

# FREIGHT TRANSPORTATION MEANS AND MODES

## OBJECTIVES:

- Discovering the different means of freight transport: specific vocabulary
- Discussing their characteristics, advantages and disadvantages
- Discovering the usefulness to combine many way of transporting freight: multi-modality and inter-modality

FINAL TASK: A multimodal shipment

# TABLE OF CONTENTS

- Slide n°1: TITLE AND OBJECTIVES
- Slides n°2 to n° 6: OVERVIEW
- Slide n°7 part n°1: TITLE FREIGHT TRANSPORTATION
- Slide n°8: DIFFERENT WAYS OF TRANSPORTING GOODS
- Slide n°9: ROADS: FROM SIMPLE TRUCKS TO AUSTRALIAN ROAD TRAINS
- Slide n°10: ADVANTAGES AND DISADVANTAGES
- Slides n°11 and n°12: Act n° 1
- Slides n°13 and n°14: Act n° 2
- Slides n°15 and n°16: Act n° 3: intermediate task: CROSSWORD

# TABLE OF CONTENTS

- Slide n°17: RAIL TRANSPORTATION : TITLE PAGE
- Slide n°18: RAIL TRANSPORTATION: DEFINITION
- Slides n°19 and n°20: Act n° 4
- Slide n°21: Act n° 5 Grammar point: comparisons
- Slides n°22 and n°23: Act n° 6: Advantages and Disadvantages
- Slide n°24: Act n°7: Intermediate task
- Slide n°25: MARITIME TRANSPORTATION SEAS AND RIVERS
- Slide n°26: DESCRIPTION
- Slides n°27 and n°28: MAIN TYPES OF MERCHANT SHIPS

# TABLE OF CONTENTS

- Slides n°29 and n°30: Act n° 8
- Slide n°31: act n°9: Oral interaction
- Slide n°32: INLAND WATERWAYS TRANSPORTATION
- Slide n°33: DIFFERENT TYPES OF BARGES
- Slides n°34 and n°35: Act n° 10
- Slides n°36 and n°37: Act n° 11
- Slide n°38: AIR AND SPACE TRANSPORTATION TITLE PAGE
- Slides n°39: AIR FREIGHTING
- Slides n°40 and n°41: ADVANTAGES

# TABLE OF CONTENTS

- Slides n°42 and n°43: DISADVANTAGES
- Slides n°44 and n°45: Intermediate task: Act n° 12
- Slide n°46: SPACE TRANSPORT: SUPPLYING THE ISS
- Slide n°47 : SUPPLY CHAIN IN SPACE: A FAMOUS QUOTATION
- Slide n°48: Act n°13
- Slide n°49: SUPPLY CHAIN IN SPACE
- Slide n°50: Act n°14 VIDEO
- Slide n°51: DRONE DELIVERIES
- Slide n°52 and n°53: act n°15

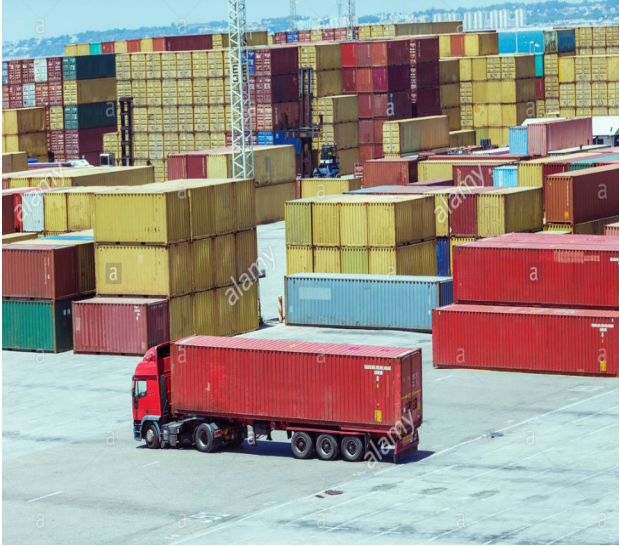
# TABLE OF CONTENTS

- Slide n°54: MULTIMODAL FREIGHT TRANSPORTATION
- Slide n°55 and n°56: EXAMPLES OF MULTIMODAL TRANSPORT PROCESS
- Slide n°57: PRESENTATION
- Slide n°n°58 and n°59: Act n°16
- Slide n°60 and n°6: Act n°17
- Slide n°62: DEFINITION
- Slide n°63 and n°64: NEEDED EQUIPMENTS FOR INTERNATIONAL TRANSPORT
- Slide n°65: FINAL TASK

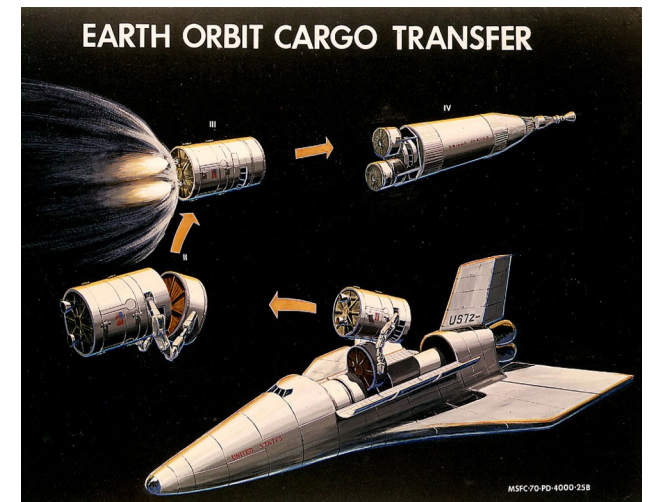
# Part 1

TRANSPORTING FREIGHT  
FROM THE MORE TRADITIONAL MEANS TO  
OUR NEAR FUTURE

# DIFFERENT WAYS OF TRANSPORTING GOODS



Drone Logistics and Transportation Market





# ROADS: FROM SIMPLE TRUCKS TO AUSTRALIAN ROAD TRAINS

- Road transport can be the most flexible option for your international business, especially within the European Union. The motorway network is good and crossing national borders is usually quick and efficient.
- Nevertheless this means of transport implies some advantages and some disadvantages
- Unbelievable! Australia has a special way of transporting goods all around the country. Discover the famous Australian road trains. As you see on the picture, it consists in a big truck towing several trailers



# ADVANTAGES AND DISADVANTAGES

- Advantages of road transport for international trade
- Some advantages of moving goods by road include:
  - relatively low cost
  - extensive road networks - scheduled delivery days and next day delivery services are a viable option
  - you can schedule transport to suit you and you can track the location of goods: more flexibility
  - consignments can be secure and private
- Disadvantages of road transport for international trade
- There are risks and disadvantages when transporting your goods by road, including:
  - long distances overland can take more time
  - there can be traffic delays and breakdowns
  - there is the risk of goods being damaged, especially over long distances
  - toll charges are high in some countries
  - some countries have different road and traffic regulations
- You can either use your own vehicles, or a carrier. If you operate your own vehicles, you will need to consider licences, fuel costs, regulations, driver training and tax.
- Pollution and traffic jams have to be considered
- Costs and rentability depend on fuel prices

Activity n° 1: recall the transportation lexical field  
in the previous document

# Activity n° 1: recall the transportation lexical field in the previous document

- Goods
- Border
- To tow
- A trailer
- Delivery
- Consignment
- Delays
- Breakdowns
- To be damaged
- Toll charges
- A carrier
- Pollution
- Traffic jam

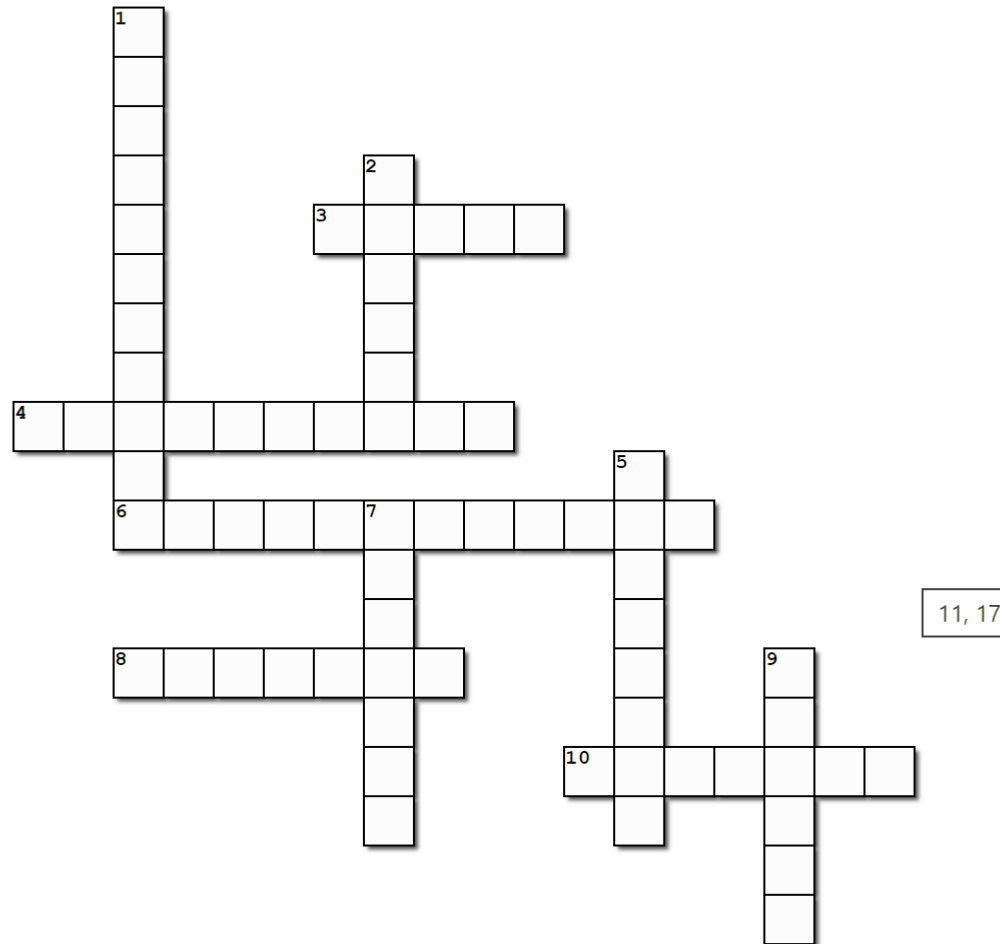
Act n° 2: find their translation either in a dictionary or with the help of an online dictionary and fill the following grid

ENGLISH	FRENCH
GOODS	
BORDER	
TO TOW	
A TRAILER	
A DELIVERY	
A CONSIGNMENT	
DELAYS	
BREAKDOWNS	
TO BE DAMAGED	
TOLL CHARGES	
A CARRIER	
POLLUTION	
TRAFFIC JAM	

Act n°2: find their translation either in a dictionary or with the help of an online dictionary and fill the following grid

ENGLISH	FRENCH
GOODS	biens
BORDER	frontières
TO TOW	tracter
A TRAILER	Une remorque
A DELIVERY	Une livraison
A CONSIGNMENT or truckload	Une cargaison
DELAYS	délais
BREAKDOWNS	pannes
TO BE DAMAGED	Être endommagé
TOLL CHARGES	Frais de éage
A CARRIER	Un transporteur
POLLUTION	La polution
TRAFFIC JAM	Les emboutillages

# Act n° 3: Intermediate task: crossword



Created using the Crossword Maker on TheTeachersCorner.net

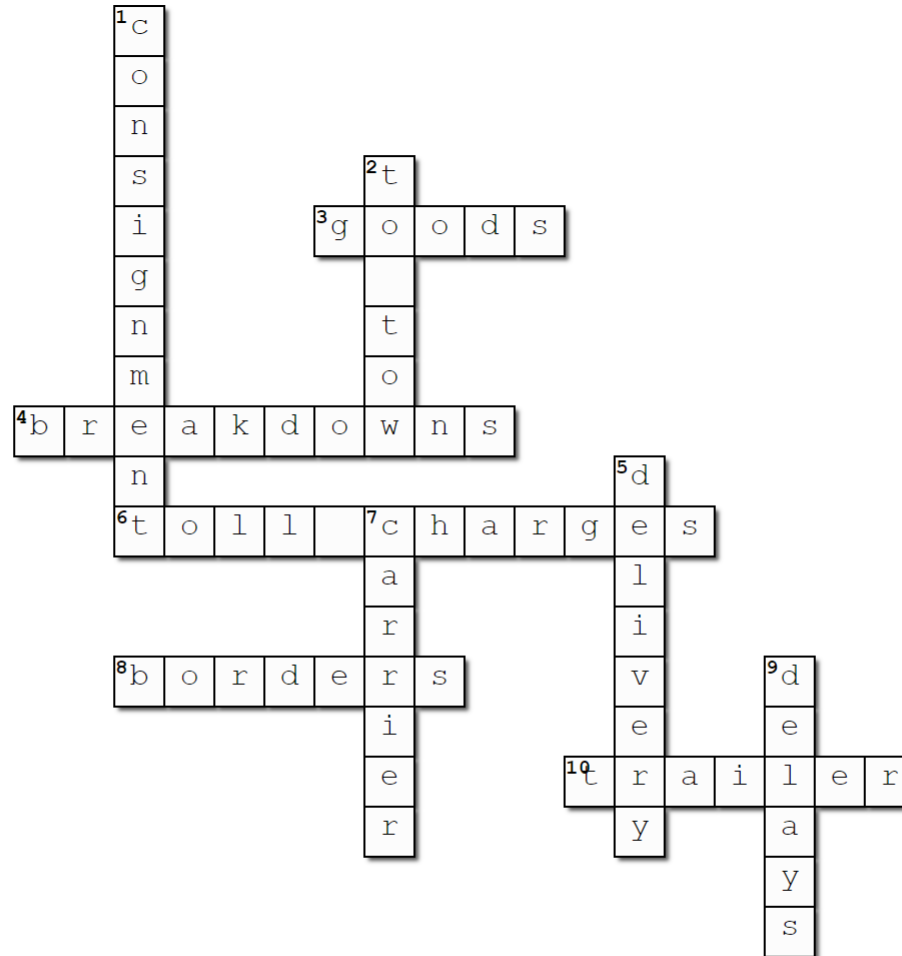
## Horizontal

- 3. BIENS
- 4. PANNES
- 6. FRAIS DE PEAGES
- 8. FRONTIERES
- 10. REMORQUE

## Vertical

- 1. CARGAISON
- 2. TRACTER
- 5. LIVRAISON
- 7. TRANSPORTEUR
- 9. DELAIS

# CROSSWORDS ANSWERS



Created using the Crossword Maker on TheTeachersCorner.net

## Horizontal

3. BIENS (**goods**)
4. PANNES (**breakdowns**)
6. FRAIS DE PEAGES (**toll charges**)
8. FRONTIERES (**borders**)
10. REMORQUE (**trailer**)

## Vertical

1. CARGAISON (**consignment**)
2. TRACTER (**to tow**)
5. LIVRAISON (**delivery**)
7. TRANSPORTEUR (**carrier**)
9. DELAIS (**delays**)



# RAIL TRANSPORT



# RAIL TRANSPORT: Definition from The Economic Times

Rail transport is also known as train transport. It is a means of transport, on vehicles which run on **tracks (rails or railroads)**. It is one of the most important, commonly used and very cost effective **modes of commuting** and **goods carriage** over long, as well as, short distances.

Complex signaling systems are utilised if there are multiple route networks. Rail transport is also one of the fastest modes of land transport.

Rail transport has emerged as one of the most dependable modes of transport in terms of safety. Trains are fast and the least affected by usual weather turbulences like rain or fog, compared to other transport mechanisms. Rail transport is better organised than any other medium of transport. It has fixed **routes and schedules**. Its services are more certain, uniform and regular compared to other modes of transport.

It's a modern, complex and sophisticated system used both in urban and cross-country (and continent) networks over long distances.

Rail transport has some constraints and limitations also. One of the biggest constraints of rail transport is heavy cost. Trains need high capital to build and maintain and the cost is magnified when a whole rail network is to be built. The cost of construction, maintenance and overhead expenses are very high compared to other modes of transport. Also, rail transport cannot provide **door-to-door service** as it is tied to a particular **track**. Intermediate **loading** or **unloading** involves greater cost, more wear and tear and wastage of time.



Activity n° 4: give the definition of the following words with the help of the following site

<https://dictionary.reverso.net/english-definition/>

- Tracks
- Route
- Schedule
- Urban
- Cross-country
- Wear and tear
- Loading
- unloading

Activity n° 4: give the definition of the following words with the help of the following site

<https://dictionary.reverso.net/english-definition/>

- Railway Tracks: a permanent track composed of a line of parallel metal rails fixed to sleepers, for transport of passengers and goods in trains
- Route: the choice of roads taken to get to a place
- Schedule: a list of times, esp. of arrivals and departures; timetable
- Urban: of, relating to, or constituting a city or town
- Cross-country: across a country
- Wear and tear: damage, depreciation, or loss resulting from ordinary use
- Loading: the fact of placing or receiving (cargo, goods, etc.) upon (a ship, lorry, etc
- Unloading: the fact to carry out goods or cargo from a ship, train , lorry...

# Act n° 5: Grammar point: recalling comparisons

- Comparative forms:

- As well as
- better organized
- greater cost

Explain how they are formed. Tell why their features are different

- Superlative forms

- the fastest
- the most important
- The most dependable
- The least affected
- The biggest

Explain how they are formed. Tell why their features are different

Act n° 6: list the advantages and the disadvantages of train transport according to the text

- **ADVANTAGES**

- **DISADVANTAGES**

# Act n° 6: intermediate task: list the advantages and the disadvantages of train transport according to the text

## • Advantages

- one of the fastest modes of land transport.
- Safety
- Less affected by weather conditions.
- Better organized
- Fixed schedule and route
- more certain, uniform and regular than other means of transport→ more reliable
- modern, complex and sophisticated system
- As well urban as cross country service

## • Disadvantages

- Constraints and limitations
  - Heavy cost in building and maintaining
  - can't provide door-to-door service
  - Tied to a particular track
- Intermediate loading and unloading imply greater costs
  - Wear and tear costs
  - Wastage of time

Act n° 7: intermediate task: these are more advantages linked to train transport. Make some sentences with these words.

- Bulk carrier
- Suitable for long haul
- Economies of scale
- Relatively cheaper mode of transport
- Limited pollution
- Often directly linked to industry places and seaport
- Ability to carry a wide range of products

help: You can use an online dictionary to achieve this task



# MARITIME TRANSPORT: SEAS AND RIVERS



**Maritime** transport, **fluvial** transport, or more generally **waterborne** transport is the transport of people (passengers) or goods (cargo) via waterways



# DESCRIPTION

Maritime transport can be realized over any distance by boat, ship, sailboat or barge, over **oceans** and **lakes**, through **canals** or along **rivers**. Shipping may be for commerce, recreation, or for military purposes. While extensive inland shipping is less critical today, the major **waterways** of the world including many canals are still very important and are integral parts of worldwide economies. Virtually any material can be moved by water; however, water transport becomes impractical when material delivery is time-critical such as various types of perishable produce. Still, water transport is highly cost effective with regular schedulable cargoes, such as **trans-oceanic shipping** of consumer products – and especially for **heavy loads** or **bulk cargos**, such as **coal, coke, ores, or grains**. Arguably, the industrial revolution took place best where cheap water transport by canal, navigations, or shipping by all types of watercraft on natural waterways supported cost effective **bulk transport**.

**Containerization** revolutionized maritime transport starting in the 1970s. "General cargo" includes goods packaged in **boxes, cases, pallets, and barrels**. When a cargo is carried in more than one mode, it is **intermodal or co-modal**.

# MAIN TYPES OF MERCHANT SHIPS



**Bulk carriers** are cargo ships used to transport bulk cargo items such as **ore** or **food staples** (rice, grain, etc.) and similar cargo. They can be recognized by the large box-like **hatches** on their deck, designed to slide outboard for loading. A bulk carrier could be either dry or wet.



**Container ships** are cargo ships that carry their entire load in **truck-size containers**, in a technique called **containerization**. They form a common means of **commercial intermodal freight transport**. Informally known as "box boats," they carry the majority of the world's dry cargo.



A **Multi-purpose ship** or **general cargo ship** is used to transport a variety of goods from **bulk commodities** to break **bulk and heavy cargoes**. They provide maximum trading flexibility: carriage of containers and grains. Generally they will have large open holds and tween-decks to facilitate the carriage of different cargoes on the same voyage.

# MAIN TYPES OF MERCHANT SHIPS



**Refrigerated ships** (usually called Reefers) are cargo ships typically used to transport **perishable commodities** which require **temperature-controlled transportation**, mostly **fruits, meat, fish, vegetables, dairy products** and other **foodstuffs**.



Roll-on/roll-off ship are cargo ships designed to carry **wheeled cargo** such as **automobiles, trailers or railway carriages**. RORO (or ro/ro) vessels have **built-in ramps** which allow the cargo to be efficiently "rolled on" and "rolled off" the vessel when in port. They are generally reserved for larger ocean-going vessels, including pure car/truck carrier (PCTC) ship



Tankers are cargo ships for the **transport of fluids**, such as **crude oil, petroleum products, liquefied petroleum gas (LPG), liquefied natural gas (LNG) and chemicals**, also **vegetable oils, wine** and other food - the tanker sector comprises one third of the world tonnage

# Act n° 8: link the different transported goods to the devoted ship

- Bulk carrier
  - Container ship
  - Multi-purpose ship
  - Refrigerated ship
  - Roll on-roll off
  - Tankers
- Rice
  - Dairy products
  - Vegetables
  - Liquefied natural gas
  - Grains
  - Automobiles
  - petroleum
  - Perishable goods
  - Ore
  - Trailers
  - Vegetable oil
  - wine
  - Fruits
  - Crude oil
  - Containers
  - Railway carriages
  - Meat
  - chemicals
  - fish
  - Bulk
  - fluids

# Act n° 8: link the different transported goods to the devoted ship

- Bulk carrier

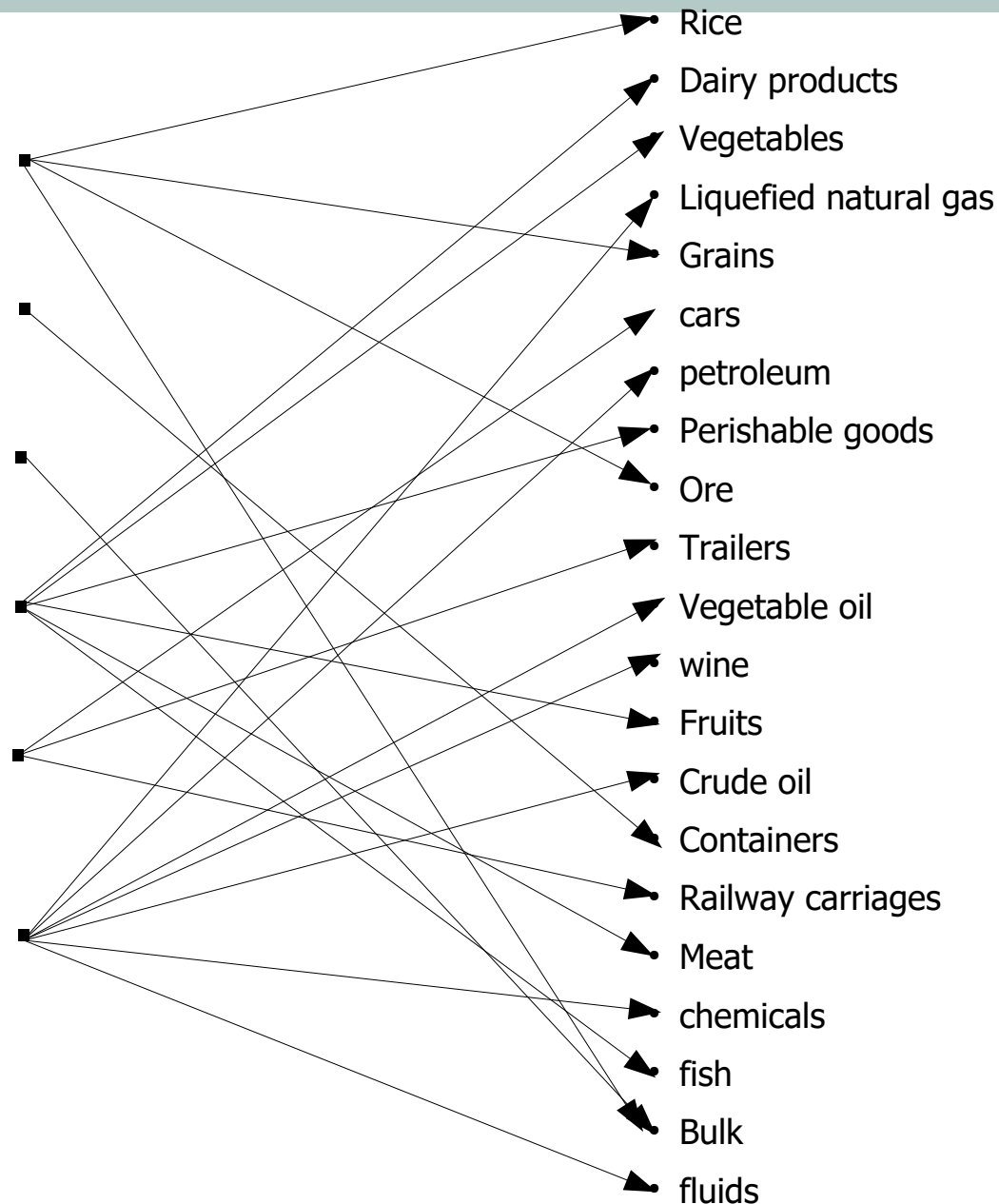
- Container ship

- Multi-purpose ship

- Refrigerated ship

- Roll on-roll off

- Tankers





# Act n° 9: oral interaction: pair work A phone call

- Each group has to plan a transportation of goods
  - First group needs to transport coal
  - Second group needs to transport wine
  - Third group needs to transport dairy
  - Fourth group needs to transport gas
  - Fifth group needs to transport crude oil
  - Sixth group needs to transport rails
  - Seventh group needs to transport cars
  - Eighth group needs to transport containers
- Student A represents a shipping company/ Student B is the customer
- The conversation will be about finding the right means of maritime transport, the place of departure and the destination, the date and quantity of goods to be transported

# INLAND WATERWAYS TRANSPORTATION

- A barge is a flat-bottomed boat, built mainly for river and canal transport of heavy goods. Most barges are not self-propelled and need to be moved by tugboats towing or tow-boats pushing them. Nowadays they are less used to transport light freight and high value items due to the higher speed, falling costs, and route flexibility of rail transport. Carriage of bulk goods also gradually lost ground to freight railways as train capacity and speeds continued to climb. They are plagued by the seasonal problems (restricted by icing) of temperate latitude canals which suffered ice and flooding damages with dreary regularity. When floods did affect railways, restoration of services was usually comparatively rapid.



# DIFFERENT TYPES OF BARGES

- **Dry Bulk Cargo Barges:** These types of barges are used to haul and ferry dry cargo. When the aspect of dry cargo is considered, it includes food, grains, sand, minerals like steel and coal and other dry commodities that can be transferred through the system of barges.
- **Barges Carrying Liquid Cargo:** These types of barges are completely opposite to the dry bulk cargo barges. These barges are very useful in carrying petrochemicals and fertilizers that are used mainly in the liquid state, and other necessary important industrial liquid chemicals.
- **Car-float Barges:** In simple terms, it can be said that these rail-carts attached to the barges were like portable rail-sets ferried from one location to another.
- **Split Hopper Barge:** This unique barge is used for carrying dredged material as they are fitted with proper unloading tools. The split hopper barge is extensively used in marine construction purpose as it can unload the material (Soil, sand, dredged material, etc.) at the site

Act n°10: group work: recall the names of the different barges and the material they transport than link them

- Then with the help of a software design a scheme of different kinds of fluvial transportation

Act n°10: group work: recall the names of the different barges and their peculiar cargos than link them

- Different barges:
- Dry Bulk Cargo Barges
- Barges Carrying Liquid Cargo
- Car-float Barges
- Split Hopper Barge
- Dry cargo: grains, food, sand, steel, minerals, coal, other dry commodities
- Petrochemicals, fertilizers, industrial liquid chemicals.
- portable rail-sets
- dredged material for marine construction such as soil, sand.....

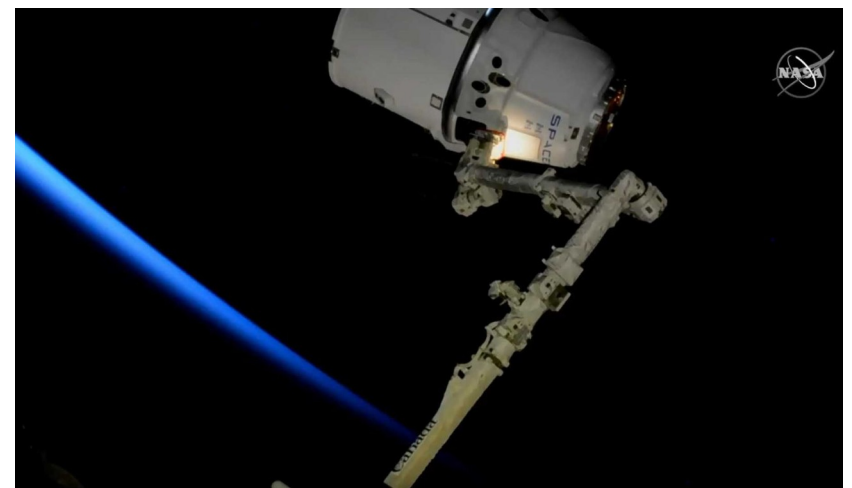
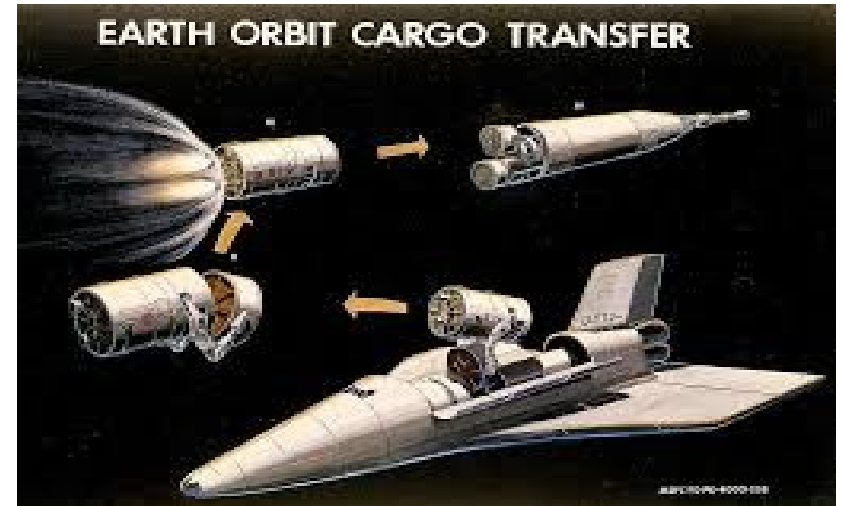
Act n° 11: Compare fluvial and sea transportation as a help, use the different following items

- Route:
- Transport:
- Propelling:
- Usage:
- Manoeuvring:

# Act n° 11: Compare fluvial and sea transportation

- As a help, use the different following items
- **Route:** Ships sail in both Inland as well as International waterways but the barges are typically seen in Inland waterways only. Barges are generally employed for transportation of goods within a river, canal, creek or an estuary. Hardly any barge is seen in seas whereas ships can be found on all sorts of water bodies for e.g. Oceans, seas, rivers, canals, estuaries, creeks, etc.
- **Transport:** Ship serves as multi-purpose vessel as it is used to transport both goods as well as people whereas Barges are the ships used only for transporting specific goods.
- **Propelling:** Ships have their self-propelling system whereas Barges are propelled by the tugboat to which these are towed.
- **Usage:** Barges are used to transport material to ferryboats or other goods to both in the sea or on port ships. Whereas a ship is a multi-facility vessel and can be used for the number of purposes like Ships can be used for International and national trades; Cruise ships can be used for destination holidays and some ships are used for recreational works.
- **Manoeuvring:** The ship is a self-propelled floating object, so moving a ship and manoeuvring a ship is comparatively easier than the barges. Because barges are tugged with a ship and it is difficult to manage a vehicle with a trailer than the vehicle alone.

# AIR AND SPACE TRANSPORTATION



# AIR FREIGHTING

- **Air freight**, also known as air cargo, is the transport of goods via an air carrier. This kind of transport can take place between any place which can be reached by airplane. Air freight is the **fastest** but also the **costliest** form of transport, compared to transport by sea, rail, and truck
- In a world where everything is connected and where a message that used to take days to arrive is now received in milliseconds, it is no wonder that a need would emerge for a service with the quickest **turnaround** possible, leading to the development of the commercial use of aircraft across the board.
- **General cargo** includes high value goods, such as electronics, jewellery and pharmaceuticals. Air shipping is **more expensive** than shipping by sea, but due to the high margins and the fact that many **electronic goods** are fragile, air freight is the most appropriate form of transport.
- **Special cargo** requires special conditions for transporting goods, such as temperature control, certain air conditions or protected casing (e.g. if the goods are hazardous or livestock).

# ADVANTAGES OF AIRFREIGHT(1)

- **Time** – transporting goods with air freight saves time – it's much faster than shipping, rail or road transport
- **Reliable** – flights generally have reliable arrival and departure times with very few delays, so the shipment of cargo by air is very likely to arrive on time
- **Low insurance premium** – due to the shipment duration being so short, insurance premiums on air freight are generally lower
- **Secure** – the shipment of cargo by air is tightly managed by security, so the chance of cargo being stolen or damaged is low
- **Less warehousing requirements** – the clearance time for air freight is fast, and there's generally less stock to unload than that for cargo ships, so customs clearance is fast, and the need for local warehousing is much lower



# ADVANTAGES OF AIRFREIGHT(2)

- **High Speed:** It is the fastest mode of transport and therefore suitable for carriage of goods over a long distance. It requires less time.
- **Quick Service:** Air transport provides comfortable, efficient and quick transport services. It is regarded as the best mode of transport for transporting perishable goods.
- **No Infrastructure Investment:** Air transport does not give emphasis on construction of tracks like railways. As no capital investment in surface track is needed, it is a less costly mode of transport.
- **Easy Access:** Air transport is regarded as the only means of transport in those areas which are not easily accessible to other modes of transport. It is therefore accessible to all areas regardless of the obstruction of land.
- **No Physical Barrier:** Air transport is free from physical barriers because it follows the shortest and direct routes where seas, mountains and forests do not obstruct.
- **Natural Route:** Aircrafts travel to any place without any natural obstacles or barriers because the custom formalities are completed very quickly. It avoids delay in obtaining clearance.
- **National defence:** It plays a significant role in the national defence of the country because modern wars are conducted with the help of aero planes. Airways has an upper hand in destroying the enemy in a short period.

# DISADVANTAGES OF AIRFREIGHT (1)

- SOME GOODS CAN'T BE TRANSPORTED BY PLANE
- UN classified dangerous goods
- Lithium Batteries
- Power Supplies or Power Banks
- Illegal Goods
- Firearms
- Flammable Substances
- Explosives
- Biochemical Products

# DISADVANTAGES OF AIRFREIGHT (2)

- **Very Costly:** Air transport is considered costlier as compare to other mode of transport. The operating cost of aero-planes are higher and it involves a great deal of expenditure on the construction of aerodromes and aircraft. Because of this reason the fare of air transport are high that common people can't afford it.
- **Risky:** Air transport is the most risky form of transport because a minor accident may put a substantial loss to the goods, passengers and the crew. The chances of accidents are greater in comparison to other modes of transport.
- **Small Carrying Capacity:** The aircrafts have small carrying capacity and therefore these are not suitable for carrying bulky and cheaper goods. The load capacity cannot be increased as it is found in case of rails.
- **Unreliable:** Air transport is unreliable as it depends of the weather forecast. Normally if the weather is not certain the flight may got delayed.
- **Huge Investment:** Air transport requires huge investment for construction and maintenance of aerodromes. It also requires trained, experienced and skilled personnel which involves a substantial investment.

## Act n° 12: INTERMEDIATE TASK

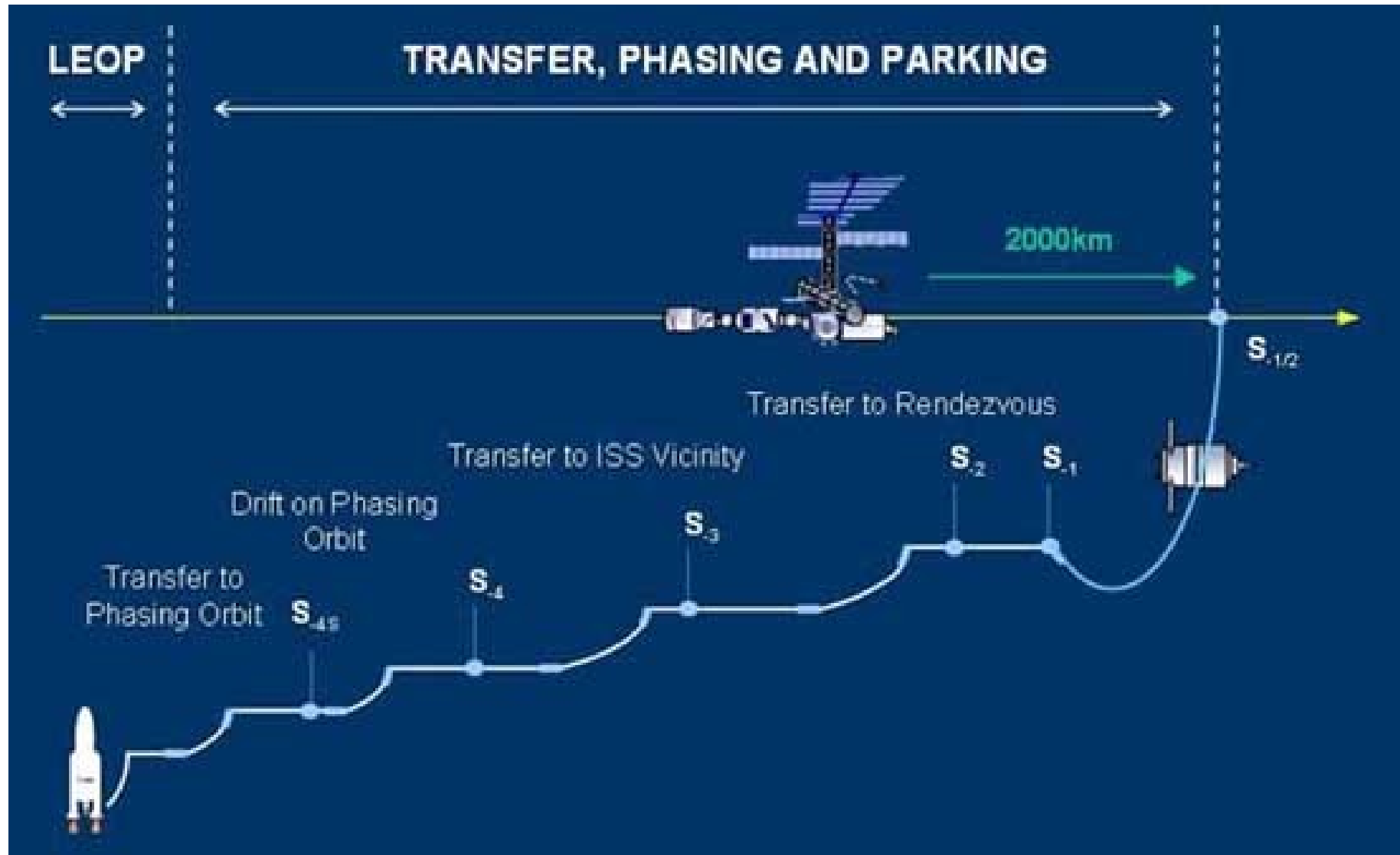
Compare the advantages and disadvantages of airfreight.

- Does it not seem that some of them are paradoxical or even contradictory? List and explain them as you have to prove that in fact they are not.
- Example explain in what ways air transportation can be at the same time reliable and unreliable...some more paradox exist , find and explain them!

# Act n° 12 ANSWERS

- **reliable/unreliable:** flights generally have reliable arrival and departure times with very few delays, so the shipment of cargo by air is very likely to arrive on time but it depends on the weather forecast. Normally if the weather is not certain the flight may get delayed
- **costly/uncostly:** They are likely to get **low insurance premium** as due to the shipment duration being so short moreover they need and **less warehousing requirements** – the clearance time for air freight is fast, and there's generally less stock to unload than that for cargo ships, so customs clearance is fast, and the need for local warehousing is much lower. Nevertheless it's **Very Costly because** Air transport is considered costlier as compare to other mode of transport. The operating cost of aeroplanes are higher and it involves a great deal of expenditure on the construction of aerodromes and aircraft. Moreover they can bear **small carrying capacity so** they are not suitable for carrying bulky and cheaper goods.
- **Huge investment/no infrastructure investment: No Infrastructure Investment:** Air transport does not give emphasis on construction of tracks like railways. As no capital investment in surface track is needed regardless to the **Huge Investment needed for** its construction and maintenance of structures. It also requires trained, experienced and skilled personnel which involves a substantial investment.

# SPACE TRANSPORT: SUPPLYING ISS NEEDS



# SUPPLY CHAIN IN SPACE: A FAMOUS QUOTATION

- Conceiving why it's needed to take in account this special supply chain is earning the most famous and earliest promoter of space travels: Wernher Von Braun who stated in 1960 that

**"We have a logistics problem coming up in space ... that will challenge the thinking of the most visionary logistics engineers. As you know, we are currently investigating three regions of space: near-Earth, the lunar region, and the planets. While it is safe to say that all of us have undoubtedly been aware of many or most of the logistics requirements and problems in the discussion, at least in a general way, I think it is also safe to state that many of us have not realized the enormous scope of the tasks performed in the logistics area. I hope the discussions bring about a better understanding of the fact that logistics support is a major portion of most large development projects. Logistics support, in fact, is a major cause of the success or failure of many undertakings."**

Act n°13: in a sentence, sum up what was Von Braun's main concern about travelling in space



# SUPPLY CHAIN IN SPACE

- The International Space Station (ISS) is a unique, world-class orbiting laboratory. It is also home to astronauts and cosmonauts. The logistics of keeping such a home running are complicated. In space, there are no grocery stores or home improvements stores. The “trash truck” only comes around every few months. Washers and dryers for clothing do not exist, and access to clean attire can take months. Much of the breathable air and drinkable water must be delivered. When supplies (e.g., bathroom tissue) are low, crew members cannot tap a few keys on the computer and wait for resupplies to arrive at the door. They call Mission Control and place their order, and then they wait.
- Moving astronauts and cosmonauts, science experiments, food, water, air, spare parts, and other supplies to and from the ISS is a highly choreographed international operation that must be executed with near perfection, every time. Such an effort requires more than one spacecraft.

Act n°14 describe the following video

- <https://www.youtube.com/watch?v=MIkOwaxkZbc>

Supplying the International Space Station

- Your conclusion will be about how the XXI<sup>st</sup> century scientists overcome Von Braun's interrogations

# DRONE DELIVERIES



- A delivery drone is an autonomous vehicle, often an unmanned aerial vehicle (UAV), used to transport packages, food or other goods
- UAVs can transport medicines and vaccines, and retrieve medical samples, into and out of remote or otherwise inaccessible regions
- Early prototypes of food delivery drones include the Tacocopter demonstration by Star Simpson, which was a taco delivery concept utilizing a smartphone app to order drone-delivered tacos in San Francisco area. Marriott International used drones to deliver cocktails and drinks to the tables of guests at multiple properties for example
- Different postal companies from Australia, Switzerland, Germany, Singapore and Ukraine have undertaken various drone trials as they test the feasibility and profitability of unmanned delivery drone services. The USPS has been testing delivery systems with HorseFly Drones

Act n°15: recall the goods which can be transported by drones in the former slide

Act n°15: recall the goods which can be transported by drones in the former slide

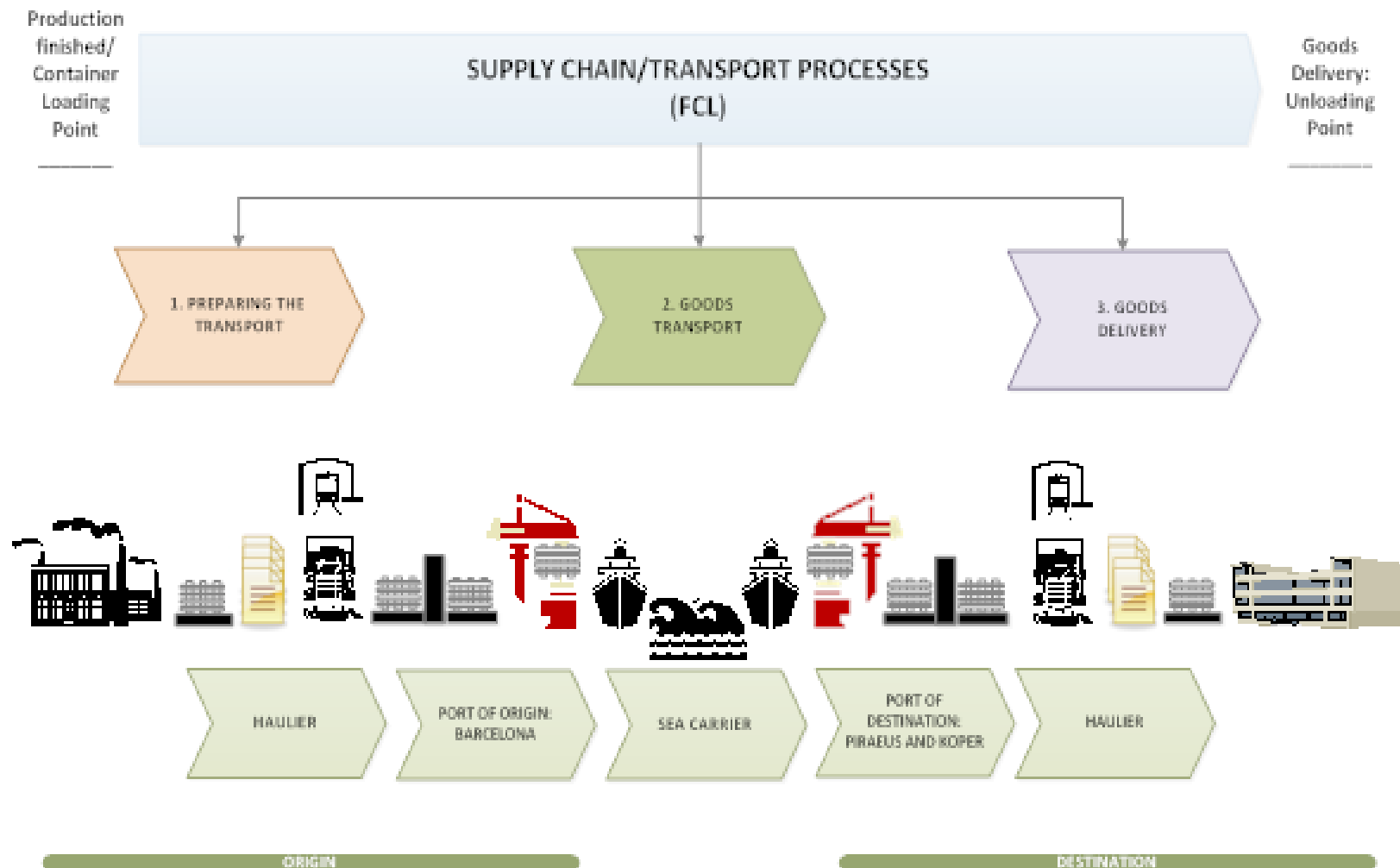
- Packages
- Goods
- Cocktails
- Postal parcels

## Part 2

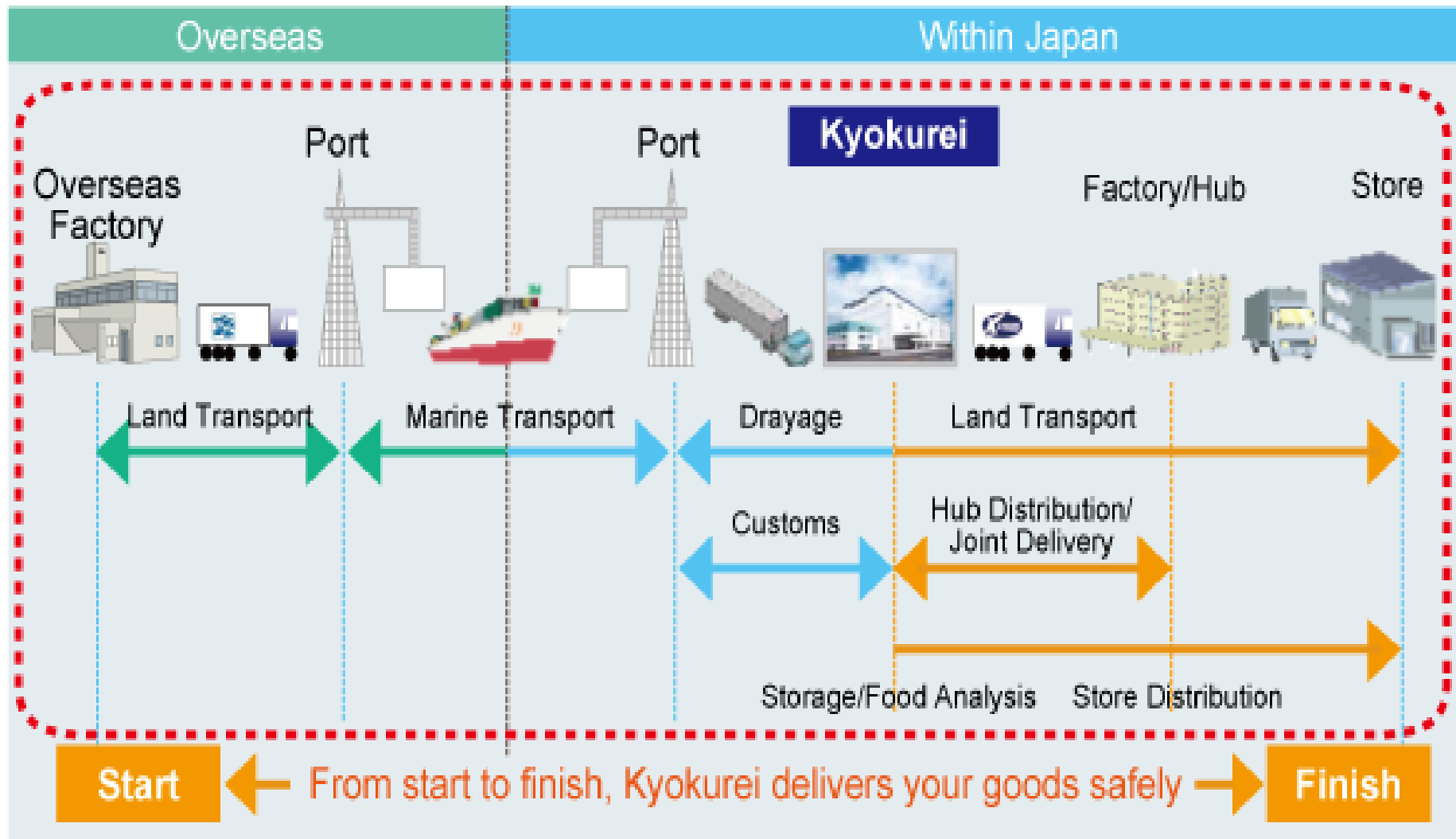
# MULTIMODAL FREIGHT TRANSPORTATION



# EXAMPLE OF MULTIMODAL TRANSPORT PROCESS



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# PRESENTATION

<https://www.youtube.com/watch?v=NX626TqpMBk>

Act n°16: CO Listening to the video than recall the acronyms and give their full transcription

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- MTO: multimodal transport operator
- NVOC: Non-Vessel Operating Carriers
- RITA: Research and Innovative Technology Administration
- USDOT: U.S. Department of Transportation
- RD&T: Research, Development and Technology
- UTC: University Transportation Center

# Act n°17: Quiz

a) Number of contracts used in multimodal transport at least

- 1
- 2
- 3

b) Who is liable in a multi transport contract?

- The sub-carriers
- The customers
- The MTO
- The receiver

c) International multimodal transport is A way of transporting freight

- with at least three means of different means
- with more than one means of transportation
- with very known means of transportation

d) Freight forwarders are nowadays:

- MTOs
- agents for senders
- agent for receivers

e) A non- vessel operating carrier is

- a carrier who possesses no many means of transportation
- a carrier who is retired
- a carrier who does not own a merchant ship

f) The most multimodal consignment is

- containers
- tankers
- wood boxes

g) Multimodal transport is not equivalent to container transport

- false sentence
- true sentence

h) Multimodal transport is

- feasible without containers
- impossible without containers

I) The University transportation Center conducts program about:

- multi-modal research
- education programs.
- both of them

J) multimodal transportation problems arise when:

- sub-carriers delay the delivery
- breach of contract occur

# Act n°17: Quiz: answers

a) number of contracts used in multimodal transport at least

- 1
- x- 2
- 3

b) Who is liable in a multi transport contract?

- The sub-carriers
- The customers
- x- The MTO
- The receiver

c) International multimodal transport is

- A way of transporting freight with at least three means of different means
- x- A way of transporting freight with more than one means of transportation
- A way of transporting freight with very known means of transportation

d) Freight forwarders are nowadays:

- x- MTOs
- agents for senders
- agent for receivers

e) A non- vessel operating carrier is

- a carrier who possesses no many means of transportation
- a carrier who is retired
- x- a carrier who does not own a merchant ship

• f) The most multimodal consignment is x- containers  
x- tankers

• - wood boxes

• g) multimodal transport is not equivalent to container transport

• - false sentence

x - true sentence

• h) multimodal transport is

x - feasible without containers

• - impossible without containers

• i) The University transportation Center conducts program about:

• - multi-modal research

• - education programs.

x- both of them

• J) multimodal transportation problems arise when:

• - sub-carriers delay the delivery

x - breach of contract occur

# DEFINITIONS

- **International multimodal transport** means the carriage of goods by at least two different modes of transport on the basis of a multimodal transport contract from a place in one country at which the goods are taken in charge by the multimodal transport operator to a place designated for delivery situated in a different country.
- **Intermodal freight transport** involves the transportation of freight in an intermodal container or vehicle, using multiple modes of transportation (e.g., rail, ship, and truck), without any handling of the freight itself when changing modes. The method reduces cargo handling, and so improves security, reduces damage and loss, and allows freight to be transported faster. Reduced costs over road trucking is the key benefit for inter-continental use. This may be offset by reduced timings for road transport over shorter distances

# NEEDED EQUIPMENTS FOR INTERMODAL FREIGHT TRANSPORT(1)

Handling equipment can be designed with inter-modality: assisting with transferring containers between rail, road and sea. These can include:



**Container gantry crane** for transferring containers from seagoing vessels onto either trucks or rail wagons. A spreader beam moves in several directions allowing accurate positioning of the cargo. A container crane is mounted on rails moving parallel to the ship's side, with a large boom spanning the distance between the ship's cargo hold and the quay



**Straddle carriers**, and the larger rubber tyred gantry crane are able to straddle container stacks as well as rail and road vehicles, allowing for quick transfer of containers.



**Grapple lift**, which is very similar to a straddle carrier except it grips the bottom of a container rather than the top

# NEEDED EQUIPMENTS FOR INTERMODAL FREIGHT TRANSPORT (2)



**Reach stackers** are fitted with lifting arms as well as spreader beams for lifting containers to truck or rail and can stack containers on top of each other



**Side lifters** are a road-going truck or semi-trailer with cranes fitted at each end to hoist and transport containers in small yards or over longer distances.



**Forklift trucks** in larger sizes are often used to load containers to/from truck and rail



**Flatbed trucks** with special chain assemblies which can pull containers onto or off of the bed using the corner castings.



# FINAL TASK

- Describe what can be the journey of a cargo of Chinese freight which must be delivered in Europe. Use a multimodal means of transportation.
- The cargo can be composed of
  - First possibility: electronic products
  - Second possibility: machinery and manufactured products
  - Third possibility: chemicals
- Each group chose a product and imagine its journey from production to delivery without omitting the different steps of the process
- Present and justify your choice orally.