if FTE needs to transport an airplane engine, these two choices will apply to that.

The tracking system that Itella uses changes according to the mode of transport. In air transporting they use the airlines' own tracking system and in road transport the tracking is carried out by controllers in both ends, who communicate about this matter and after that the customer receives the information. Basically the customer receives the information when the goods have crossed the border and when it has been unloaded.

The example case was said to be possible to be done as air or road transport, but someone has to clear the goods through customs, after that Itella will be able to transport it to the client. DGR transports are possible by road transport when all the requirements according to the regulations are met by the sender. Transports during the weekend work by air transport, by road it needs to be negotiated separately. Time estimate for the transport to St. Petersburg area is one to two days including only the transporting. Clearing the goods through customs is said to be two to three days, this is by air transport, by road the transport time is up to five days and clearing the goods is added to that. Itella can not provide door-to-door service on it and are not able to compete in a market where most of the shipments are one-time door-to-door deliveries.

Itella's strengths are the ability to transport large quantities by road and store the goods near the market. Once the goods have been cleared through customs, they can be divided around the country thanks to the extensive network of logistics centres and distribution network. Itella has a very large market share in transporting goods inside Russia so they can compete well in that market. Their network of warehouses makes the time of reacting to urgent transports very short, but it of course requires that FTE

would begin storing the spare parts into Itella's warehouses. Itella puts itself into road transporting class rather than courier/package-shipping company.

6.2 FedEx

Almost all of FedEx's shipments from Finland to Russia are trans shipments, meaning that the goods "come through" Finland as they are taken to Russia. They ship hundreds of packages weekly to Russia and they described them as "broker goods", which means that FedEx makes the required clearance permits for the goods for Russian brokers and this is where FedEx's part ends. Shipments to St. Petersburg are said to work quite properly, but they do not recommend shipping outside St. Petersburg.

All shipments to Russia go by air. FedEx offers two different types of service, they are International Priority, which is their express service and fastest and International Economy, which generally speaking adds two to four days to the delivery time. The time it takes to ship goods to St. Petersburg is two days as its fastest but the time which it takes for the goods to clear the customs is not available, it is only said to be the biggest problem. One other thing, which slows down the shipments, is that FedEx has no straight line hauls to Russia, for example currently one of the routes is Helsinki – Copenhagen – Paris – Germany – St. Petersburg. If one wanted to send a package to as close as Tallinn, it would still have to go through Paris. Kandolin says that a delivery time of two or three days is not possible.

The two day delivery time to ST. Petersburg depends on from where inside Finland the package was sent. These areas are:

- The metropolitan area
- Turku downtown area
- Tampere downtown area

This is called Euro 1-area by FedEx and if the package was sent from one of the areas above it will go out of Finland the same day. Some delays may be caused by the address of the receiver.

FedEx offers money back guarantee for International Priority shipments. It means that if the package arrives more than 60 seconds late from the commitment time given by FedEx, the shipping will be free of charge. Delays caused by force majors (earthquakes, blizzards, terrorist attacks etc.) will cancel this warranty. The customer has to report the delay if they want to get refunded, this is not an automatic procedure.

FedEx's value limits for Russia are very low. Limit for shipping to St. Petersburg is \$50 000 and at the moment any shipment's value to Moscow must be \$100 or less, which is extremely low considering the value of the goods FTE deals with. Also most of the shipments that go outside St. Petersburg go through Moscow.

FedEx offers some warehousing solutions in Russia, but does not handle them themselves, they are outsourced. FedEx works with five different agencies that handle their operations in Russia and one of them is GSP, Global Service Partner which handles the area of St. Petersburg.

The example case highlighted some problems in their ability to handle it. Firstly while the value limit to St. Petersburg is \$50 000, it might not be enough for some cases, secondly FedEx limits the weight of shipments to St. Petersburg to 68kg. Thirdly, FedEx does not take any DGR transports to Russia.

Kandolin stresses the part of corruption is huge in the Russian custom operations. They think that unless some regulations will not force the custom procedures to change, "having a bag full of money" is the best way to handle the current situation. Of course FedEx could not possibly be involved in this kind of activity, not to mention FTE. It was said that FedEx could transport the goods operatively speaking, but to keep the service in the commitment times and what is needed, is not possible. They do not want to promise anything that they could not do and possibly even ruin the whole thing. Also they admit that Russia is not by any means their strong area.

6.3 DHL

DHL began its business in Russia already in 1984 and today it operates under the name ZAO DHL International. DHL's service network covers over 500 large and small cities and they have 3000 employees in over 130 offices. They have more than 90 daily air, road and railway trunk routes from Moscow area and a daily flight to St. Petersburg. They use their own network in addition with some dedicated subcontractors.

DHL has different divisions from which each work with different modes of transporting. DHL Express is the courier service, which is the company's fastest method of transporting goods and it is carried out almost entirely by air. DHL Freight is the road transporting division and DHL Global Forwarding handles with maritime, railway as well as road transporting. Heikkonen points out that the most suitable division to answer to FTE's current needs is the Express division.

DHL makes DDU (Delivery Duty Unpaid) shipments to Russia, which means that DHL delivers the goods and is responsible for all risks and expenses until the Russian customs, after that the responsibilities transfer to the receiver who must then take care of the taxes, custom duties and custom formalities.

DHL and Finnair have a group wide contract, which means that DHL handles the freight of the whole Finnair corporation. Those include FTE, engine service, catering and a few travel agencies. The contract was made approximately 6 months ago and thus far DHL has had more than 40 000 shipments for the whole group. FTE is said to clearly be the biggest Finnair unit that DHL serves. Heikkonen also clarifies that best way to use their Express service is to transport single units, which are easy to track and this is because DHL Express' pricing policy says that small packages are cheaper and thus more profitable. Their main focus is not to transport heavy weight packages. DHL Global Forwarding and Freight are more specialized in those areas. He also points out that in the end it is the timetable that defines which division to use and that the contract prices have been negotiated so that even the transporting some heavier packages with Express should be attractive to FTE.

DHL Express does not offer a warehousing solution, the company has a supply chain-unit, which works with custom made warehousing plans. They will take the goods in, unload it and if it has many parts they will place them in their respective places and make new packaging and in the end send the goods forward. This model has been taken a bit further from sheer warehousing and it also requires that FTE has some people taking care of things in that end.

According to Heikkonen DHL is a strong operator in Russia and according to their own research and information they are one of the few operators whose Express system works properly and so that they can answer their customer's needs. Heikkonen then points out that their services are used quite much for this kind of shipments. DHL is a strong operator all over the world and their average delivery accuracy is over 98% for all products that leave from Finland or are imported to Finland. Their strength is also getting goods back to Finland from Russia.

Currently the time which it takes for goods to clear customs is four to five days, this is for goods that need to be cleared through the customs. For documents the time is three to five days. The main reason why goods become to be held in the customs is their value and as FTE's parts and instruments are quite expensive, it is most likely that there will be some delays in the deliveries. Despite the fact that different areas have different cost and procedures in customs, DHL ships wherever the customer wants the goods and does not choose the destinations based on those issues.

When using DHL's services to transport goods to Russia these points have to be taken into account:

- The receiver must be a company that has registered itself with the Russian customs in the area where the goods are being shipped to.
- Most of the high-tech, electronic and mechanical products require the client to have an import license. These licenses must be applied for at the appropriate office.

- Russian customs often requires a copy of the export clearance of the country of export to rule out the possibility of double-billing.
- The bill should be translated into Russian and English. If the bill is not made in Russian a translation fee may be charged.

When FTE has a situation when something needs to be shipped during a weekend, that's when DHL's Same Day-unit steps in. It is a unit that handles all those shipments that go beyond the standard service of DHL. This can mean that it is outside the normal office hours, during weekend or it could be some special delivery. The good thing about this unit is that it is not bound to using only DHL's service network, it will use any necessary method to get the goods where the client wants them. It can use for example Finnair's network, a taxi, a helicopter etc. This is pure custom service that handles only this kind of cases and they will complete the case whether it is outside office hours or during the weekend.

Tracking the goods is important for FTE since all the parts are very expensive and to ensure good quality in their service they need to know and they want to know where the goods are. In addition to the "regular tracking" which updates quite slowly, DHL has a system called "ProView". It is a free internet application which is a pro-active tracking system. It tells in real time where the goods are located at any given moment. It gives a notification if the goods are being held in customs and also the reason for that. This system is very good for a company, which wants to follow closely their shipments and make sure that the quality of service is held up. But this system should not be used for every shipment, because it gives so much information and it can basically "drown" one in it, so it is a double edged sword. When soundly used it is a very good tool.

The example case provided by FTE was said to work without any problems as well as the DGR transports for class 1.4 explosive goods. DGR transports must be made with a charter plane and the maximum weight of the package is 75 emergency torches/kg/package due to the restrictions of the amount of explosive material per package.

Value limit is one of most crucial issues in this kind of transporting. FTE's spare parts are very valuable and many companies have very low value limits for transports to Russia. DHL's limit for the maximum value of the cargo is one million euro and if the value goes above that limit an exception permit will be applied for. Also, the limit is the same in the whole country so it won't be restricted in any specific areas.

DHL's strengths lie in being one of the only companies, that have a functioning Express freight system to Russia and that their value limits for transporting goods are very high. They also have a highly sophisticated tracking system available and can provide warehousing solution if necessary. Their daily flights and trunk routes make their service very consistent and their accuracy and reliability in deliveries are very good.



FIGURE 4. *DHL's main flight routes in Russia (2011).*



FIGURE 5. DHL's offices and gateways in Russia (2011).

7 CONCLUSIONS AND FINAL DISCUSSION

	DHL	FedEx	Itella Logistics
Acceptable value limits	X		X
Warehousing service			X
Express service	X		
Custom/Emergency service	X		
Example case "OK"	X		
DGR Transports	X		X
Adequate tracking system	X		
Plans to develop operations in Russia			X

FIGURE 5. Table showing the strengths of each company.

By analyzing the answers from the interviewees and requirements set by Finnair Technical Services it was evident that there is no a single solution for FTE. Each of the transport companies have different strengths in different areas that fit in different methods of managing the Russian spare part traffic.

If Finnair Technical Services has difficulties acquiring new customers and continues serving its current customers by making one-time deliveries, the best way to handle this kind of traffic would be to make a contract with DHL Express. DHL Express is strong in making one-time door-to-door shipments and the time of delivery is quite short comparing to other operators. They also offer a highly sophisticated tracking system, free of charge, where a company is able to monitor their goods in real time and receive information on possible delays in transport. DHL Express has a department working on cases that take place outside office hours, which uses any transport mode to complete the shipment. This department is not tied to using only DHL's service network. One important issue where DHL has an advantage over other companies is their value limits on the transported goods. DHL's limit is one million euros and if the value of the transported goods exceeds the limit, it can be raised by applying for special permit. DHL is a strong forwarder with activity all over the world and the accuracy of their deliveries is over 98% for shipments that enter or exit Finland.

If Finnair Technical Services manages to acquire new clients in Russia, which would lead to increased number of spare part transports, the most efficient way to operate would be to begin storing the spare parts into certain hubs in Russia. Itella Logistics is specialized in this kind of business, they have a widespread service network of logistics centres and distribution routes inside Russia and the company has a lot of experience in transporting goods to Russia. The corporation has 12 logistics centres in Russia altogether and six of them are located in Moscow area, some of them next to the airports, other logistic centre locations include St. Petersburg and Yekaterinburg. All of the warehouses and logistics centres are A-class and they are built and maintained according to Itella's Finnish standards. After acquiring NLC in 2008, Itella's market share in transporting stored and custom cleared goods reached 30% and it can be said that Itella is the market leader in that field. The company gives a

guarantee of the transport time to all deliveries inside Russia, which is 30 hours. It means that any goods that leave one of Itella's logistics centres will reach the customer in maximum of 30 hours at any location in Russia.

The next steps to develop logistics operations into Russia would be to create a system to keep all the necessary information up to date. This includes all the information about the customs terminals where the goods will be shipped. As Ahonen from Itella said, sometimes the customers who receive the goods don't know in which customs terminal they are registered in or they give old information concerning this issue, which leads to delays in shipping. The other thing to develop is would be to minimize the confusion with the paperwork needed in each shipment, how to get the sender to know exactly which documents, in which languages and how many copies etc is needed to avoid the goods being rejected to enter the county at the customs terminal. Ahonen pointed out that these two reasons are the ones which cause nearly all of the delays in their operations.

Another step, which depends on how FTE will begin to develop their operations in Russia, would be to study and optimize the warehouse stocks and their optimal location. These of course will become timely if FTE begins to store spare parts in Russia, in which case the warehouses must be as close to each customer as possible, without having too many warehouses, which would lead to tremendous stock values and other costs connected to warehousing.

Russia is a remarkable, growing economic area and it has only recently begun to offer the possibility for western companies to enter its markets. The markets have great potential for business and more and more companies set up new places of business there. However, Russia still has quite high barriers of entry into their markets but in the future many western companies have a possibility to achieve a solid position in Russia as the companies learn about the Russian legislation and get accustomed to the local procedures and ways to do business.

8 REFERENCES

Literary and Internet References

Karhunen, J., Hokkanen, S. 2007. Kansainväliset Tavarakuljetukset. Jyväskylä: Gummerus Kirjapaino Oy.

Mikkonen, P., Hokkanen, S. 2009. Vaarallisten Aineiden Maantiekuljetukset. Jyväskylä: Gummerus Kirjapaino Oy.

Luukkainen, M., Hokkanen, S., Karhunen J. 2004. Logistisen Ajattelun Perusteet. Jyväskylä: Kopijyvä Oy.

Aitio, U., Alho, A., Esilä, V., Filppula, O., Kaasalainen, J., Kairento, M., Kekki, P., Laakso, E., Lumijärvi, E., Matilainen, T., Nurmilaukas, T., Rinne, U., Ruohonen, V., Smirnof, K., Stenholm, J., Stepanova, E., Tiirikainen, T., Tiri, M., Vimpeli, S. 2009. Suomalais-Venäläinen kauppakamari, Venäjän Liiketoiminnan Perusopas. Helsinki: J-Paino Hiirikoski Oy.

Finnair Technical Services – About us.

<http://www.finnairtechnicalservices.com/en/about-us.html> *Referred 09/2011*

DHL – Tietoa DHL:stä. http://www.dhl.fi/fi/dhl_tietoa.html *Referred 09/2011*

FedEx Express. http://en.wikipedia.org/wiki/FedEx_Express *Referred 09/2011.*

Itella – Itella lyhyesti.

http://www.itella.fi/group/liitteet/konserni/itella_konsernin_yleisesittely.pdf *Referred 09/2011.*

Finnish customs – Mitä on vienti? <http://www.tulli.fi/fi/yrityksille/vienti/index.jsp> *Referred 08/2011.*

Finnish customs – Mitä tavaran tuonti maksaa?

http://www.tulli.fi/fi/yrityksille/tuonti/mita_maksaa/index.jsp Referred 08/2011

Finnish customs – EU-, Eta-, Efta- ja Schengen-countries.

http://www.tulli.fi/fi/suomen_tulli/tulli_tutuksi/termit_selviksi/EU_Eta_Efta_Schengen/index.jsp Referred 08/2011.

Commonwealth of Independent States.

<http://encyclopedia2.thefreedictionary.com/CIS+countries> Referred 09/2011.

Transit transport.

http://www.stat.fi/meta/kas/transitoliikenn_en.html Referred 09/2011

GATT/WTO. <http://www.law.duke.edu/lib/researchguides/gatt> Referred 08/2011.

Ministry for Foreign Affairs of Finland – EU:n yleinen tullietuusjärjestelmä.

<http://formin.finland.fi/Public/default.aspx?nodeid=37788&contentlan=1&culture=fi-FI> Referred 09/2011

RZD – The company. http://eng.rzd.ru/isvp/public/rzdeng?STRUCTURE_ID=4
Referred 08/2011

Aircraft on Ground. http://en.wikipedia.org/wiki/Aircraft_on_ground Referred 09/2011.

IATA – About us. <http://www.iata.org/about/Pages/mission.aspx> Referred 08/2011.

ICAO in Brief – International Civil Aviation Organization.

<http://www2.icao.int/en/Home/Pages/ICAOinBrief.aspx> Referred 09/2011.

Ministry of Transport and Communications – Vaarallisten aineiden ilmakuljetukset.

<http://www.lvm.fi/web/fi/vak/ilmakuljetukset> Referred 09/2011.

Interviews and Meetings

Cederberg, K., Alakotila, M. 2011. Forwarding Unit. Finnair Technical Services, Helsinki – Vantaa airport. Interview 03/2011.

Lintunen, K. 2011. Technical Forwarding. Finnair Technical Services, Helsinki – Vantaa airport. Interview 04/2011.

Kandolin, J. 2011. Account Executive. FedEx Finland Main Office, Tuusula. Interview 05/2011.

Ahonen, I. 2011. Sales Manager. Itella Logistics Main Office, Tuusula. Interview 05/2011.

Heikkonen, P. 2011. Key Account Manager. DHL Express Finland Office, Helsinki – Vantaa airport. Interview 08/2011.