

ARTICLE

THE EFFECT OF USING A SYSTEMATIC APPROACH IN THE CONTINUOUS IMPROVEMENT OF CONTAINER SHIPPING ACTIVITIES TO SOLVE CRISES IN SOME BASRA PORTS

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ARTICLE DETAILS

ABSTRACT

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The issue of transporting containers through commercial ships is a very important topic that leads most headlines in administrative journals in most universities and countries of common interest, such as the Arab Gulf countries, including Iraq, East Asian countries, America, and other countries that surround water, seas, and beaches, and because of which they are active in the areas of import and export. Thanks to her, she possesses many types of goods that are transported in many types of containers (the subject of research), the most famous of which are oil, gas, other liquid goods, solid and dates, as well as livestock and animals, as used in circus games and used for display in (Zoos) for their severity, rarity and high prices.

Worldwide, many conferences were repeated and devoted to counting and comparing all activities related to the maritime transport of containers in many ports, such as the Louisiana University conference in the United States of America, which will be mentioned in one of the current research areas, which discusses many axes of analysis and study of what disappears in the depths of the sea in order to prepare to confront it and what appears on the surface at different times in this highly active marine sector that is affected by different circumstances between nature, politics, geography, economics and the like to try out the appropriate scenarios and ideas and listen to the opinion of every interested person who follows international reports related to these containers are to make use of any information on this subject, secrets and risks and crises.

This effort was divided into five sections, where the first topic relates to methodological aspects and the second is concerned with the presentation of related problems as well as the definition of simulation and its models considering that Iraqi ports in Basra lack such a technique to facilitate the flow of ships related to the location of the research and the third is concerned with containers and their advantages and problems and future horizons for them in Iraq. The fourth is a review of the algorithm for entering and exiting ships to Iraqi ports in Basra, which is unique to the current research. The research reached several conclusions and recommendations.

KEY-WORDS

Containers, Simulation, Ship Entry and Exit Algorithm, Scenarios, Maritime Transport Sector.

1. INTRODUCTION

The current research is going to analyse an important crisis, which is the issue of transporting materials and things in containers from Iraqi ports, specifically in Basra Governorate to different places for different purposes, which face these actions through many difficulties (through transport in containers). The researcher reviewed it starting from its problems, passing through its types and available techniques to facilitate its activities such as the various simulation techniques available to facilitate the process of its passage and uses in the countries of the region and the Iraqi ports in Basra related to the research.

On the descriptive and analytical method of interpreting phenomena and obstacles and dealing with them by researching the narration, clarification and treatments through the use of available information from the people who were interviewed by the researcher (sailor, captain, driver, expert, accountant) working in four ports in Basra. Workers in four ports in Basra (which is the port of Al-Maqal, Abu

Flus, Umm Qasr, Khor Al-Zubir).

The researcher reviewed some of them information in the following Table 1 and benefiting from their experience to identify an important algorithm in the field of maritime transport, which is the algorithm of entry and exit of ships to and from the Iraqi ports in Basra.

The complexity and regularity required to terminate them, as well as reviewing the data made by the individuals responsible for container-related activities, shipping and unloading them at the four ports in order to make the required improvements to develop these businesses and analyze all the crises that they went through in Basra, the researcher tried to make this contribution in the hope of realizing what these works face in our ancient ports.

1.1 The problem

There was a major imbalance in the performance of transporting

Table 1: Individuals who provided the researcher with data on the activity of the transport sector in Basra.

S	Responsible name	Place and job
1	Faleh hassan attar abboud	Basra ports company-head of technical observers in the containers department
2	Nour al-huda abdul abbas	General shipping company-accounting department
3	Abdul karim juma'a rashid	Captain and director of the rental department-maritime transport company-basra
4	Captain sabah al-mansouri	In the maritime academy related to maritime transport course-2
5	Abu adeeb abdul amir safi	A railway station near basra-al-maqal ports
6	Raad uribi al-baidani	Offshore oil tankers company the oldest observer in the company
7	Dr. Methaq al-abadi	Assistant director of the office of financial supervision in basra
8	Jihad fadel al-kasad	Senior accountant at khor al-zubir port (private port)

Source: Prepared by the researcher.

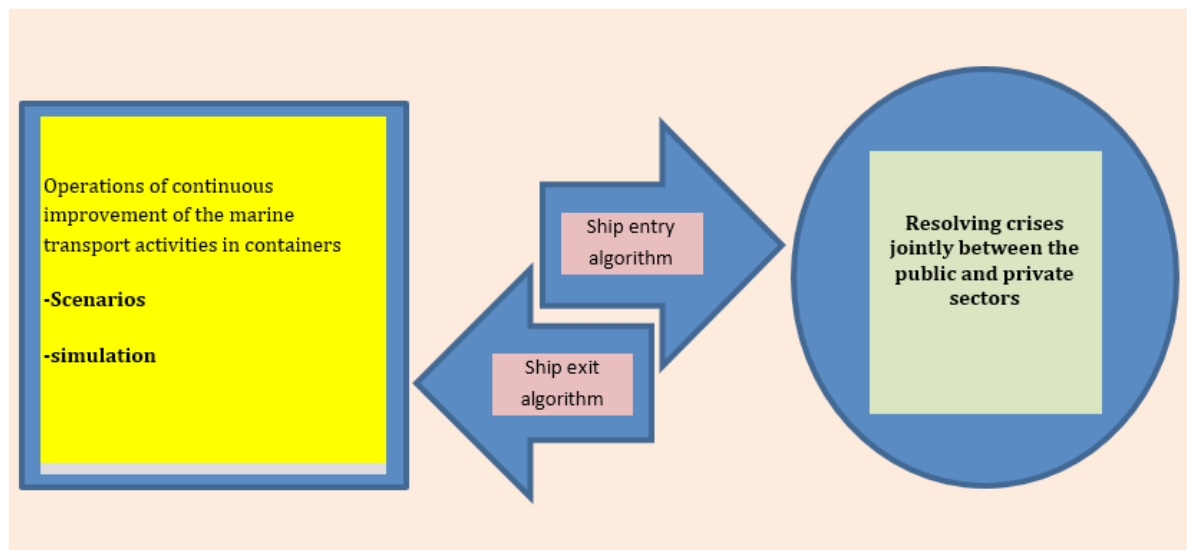


Figure 1. Hypothesis research model (Source: Prepared by the researcher).

containers by maritime activity in the Iraqi ports in Basra and the weak dealers with them in Iraq despite the limited number of them because Basra is close to the Arab Gulf, which distinguishes it from all other regions and governorates of Iraq [1].

This failure is due to the absorption of the role its economic through political interactions in the region, which led to a ripple performance in those ports and paralyzed during periods of war and affected its structure and equipment, and even drowned most of its tankers in the (Shatt al-Arab River) because of recent conflicts over wealth in the region and everyone is aware of these things.

So the researcher diagnosed the problem with the following questions:

- What is the extent of interest in the continuous improvement in the activity of maritime transport in containers in the Iraqi ports in Basra?
- What is the level of seriousness in dealing with ways to get rid of its problems and crises to improve the performance of this interesting sector compared to the interest of other countries in the contemporary period?

1.2 The importance of research

The importance of the current research stems from the importance of examining the role that the maritime transport sector contributes to the performance of the Iraqi ports in Basra through improving the flow of ships and containers to supply the Iraqi economy with the gains it achieves from transferring goods and products to different regions to and from Iraq and discovering the defects in this activity It impedes him in achieving his planned tasks, as it should play from a competitive role compared to the performance of his counterparts in the region and region.

1.3 The goals of research

- Providing important information about the container transport sector that contributes to providing solutions, experiences and reports to get rid of exciting problems in this regard.
- Analysis of bottlenecks facing the performance of the researched sector in Basra ports.
- Reviewing the algorithm for entering and exiting ships in Basra ports and understanding the level of complexity and waiting in the movement of commercial ships.
- Provide recommendations to port managers regarding the use of contemporary techniques to solve some problems and suggest multiple approaches such as scenarios, simulations and brainstorming technology.

1.4 Search limits

The temporal borders of the research extended during the last period after the three wars that passed on Iraq, which raised wide points on the performance of the ports in Basra until June 20 of 2020.

Spatial limits: In the four ports of Basra, but not others (Al-Maqal-Abu Flus-Khor Al-Zubir or Umm Qasr), as it is the closest to the researcher's residence area.

1.5 The research sample

The data collection process was limited to the information available from workers in the field of maritime transport (captain-sailor-expert-accountant) within the limits of 25 Person.

1.6 Data collection methods

- a. Live encounters.
- b. International Reports
- c. Access to relevant studies from the University of Basra and the center for Arab Gulf
- d. Studies at the University of Basra.
- e. Some of the individuals who assisted the researcher in the maritime transport companies in Basra, especially the ones whose names and information are listed in Table 1 below:

1.7 The default search model and its hypotheses

Based on the research problem and its hypothetical model (Figure 1), the two research hypotheses are derived below:

- a. There is a possibility for experts and job cadres working in the Iraqi ports in Basra to improve the strategic performance of transporting goods in containers to various regions of Iraq.
- b. Through the optimal exploitation of the skills and talents of the cadres working in the ports in Basra and the use of specialists in strategic management and knowledge related to drawing plans and future technical scenarios for simulation, the transport crisis can be overcome by containers.

2. THE SECOND TOPIC: LITERARY REVIEW IN MARITIME TRANSPORT IN THE IRAQI PORTS IN BASRA.

Problems, simulations, containers, and container types.

2.1 Facts and problems of Iraqi ports

Hint [2, 3] Several problems facing the development of port performance in Basra are summarized as follows:

- a. Administrative problems related to the failure to pay attention to the implementation of administrative theories and competitive strategies by the authorities responsible for their ports. A simple example is the failure to appoint specialists in the administration of port affairs.
- b. Routine problems represented by the size of the complexity of customs clearance and clearance operations for customers and those involved in shipping, unloading and mooring of ships on berths, as well as major neglect to use the latest technologies in them, similar to the technical capabilities in the ports of the Gulf states (Kuwait, Saudi Arabia, UAE, Bahrain and the Sultanate of Oman).
- c. Lack of spare energies to avoid the problems of accumulating cargo and ships.
- d. Unwillingness to cope with the increase in the number of advanced container ships and rolling vessels.
- e. Legislative problems:

Since its establishment, Iraqi ports have been subject to the provisions of the (Inland Waters Traffic Statement of 1919) issued by (George Fleiger MacMan) at that time, and there were no amendments to this statement from then until 1995 when the Iraqi government approved the Ports Law No.21 For the year 1995 and" published in the Iraqi Al-Waqa'iq newspaper "on the date of 20/11/1995 with the number 3590, I had a great role in demanding the cancellation of the statement of the conduct of ships and the drafting of the new law.

Inventory of marine agencies in the General Company for Water Transport under Law 56 for the year 1985 and thus tightening the screws on the private sector and shipping lines companies in the field of work of marine agencies, where the law of exclusive agencies in Iraq stands a great obstacle in the face of improving marine services and facilities that are supposed to be provided to foreign vessels , Iraq

is almost the only country in the world that still stands in the face of the principle of liberalizing maritime agencies, while it is assumed that opening up prospects for free maritime transactions and ensuring the quality of maritime services provided to incoming ships.

f. Navigational problems:

-The presence of a large number of sunken ships and submarine obstructions under water.

-The depths deteriorate in the (Khor Abdullah) channel, the entrance of the Shatt al-Arab in the outer dam, the internal dam, the entrance to the FAO and the (Karon Dam), and the depths of the sidewalks facades in all ports.

-Failure to maintain naval lighthouses and buoys upon which he relied in inferring correct shipping lanes.

-Relying on old models of navigational buoys, and not using modern models made of reinforced plastic.

Crawling and moving navigational buoys from their places fixed on the marine maps.

-The lack of a comprehensive and renewed survey of the depths of water bodies suitable for navigation.

-Failure to renew and maintain navigational data and information installed in the international maritime references on which ships and carriers heading to our ports depend.

-The lack of a modern and integrated marine communication network covering the needs of ships in navigation lanes and the need for terrestrial wireless stations for modern systems.

-The absence of a specialized marine guidance station in the ship waiting area at the approaches of the Iraqi shipping lanes from the sea side.

-The lack of requirements for combating marine and oil pollution in Iraqi navigational surfaces, the lack of capabilities to combat marine fires, and the lack of ports that should be provided to deal with marine disasters and save the lives of the injured and distressed at sea.

This means that the Iraqi ports were unable to deal with the changes and developments that have occurred in the maritime field since 1919 over a period of 76 years, and this is a vivid example of the Iraqi ports' failure in the field of local maritime legislation. It can be said the most important contemporary problems faced by maritime transport institutions in Iraqi ports in Basra are summarized as follows [4]:

- a. Connecting bridges between the two banks of the Shatt al-Arab because of political events, including demonstrations, protests and sit-ins.
- b. Armed robbery and robbery (from pirates, hunters, and drug trafficking).
- c. Natural hazards such as rain, storms, poor visibility and driving for ships from the captain due to fog and high humidity in Basra.
- d. Cases of fatigue in the captain of the oil tankers due to the long distances.
- e. Bad design of the iron bridges linking the two banks of the Shatt Al-Arab in Basra and the lack of modern technologies in its navigational holes.
- f. The passage of small boats for the hunters and their abundance, and the presence of animals (such as Animal buffalo) and their crossing to the Shatt al-Arab in most of the day.
- g. The decline of some iron bridges due to the tidal phenomenon in Basra (on the Shatt al-Arab).
- h. Nature and seriousness of the transported goods and its seriousness, causing cases (combustion and collision).

i. Lack of traffic flow systems and failure to apply simulation models in Iraqi ports.

Here we raise the following question: What is simulation?

2.2 Strategic steps and requirements to improve the reality of Iraqi ports.

The following accomplishments achieved by the Gulf ports come with the best global ranks in the forefront of the impressive achievements of the Gulf countries as a result of the adherence of the administrations of those ports to their strategy based on solid scientific foundations and successful plans, in addition to its insistence on continuing continuous development and its eagerness to improve its services and obtain the satisfaction of marine agents and ships that She hesitates. Today, the Gulf ports stand at the forefront of the global ports that apply the latest technology and are considered the most secure in the world.

These ports are currently witnessing huge investments in infrastructure, container handling systems and equipment in order to enhance their operational capacity and raise the level of their services. Its strong reputation and brand fame are important evidence of the effectiveness of its strategy.

Scenarios and Steps required for sustainable strategic improvement in Basra ports.

First: Armament with modern technologies.

The Gulf ports witnessed a great demand for armaments with modern technologies, as they represent the most important requirements for entering the port competition arena in the region. To the port and collecting all fees related to the goods, which leads to saving time for service seekers, speedy delivery in clearing and receiving the goods, and accuracy in carrying out the service for the institution and the customer.

These projects have been implemented on the basis of accurate scientific guarantees to ensure success when implemented.

These applications include the following systems [5]:

- a. Customs system of ports in customs.
- b. Shipping Agents Ship agents system with ports.
- c. Manifest Control port control and management system.
- d. Marine Operation Marine Operations Management System and Services.
- e. Contractor Operations System for contractors' operations in ports.
- f. Revenue Collection and Tracking ports revenue and follow-up system.
- g. Container management system and services in the ports.
- h. Ports Gateway Management System.
- i. Project maintenance and management system.
- j. Electronic messaging system in the ports.
- k. Financial management system and accounts in the ports 6 system of administrative affairs and salaries in the ports.
- l. Port and file management system 8 electronic payment system through the internet in ports.

Second: Contract alliances.

Serious endeavour to disassociate strategic alliances with Gulf ports and with a number of international ports in the context of working to develop the port sector and increase its effectiveness.

Third: The pursuit of privatization.

Privatization has become a strategic requirement that many countries have begun to implement, and the methods of its application differ according to the criteria that each party deems appropriate to their operating conditions, and this system, which is called the Gulf term "land master" is the best way to facilitate procedures. The markets are in front of producers and investors in light of the World Trade Organization agreements that aim to remove the natural barriers of time and space and transform the world from a world characterized by nationalist economies to a global economy in which production becomes global in which capital, goods and services flow completely freely between countries supported by the advanced technology that has occurred lately.

2.3 Simulation

It is a process of studying and analysing the behaviour of the total system that allows the application of a set of models and experiments that aim to build a comprehensive perception and awareness of the behaviour of the system using special criteria for evaluation [6-8] though the steps form a logical sequence, they are not necessarily performed in a strictly sequential manner and also that some iteration may be needed.

The importance of simulation:

- a. Reducing the cost.
- b. Reducing time to make appropriate decisions.
- c. Providing safety because it avoids the real system from facing unexpected errors and facilitates the resolution of complex and overlapping errors.

It should be noted that the importance shown above for simulation is real and actual, but it must be treated with caution.

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2.4 Types of simulation

According to [9, 10], simulations have five types, which are as follows:

- a. Static and mobile.
- b. Theoretical and applied.
- c. Confirmed and chance.
- d. Specified and unspecified.
- e. Intermittent event simulation and continuous event simulation.

Our emphasis will be on intermittent simulation models. In spite of the availability of many quantitative models and as we mentioned that are suitable to address limited problems, we may face situations in which we have several branches of a port institution, for example, and these branches depend on several sources that provide us with materials and parts, and their finished goods are shipped to multiple distribution centers, which in turn distribute them to Merchants [11]. In order to facilitate the smooth flow of traffic in such ports, it is necessary to use models for shipping and unloading ships to and from the port, similar to what the American University of Louisiana focused on in public areas for the use of simulation in ports according to its report issued in 1996 related to the use of simulation in ports. Which included the study of the following areas [12].

- a. Service queues problems.
- b. Storage space problems.
- c. Arrival, departure and scheduling of transport vehicles.
- d. Charging and discharging.
- e. Multiple port operations.

f. Operation of forklifts.

2.5 Dimensions in the delivery of a simulation project and the assessment of its Success.

- a. The model: speed, aesthetics and ease of use.
- b. Confidence in the Model: trustworthiness and believability of the model and the results.
- c. The data: availability and accuracy.
- d. The proprietary simulation software: ease of use, suitability, flexibility, links to third party software, confidence.
- e. Credibility of the provider: trustworthiness, believability and honesty of the provider and his/her organization.
- f. Competence of the Provider: possession of the necessary skills and knowledge by the provider and his/her organization to perform the simulation project.
- g. Professionalism: the provider's commitment (to the project, to the customer and to quality), interpersonal skills and appearance.
- h. Reliability of the Provider: consistency of performance and dependability.
- i. Communication and Interaction: frequency, clarity and appropriateness of communication and interaction with those involved in the simulation project.
- j. Involvement: involving everybody (especially the customer) at all stages of the simulation project.
- k. Interpersonal: the relationship between the customer and the provider.
- l. Education: the customer learns about simulation and the model as the project progresses.
- m. Understanding the Customer: the provider makes every effort to understand the customer's needs and expectations.
- n. Responsiveness: the provider gives a timely and appropriate response to the customer's needs and expectations.
- o. Recovery: recovering from problem situations.
- p. Access: approachability and ease of contact of the provider; accessibility of the model 17. Fees: correctly charging for the simulation project.
- q. The Customer's Organization: the commitment of the customer's organization to the simulation project.
- r. Others.

2.6 Fields of using simulation in port management

- a. Simulating navigation systems.
- b. Ports Simulation.
- c. Hose, suction and terminal terminals.
- d. Terminal containers.

Containers are the best means used in sea shipping, and they are characterized by the speed and ease of shipping and unloading, and the protection of goods and not being lost or damaged.

Alongside this advice, some writers suggest reasons for the failure of some simulation projects. Combining their views leads to a list something like the following [9].

- a. Inadequate support.
- b. Organizational changes.
- c. Lack of modelling skills.
- d. No end-user participation.
- e. Ill-defined objectives.
- f. Inadequate or poorly used data.
- g. Use of the wrong software.
- h. Inappropriate or invalid model used.
- i. Poor communication.
- j. Misinterpretation of results.
- k. Poor timing.

Here we must mention about the types of containers as the most important means of shipping in maritime trade, as follows.

2.7 Types of containers

Containers can be classified according to the type of goods in which they are transported to [13]. General cargo containers, and they take many forms, the most important of which are:

- a. Closed container-This type of container is called by other names such as dry load containers or general-purpose containers.
- b. Containers with open roof-and their use is suitable for shipping large irregular materials that are difficult to enter from the doors of the terminal containers, for example machinery, heavy machinery and high cargo whose height exceeds the edges of the upper container.
- c. Containers with open sides-These containers are suitable for goods whose nature requires packing from the side, as well as vegetables and fruits if transporting them for short distances, and also suitable for transporting livestock.
- d. Casting material containers-used for transporting easy-flowing solids such as granules (plastic and chemical fertilizers), powders (such as cement and black carbon), and grains of various types.
- e. Liquid containers for casting and gases-also called tank containers. They are used to transport liquids of different types as well as liquefied gases.
- f. Perishable payload containers-they are used to transport perishable materials with both thermal and cooled types.
- g. Special cargo containers and include:
 - Livestock container.
 - Collapsible container. It is a cargo container with a solid structure whose main components can be folded or dismantled and then reassembled so that their size can be reduced if they are transported empty.
 - Regular containers: 20 ft. 40 ft. Sizes available.
 - Refrigerator containers: equipped with cooling devices.
 - Open top containers.
 - Tank containers. Iraq has a large fleet to transport crude oil from Basra to areas in northern Iraq.
 - Container containers.
 - Flat containers.

-Mobile flat containers.

-Metal containers. The shipping company provides containers of different sizes and types that suit the size, type and nature of the goods they transport, ensuring that the goods are not damaged or broken during shipment in the ships, and the goods are arranged in containers in an accurate and organized manner so that the goods are not crowded, and at the same time the optimal use and use of the spaces Vacant.

The shipping company completes all procedures, papers, approvals and documents required during the shipping process, such as the country of origin, health certificates, etc., in addition to carrying out customs clearance procedures on time-shipment [14].

2.8 The advantages of the container transport system

The advantages resulting from transporting containers are mostly due to the economic aspect that was behind the emergence of this type of transport system.

These advantages can be analyzed into the following elements:

- a. Cargo handling: As container transportation has resulted in the automation of roads in handling cargo, in response to the needs of both shippers and carriers.
- b. Rapid reduction in handling costs.
- c. Reducing the share of the time spent loading and unloading bulk cargo at ports.
- d. Reducing the period of exposure of goods to factors of damage and loss.

For this, we will be exposed to cargo handling from the following aspects:

- a. The container system reduces the number of handling times and increases its speed.
- b. Reducing the risk of theft.
- c. Reducing the total cost of transportation.
- d. The container system also increases productivity in handling cargo and reduces labor costs, perhaps.
- e. The container system increases the speed of rotation of ships from the ports, as it decreased from seven days for conventional ships to 15 hours in container ships.
- f. Ports are also beneficiaries of the use of containers in transport operations. Increasing the productivity of goods means transporting them in less time, which leads to reducing sidewalks and increasing their specialties.
- g. The use of the container system (profiling) will lead to a decrease in the number of ships on the marine lines in the world (due to the high productivity).

2.9 Container transport system and its impact on the selection of industrial sites

Modules will undoubtedly also have far-reaching implications for industrial site selection. As the speed of the transport units that lead to shortening distances, in addition to the protection provided by the stereotyping process during the transport process, all of this increases the freedom to take decisions to localize projects, and that the final consumption will be less attractive to the manufactured products when the time required for the transfer process decreases. Moreover, labor costs, raw material price and quality of climate will also be taken into consideration when deciding on an industry location.

2.10 Container and combined freight transportation

The existence of the container was necessary to implement the idea of integrated transportation, which is nothing more than a multi-

mode transport, a joint transport, or a penetrated transport, which are nomenclature in the same name. The economic benefit of joint transportation in containers is only evident by comparison with other transportation systems. It was found that the cost of transporting one ton from the door to the door in the case of traditional transport is 27.11 dollars while it was found 10.97 dollars per ton in the case of container transportation, Which clearly shows that container transportation favours other types of transportation, especially if the joint transportation is from door to door [15].

2.11 Benefits of containers in reducing packaging costs

One of the major benefits of a container system is the simplification and economy of packaging requirements.

2.12 Containers and freight

Fees for shipping containers are without freight by traditional means, whether in terms of the percentage of discount granted by the carriers to shippers to use the containers in export which is 5% in the case of transporting goods from the port to the port and 10% in the case of door transportation for the door.

3. THE THIRD TOPIC: OBSTRUCTIONS OF THE CONTAINER TRANSPORT SYSTEM

a. Labor barriers.

b. Financial barriers.

c. One of the problems is the problem of the economic use of containers to which facilities that contain containers are subjected to in order to rent them to transport operators or owners of transported goods, as such containers are usually leased on a certain time basis, and the burden of economic exploitation of the container rests with the tenant, even if it is assumed that The owner of the container before purchasing it for the purpose of leasing-studies the expected volume of demand for container rental, the distribution of this request and its regularity, and the common and expected tariff categories during the useful life of the container (which can reach ten years on average).

d. Each container ship needs at least three sets of containers, one of each of the two loading and unloading ports and the third group on board. This means that a container ship of 2000 container capacity to ensure the continuity of its work must be equipped with 6000 containers in order to be divided into three groups as shown above.

e. Empty containers represent huge financial burdens first on the carrier as it must be re-directed to where the goods are to be transported and then there must be an advanced logistical system to serve the foreign trade requirements of different countries of the world and the second problem due to these conditions is the additional financial burdens that it carries the carrier to the importer of the goods as the sources indicate the following:

-In Jeddah Islamic Port (Saudi Arabia), the weight of goods in incoming containers is 4.5 and loaded 1.2 million tons.

-In (Shuwaikh) Port (in Kuwait) the weight of cargo in incoming containers is 1.1 and loaded 0.4 million tons, but the percentage of empty containers that are handled in those ports ranges between 60.70% of the total number of containers in the return journey.

The issue of imbalance between exports and imports is one of the pressing problems that Arab foreign trade suffers from at the international, regional and local levels, and it is important that it can be viewed from a regional perspective in order to reduce the negative effects that result from it.

3.1 The history and future of container transport in Iraq compared to the Arab Gulf states.

As we look to the evolution of the container's appearance on the international transport scene, we must discuss this in Iraq, which is part of the developing world, to see how its ports have been affected by this revolution that has shifted the scales of transportation all over the

world. Iraq has dealt with containers since 1977, and in the same year launched a berth specializing in (Umm Qasr) with the necessary levers. In 1978, another berth equipped with specialized cranes for handling containers was inaugurated.

As for the year 2007, we see that Umm Qasr Port contains (two berths that deal with the typical containers, which are Berth No. 4 and Berth No.20), while Berth No.21 is the Dock of Ro-ro. It is located in 1978.

As for the Khor Al-Zubair port, it does not have sidewalks to deal with stereotypes. The number of incoming container ships in Umm Qasr Port reached 196, and the total number of empty containers in the port reached 39 463, with a total load 819 573. As for the cranes that serve these piers, they are only two bridge cranes.

The port of Umm Qasr has entered into a memorandum of understanding with container ships that frequent it using its cranes.

Special in unloading its cargo while giving it priority in laying on the unloading dock. Through the foregoing, we can observe the extent of the Iraqi ports' delay in keeping pace with the development process that takes place in the neighbouring ports. In the port of Jebel Ali, there are 18 berths dealing with containers and two berths with rolling ships, which are equipped with the most advanced equipment. The same applies to the Rashid Port in Dubai, where the container berths reach five berths, and they are also equipped with the latest equipment for handling. The same applies to Khalid Port in Sharjah.

As for the Jeddah port in Saudi Arabia, there are 12 berths for containers, four berths for refrigerated and frozen goods, ten berths for rolling (RO-RO), and two berths for live livestock. As for the King Abdulaziz Port-Dammam, which is located on the Arabian Gulf, it contains 17 berths for standardized transport and rolling-RO-RO. The total unloaded load capacity of container ships reached 5 229 705 tons, while the number of unloaded containers in it in 2006 reached 321 560 containers. As for Jubail Commercial Port, which is located on the coast of the Arabian Gulf, there are two berths dedicated to container ships and rolling ships. As for the volume of cargo handled in this port, it reached 2 887 422 tons in 2006. As for the number of empty containers, it reached 1 490 containers.

As for Kuwait. It is one of its most prominent ports, Shuwaikh Port, and it contains a number of container berths. The volume of cargo handled reached 8 239 746 for the year 2005. As for the number of empty containers, it reached 125 008 containers for the same year 2005.

As for the Kuwaiti Shuaiba Port, it has four berths dedicated to handling containers, and the total cargo handling there reached 23 554 190 tons, while the number of containers handled at Shuaiba Port reached 548 464 containers for the year 2005. Through this rapid review of the port activities in the countries neighbouring Iraq We note the extent of development that occurred with the container transport system and rolling ships. And this is through the number of berths and the volume of empty containers in these ports, while we see that the Iraqi ports remain on the number of berths in them.

Only one berth for containers since 1978, and one berth for rolling ships, in addition to the lack of appropriate and appropriate cranes to deal with the container transport system.

4. THE FOURTH TOPIC: THE ALGORITHM FOR THE ENTRY AND EXIT OF SHIPS TO IRAQI PORTS

Below we review the algorithm for entering and leaving ships from Iraqi ports with a detailed explanation of their vocabulary [2].

4.1 Explanation of the vocabulary of the algorithm for entering ships to Iraqi ports.

The ship entry mechanism starts to work as soon as the ship's agent submits the reservation form, as the reservation form is considered as an official announcement of the intention to use the port by a particular ship, and the reservation form must contain the following information:

a. The approximate ship arrival time. Eta (Estimated Time of Arrival).

b. Gross Tonnage (G Registered Tonnage). This statement will be of great importance as the calculation of the returns of marine services depends mainly on it.

c. The ship number registered with the International Maritime Organization (IMO Number) consisting of seven numbers.

d. Call sign as it is known that each ship has a single call sign which is a mixture of numbers and Latin letters.

e. The name of the ship in Latin letters. H. The Length Over ALL, which gives the port management and the port's captain an idea of the anchorage appropriate to the length of the ship and the number of pullers that will be used and prepared in the mooring and take off operations.

f. Arrival Draught which gives an idea of a suitable berth for mooring, according to the reports of the port's surveying unit.

g. The amount of tonnage in metric tons each metric ton is equal to 1000 kg until comparison with the Manifest (the manifest is the freight lists and conditions for accepting the freight list, to be clear and signed by the captain of the means of transportation) international load to verify the correctness of the information contained in both the two documents by the port's internal audit and oversight unit.

h. Type of load. The port of loading the last port from which the ship was carried. This information can be used by the customs and immigration authorities.

i. The name of the appointed agent, his telephone number and postal address. We mean the appointed agent is the agent who was appointed by either the ship owner or charterer or the operator.

The designated vessel agent shall provide two documents for which the port fees and wages are calculated based on the information confirmed by them in accordance with the applicable tariff tables. Which he submits to the port administration (Operations and Financial Returns Unit) either by e-mail or directly by the ship's local agent. They are:

a. Booking Form.

b. Cargo manifest.

And that was exactly five days before the ship arrived at the guidance station.

The concerned employee of the Operations and Financial Returns Unit calculates the port returns and issues a preliminary invoice PDA (PROFORMA DISBURSEMENT AMOUNT) and is sent to the port's internal audit and oversight unit for the purpose of approval and return it to the issuing authority (Operations and Financial Returns Unit) to be sent to the ship's agent either through the internet or delivered directly to the ship's agent, which is a claim payable.

The archive employee opens a file for the ship in which the following matters are kept:

a. All communications.

b. Reservation form.

c. manifest payload.

d. The invoice.

e. Entry permit.

f. All other papers.

g. The documents of the ship in question.

Upon receipt of the arrival notice, the ship's information is sent to the Port Joint Security Operation Center (PJSOC).

It is the unit consisting of:

- a. Port Protection Force (FPS)
- b. Customs Authority at the port.
- c. Immigration Authority.
- d. Naval Force Command ICDF
- e. River patrols
- f. Coast Guard.

Whereas, each of the entities present in the joint port security unit does a specific job as follows:

First: Command of the Naval Force ICDF.

Their task will be to secure the navigation channel from piracy and the proliferation of fishermen in the navigation course of ships, in addition to controlling smugglers, preventing suspicious boats from exposure to ships and combating maritime terrorism. And the scope of their authority starts from the final edge of our territorial waters in front of Basra Oil Port (formerly Al-Baker Port) near buoy No.1 and until buoy No. 36 outside.

Second: The Coast Guard and the Inland Water Directorate, IRP.

The scope of its authority starts from buoy No.36 inside and up to the sidewalk facades in Umm Qasr port in addition to the nearby channel of the Khor Al-Zubir port and up to the sidewalks at the Khor Al-Zubir port and their duties are:

- Provide protection to ships from piracy.
- Provide protection from smuggling operations.
- Anti-terrorism.

Third: FPS Their mission is as follows:

- Protection of the port's facilities and properties.
- Provide a safe environment for the port activities.
- Setting entry gates.
- Inspecting wheels and people entering and leaving the port.
- Dealing with emergency cases.
- Submitting daily reports on ships anchored on the docks and controlling cases of administrative corruption.

Forth: Customs duties:

- Conduct field inspection on ships.
- Checking the payload of the cargo.
- Ratification of customs declarations.
- Control the ships' warehouses and their contents.
- Issuing a clearance of the ships and collecting customs fees according to the applicable customs regulations and laws.

Fifth: Carrying out field inspection of ships and checking seafarers' passports Configure seafarers' settings. CREW LIST-Ensure that the ship is free of infiltrators It is clear that each party works in isolation from the other, according to its own laws, laws and instructions, and there is no overlap between them.

The security unit at the port gives the green light for the ship to enter the port in terms of security.

The ship's agent confesses receipt of the primary invoice and proceeds to

transfer the amount of interest and wages to the account of the General Company for Iraqi Ports, either by telegraphic transfer to the address installed at the bottom of the primary invoice, or by paying in cash.

Upon receipt of the operations and financial returns unit, proof that the payment was completed, gives permission or the line to allow entry into the ship in three copies:

- The first copy for safekeeping in the ship's file.
- The second copy to maritime control for the purpose of allocating a specialized naval guide.
- The third copy to the maritime navigation unit at the port for the purpose of preparing the pullers, the connecting group and the master of the port.

The process of unloading or shipping begins when the requirements are completed and upon completion the ship summary is sent by the unloading and shipping department to the Operations and Financial Returns Unit for the purpose of issuing the final invoice that is calculated based on the information received from the quay occupied by the ship and this information is:

- The number of trucks.
- Delivery vouchers.
- Weight strips.
- The number of tons actually emptied.

Differences, if any, are calculated either for the ports or for the ship. It is preferable to calculate the ship permanently if the final bill is issued.

4.2 Explanation of the vocabulary of algorithm for leaving ships from Iraqi ports.

The departure mechanism shall start as soon as the designated ship agent submits the departure request addressed to the port department. Or if he presents a Statement of Facts SOF that contains some information about the ship's history prior to its arrival into Iraqi territorial waters, as that information is identical to what is in the log book's accident log, and we include in the following the most important information that the facts form contains:

- a. The name of the ship in Latin letters.
- b. Time and date of exit from the checkpoint; the time and date the ship arrived at the guidance station; the time of the anchor's throw at the guidance station.
- c. The starting time for the ship to start unloading at the port of discharge, which is the time to calculate the delay of the vessel for the ship's owner (Tendered nor) (notice of readiness).
- d. The time the ship owner accepts the ship directly at the port. Accepted nor.
- e. The time for the maritime pilot to board the ship, start pilot on board.
- f. The time of the port's captain boarding on the ship, end pilot on board.
- g. Time of the ship's mooring on the dock.
- h. Time to initiate unloading.
- i. Time to complete the discharge completely.

Weight and type of tonnage.

- a. Holidays during the ship's stay at the port.
- b. Set when to withdraw forms.
- c. Determine when to accept the load.

Table 2. The names of Basra Ports belonging to the General Company for Iraqi Ports and the number of their berths

Ports type	The name of the port	Berths number	Berth type	Planned annual net returns
Commercial	North Umm Qasr	18	Commercial	10 trillion Iraqi dinars
	South Umm Qasr	14	Commercial	
	Khor al-Zubir	-	Oil berths	
	Abu Floss	2	Container berths and oil berths	
	The Maqal	14	Commercial	
Oil	Rahwi	12	Oil	10 trillion Iraqi dinars
	Al oumia	10	Oil	
	Basra	13	Oil	
Under construction	The Great FAO Port	In progress	Commercial And oil	10 trillion Iraqi dinars
3	9	83	3 comm, 4 oil, 2 mix Total 9	

Master remarks.

a. Daily reports of unloading, stops and their causes. Events from arrival and actual time of work.

b. Approval of the ship's captain.

c. Authentication of the designated vessel agent.

d. Authentication of the ship owner.

It is clear from the foregoing how important this document is because it contains documented information, especially with regard to the process of calculating discharge and shipping returns.

The concerned employee of the Operations and Financial Returns Unit, upon receipt of the departure notification (the request of the agent to recommend a maritime pilot), notifies the port security unit with the intention of the departure ship and at the same time requests the ship's summary from the quay (unloading and shipping department) for the purpose of issuing the final invoice.

The ship may be allowed to leave before receiving the bank's notification to transfer the amount (the final bill) as the process of transferring the amount requires some time, and it is not preferable to keep the ship until the notification is received, especially those ships loaded with foodstuffs belonging to the Ministry of Trade and ships used for the port in a shuttle.

When the port's security unit gives the green light to leave, a departure permit is issued by the port administration in three copies: A copy of the maritime control for the purpose of allocating a marine sprinkler. A copy to the port navigation unit. A copy kept in the ship's file with the Operations and Financial Returns Unit.

The port's captain configures the pullers and anchor group, and asks the ship's captain to start the engine ahead of time, and remains on standby pending the arrival of the maritime pilot and getting on the ship.

Upon the arrival of the maritime pilot on board the ship, the departure process begins with loosening the ropes and accompanying them outside the port limits.

The maritime guide instructs the ship to the guidance station, where its work ends and leaves the ship.

and in the following Tables 2-3, the researcher reviews the data and the process of analyzing it in order to see the facts discovered by the researcher from these ports and the level of work carried out within one month, as in the data obtained by the researcher from the individuals in the research sample.

The table prepared by the researcher based on the information indicated in it and obtained by the researcher from one of the officials of the

Financial Supervision Bureau in Basra, which is Mr. Associate Director of the Bureau referred to in Table 1 its sequence 7.

Upon the interview with one of the officials, the researcher obtained a summary of the modern works in the northern port of Umm Qasr, as follows.

In implementation of the directives of the Minister of Transport and with the follow-up of the Director General of the Iraqi Ports Company and under the supervision of the Director of (Northern Umm Qasr Port) and in implementation of the plans prepared in advance.

Unloading and shipping continues to implement rapid handling in unloading goods, containers and equipment to gain the time factor in receiving the largest possible number of ships on the docks The Chief Engineer Saad Sabbar, Associate Director of (northern Umm Qasr Port) said that the port management works according to modern mechanisms in unloading and handling for the purpose of facilitating the entry of ships from the waiting site, and this procedure achieved great success, the results of which were evident in these days.

And the cactus between the huge and large size for unloading and exporting through the container berths, as it reached within five days only 7 521 vacuum containers and 6 973 exported containers, and he added that the northern berths are operating at full capacity by receiving ships loaded with modern cars, pipes, equipment and various goods in addition to containers. Pointing to the great efforts made by workers in the unloading and shipping division, returns, wages, administration, services and related units.

It is reported that the (Northern port of Umm Qasr) is one of the largest ports in Iraq and receives giant ships with high submarines and is one of the most important ports in the region.

Chief Engineer (Ms. Saad Sabbar (Associate Director of (Northern Umm Qasr Port), said that the port administration operates according to modern mechanisms for unloading and handling for the purpose of facilitating the operations of entering ships from the waiting site, and this procedure achieved great success, the results of which were evident in these days. And between the huge and large size cactus for discharging and exporting through the container berths, as it reached within five days only 7 521 vacuum containers and 6 973 exported containers, i.e. as a total 14 484 empty and exported containers within five days only And he added that the northern sidewalks are operating at full capacity by receiving ships loaded with modern cars, pipes, equipment and miscellaneous goods in addition to containers, indicating the great efforts made by workers in the unloading and shipping division, returns, wages, administration, services and related units. It is worth noting that the (Northern port of Umm Qasr) is one of the largest ports in Iraq and receives giant ships with high submarines and is one of the most important ports in the region.

And the following Table 3 shows the average number of ships entering the four ports of Basra in one year, starting from 2015-2019, according to

Table3. The average number of ships entering the four ports of Basra in one year (Source: From the records of officials in the four ports).

S	Port	Location	Average number of ships entering every month	Percent	The number of containers arriving from them for the berths	Percent	Maximum port capacity of containers	Percent	Amount of excess energy from containers
1	North of umm qasr	Basra district or umm qasr	3466	22%	519893	22%	1700000	25%	1180107
2	Khor al-zubir	Zubir	2709	17%	346753	15%	1500000	23%	1153247
3	Abu floss	Abu al-khaseeb	3786	24%	549328	23%	1450000	22%	900672
4	Maqal	Basra governorate center	5800	37%	967890	40%	2000000	30%	1032110
Σ	4	4	15761	100%	2383864	100%	6650000	100%	4266136

the information obtained by the researcher from the people mentioned in the previous Table 1.

From Table 3 above, the amount of weakness in receiving ships and containers is clear for the period between 2015-2019 compared to their absorptive capacity and the large surplus in energy, and this constituted a major waste in the structural resources of Basra's ports and it is imperative to carry out the largest deals from all countries related (liquid, steel, gas and material activity) Exploiting the remaining warehouses, warehouses, and sidewalks available for the purpose of benefiting from its resources, and consequently, accustoming the country to financial, food and commercial imports that would improve the living conditions of members of Iraqi society and operate the unemployed and disadvantaged groups. It is clear from the above the size of the complexity and intertwining between the various parties in terms of desire for speed and the security, economic and humanitarian aspects in this routine and professional process and the tolerance and patience of the captain of the ship and the sailors and the security men and the delay that it causes due to the anchoring of ships on the coasts and beaches and the interruption of the movement of pedestrians on The bridges that pass from below and through it, which calls for a deep and spatial analysis of various disciplines to reveal all his money in relation to getting rid of problems and obstacles that reduce this active activity and make continuous improvements and re-engineering the ports and sidewalks in a way that is theoretically and practically compatible with the efforts of the countries surrounding Iraq. The bottom line is that although marine works require legal and international matters, security protocols, documents and the like in an extremely complicated, accurate and official waiting times as it was revealed to the researcher it cannot be reduced in any way to technical, professional, spatial, human and temporal reasons, but some tasks can be redesigned in a manner that is consistent with The high performance that some ports perform in developed countries, such as the introduction of advanced systems in storage, navigation, sailing, inquiries and monitoring, to reduce the severity of disasters and crises, and to exploit the available untapped structure as we noted from the previous Table 2.

So, through what has been strategically extrapolated about the material and human resources of Basra, and its location and history.

The initial research hypotheses, which were identified by the researcher, can be confirmed by:

a. There is a possibility for experts and job cadres working in the Iraqi ports in Basra to improve the strategic performance of transporting goods in containers to various regions of Iraq.

b. Through the optimal exploitation of the skills and talents of the cadres working in the ports in Basra and the use of specialists in strategic management and knowledge related to drawing plans and future technical scenarios for simulation, the transport crisis can be overcome by containers.

5. THE FIFTH TOPIC: CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions

a. It was found that there are several obstacles to the use of containers

in the maritime transport sector in Iraqi ports, and these obstacles have been diagnosed, but the rampant corruption in the Ministry of Transport prevents the research movement from making the improvements proposed by researchers to raise the level of performance due to partisanship and abhorrent quotas in the sharing of spoils and sidewalks and other agreements hidden between the corrupt Of the parties dominating this sector.

b. There is a possibility and a high readiness to use modern technologies to facilitate the flow of ships to and from the Iraqi ports in Basra, which was revealed through the meetings that the researcher conducted with some of the officials in them.

c. Most of the gains of some of Basra's ports (Umm Qasr and Khor Al-Zubir Port) are almost from the work of the private sector and among the domestic companies that dominate this activity are the Kurdish auto.

d. The most frequent crises in Iraqi ports in Basra due to the frequent bad political conditions in Iraq and the reasons are known are the lack of security and economic instability of the many wars and economic conflict in the countries of the region.

5.2 Recommendations

a. It is important for Basra port departments to participate in local, regional and international seminars, workshops and workshops (brainstorming) and to provide an opportunity for its talented elements to actively participate in international reports that provide consultations, guidance and recommendations in the areas of container transport and the future of maritime trade for them.

b. It is necessary for the port administration in Basra to develop a system concerned with crisis management through employing advanced simulation systems or planning and anticipating the occurrence of these crises by preparing scenarios that are concerned with the smooth economic control activities on the transport activity in containers and all its money is logistical relationship with them.

c. It is desirable to establish centers for the development and advanced education of transport in containers and others by seeking to build an electronic simulation system, and its management will be shared equally between the public sector and the private sector in the various fields of local marine, land and air transport activity.

d. It is important to broaden the scope of anticipation and extrapolation of indicators of future trends in managing the environment of its economic activity at the local, regional and international levels and to benefit from the contributions of those who prepare international and regional reports and seize opportunities to benefit from its developments.

e. Developing advanced support mechanisms by attracting local experts from Iraqi universities and research and study centers therein to help Iraqi port administrations diagnose their crises and competitive reality in light of the new changes and trends in the global economy, improve their performance and institutional behaviour, and facilitate their integration into the global economy and their presence in foreign markets.

f. Rescue teams must be created for people, animals and property, whether they are alive or damaged in the event of natural or other crises, which include providing safe places during evacuation, and they are usually prepared in stages that range between before, during and after the crisis and according to the nature of the crisis and the situation.

REFERENCES:

- [1] Omar Hashem Jaafar. "A presentation in upgrading Iraqi ports" a chartered accountant and consultant to Sharjah on 10/6/2006. The United Arab Emirates. U.A.E (2006).
- [2] Al-Hamami Hessien. Algorithm for ships to enter the Al-Maqal port. A working paper was presented at a seminar held by the Directorate of Maritime Transport in Basra (2005).
- [3] Kazem, F. "Towards developing and upgrading Iraqi ports" An in-depth scientific study aimed at analyzing the factors of the progress of the Gulf ports, monitoring their accomplishments and strategic plans, and an accurate analysis of the problems facing Iraqi ports and ways to improve their level." Basra. Iraq (2005).
- [4] Al-Hammami, K.A. "Basra our ports in Basra". University of Basra. <http://www.basrahcity.net/pather/bbook/mawanaa/01.htmlpp1-60>
- [5] Moheeb Kamil Flayeh. Iraq's Transport Strategy. <http://www.ymca.net/...nities-guide/active-11.html2017:p3>
- [6] Fermeiro, J., Moreira, F., Pombo, J., Calado, R., Mariano, S. "Multifunctional prosthesis control with simulation of myoelectric signals" ICEUBI2019 International congress on Engineering—Engineering for evolution. (2020) 805-819.
- [7] Al-Rashed. Ahmed Ali Ahmed "Using a multi-purpose simulation model in Basra ports" unpublished doctoral thesis, University of Basra (2007).
- [8] Fermín Sánchez. Loop pipelining with resource and timing constraints Universitat Politècnica de Catalunya (1995) 28.
- [9] Robinson S., Pidd, M. Provider and customer expectations of successful simulation projects. Journal of the operational research society, (1998) 49(3): 200-209.
- [10] Moschovou T., Tyrinopoulos Y. Exploring the effects of economic crisis in road transport: The case of Greece. International journal of transportation science and technology, (2018) 7(4): 264-273.
- [11] Obaidat Khaled "Production and operations management, Dar Al Yazouri, Amman, Jordan (2008).
- [12] The state of Louisiana has its 1996 report on port simulation Louisiana State. (1997) 3.
- [13] Hussein, Ali. "Transport in containers and its importance in raising the performance of ports in the countries of the Gulf Cooperation Council with a special reference to Iraq," MA thesis. University of Basra (2015).
- [14] The effect of green shipping practices on multinational companies' loyalty in Malaysia. <https://www.researchgate.net/publication/337334129>.
- [15] IBI Group and Noxon Associates Limited. Transport Canada, strategies for sustainable transportation planning: a review of practices and options (2005).

