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A Computer Simulation Based Evaluation Of Port Emergency Preparedness And Response Evacuation Plans For Predictable Natural Disasters

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A COMPUTER SIMULATION BASED EVALUATION OF PORT EMERGENCY PREPAREDNESS AND RESPONSE EVACUATION PLANS FOR PREDICTABLE NATURAL DISASTERS

by

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BIOGRAPHICAL SKETCH

Maurice Antoine Jackson was born on July 19, 1985, in Camden, New Jersey and grew up in Atlanta, Georgia. He received his Bachelor of Science degree in Industrial Engineering from North Carolina Agricultural and Technical State University in 2007. He is a candidate for the Master of Science degree in Industrial Engineering.

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ABSTRACT

Jackson, Maurice Antoine. A COMPUTER SIMULATION BASED EVALUATION OF PORT EMERGENCY PREPAREDNESS AND RESPONSE EVACUATION PLANS FOR PREDICTABLE NATURAL DISASTERS. **(Major Advisor: Dr. Xuili Qu)**, North Carolina Agricultural and Technical State University.

Given the approach of a hurricane, U.S. port decision makers are required to follow a set of policies and procedures to evacuate the infrastructure. The effectiveness of such policies can determine the level of damage that the port will experience and have implications on its recovery time. Therefore, the objective of this research is to evaluate and compare the effectiveness of port emergency response and evacuation plans to predictable natural disasters, such as hurricanes. In this research, a computer-based simulation is built to capture a complex port environment in the normal operations and during the hurricane response procedure. Due to the non-static nature of the port environment, this research incorporates dynamic network flow theories into the simulation model to consider the variations in capacity and travel flow rates from one location to another during port evacuation.

Each phase of the port emergency evacuation plan, “Whiskey”, “X-Ray”, “Yankee”, “Zulu”, and “Recovery”, are analyzed to identify the critical and efficient determining actions that must take place for a successful port evacuation. These actions in conjunction with port operational and environmental characteristics, capacity and flow variations, and evacuee behavioral aspects are considered to design a variety of possible evacuation scenarios to evaluate, compare, and quantify port evacuation strategies and

identify the impact of environmental factors and port characteristics on evacuation policy effectiveness. The developed simulation model is used to estimate the port productivity and the potential damage in each scenario, which evaluate and quantify the effectiveness of port evacuation plans. The results in this study demonstrate that while the current evacuation policies and procedures are sufficient for most emergency conditions, if the method presented is applied, the effectiveness of evacuation plans could be improved, providing information regarding expected damages and how to reduce them.

CHAPTER 1

Introduction

1.1. Background

The ability to predict an oncoming disaster can greatly reduce the impact it may have on the areas at risk of coming in contact with the occurrence. A disaster can be defined as *"any event, human-made or natural, sudden or progressive, causing widespread human material or environmental losses, which exceed the ability of the affected community to cope using its own resources"* (Kelman and Pooley, 2004). This means that the resulting loss depends on the capacity of the population to resist the disaster and their resilience to the effects of it, whether erratic or foreseeable. Natural disasters such as hurricanes, floods, drought, volcanic eruptions, famine, etc. are examples of the latter being that they are more predictable. They are a part of our living experiences and can have significant and devastating effects in terms of human injuries and property damage. For largely populated areas, the risk of damage as a result of a disaster is greater due to the amount of people, the infrastructures maintained by those people, and the economic percentage those infrastructures account for.

With an area of 268,820 square miles and a growing population of 24.6 million residents (U.S. Census Bureau, 2008), Texas is the second-largest state in the United States in terms of both land area and population. The state is also home to Houston, the fourth-largest city in the U.S., which accounts for 8.9% of the population or 2.2 million people. In an environment with a population as large as Houston, the economy that supports it must be equally as large. Houston's economy has a broad industrial base that is largely impacted by energy commerce as well as manufacturing, aeronautics, transportation, and health care divisions. This high level of diversity is directly related to the city's thriving economy, low inflation, and relatively high standard of living. A key infrastructure and catalyst for economic sustainability and development in the Houston region is the Port of Houston. The port is a 25-mile long complex of public and over one-hundred and fifty private facilities. Due to its centralized location in the Gulf of Mexico and ease of access, it is one of the fastest growing United States ports. It ranks first in the United States in terms of international waterborne tonnage handled, second in total cargo tonnage handled and is considered the fifteenth busiest port in the world (American Association of Port Authorities, 2008).

Evidently, ports play an important role in maintaining the economic stature of the United States. The maritime industry contributes approximately $742 billion to the gross domestic product each year (Committee on the Marine Transportation System, 2010). "*It has been estimated that more than 95% of the United States' commercial tonnage is shipped on the nation's ports and waterways. During the next 20 years that total volume of goods is expected to double. With over 95,000 miles of shoreline and 25,000 miles of navigable waterways, the United States represents a formidable presence to be prepared and secured*" (Emerson and Nadeau, 2003).

In the presence of a disaster, the probability of damage for an infrastructure of this magnitude can be extremely high if the proper emergency preparedness plans are not in place. The resiliency of these key economic infrastructures greatly influences the associated shut down costs given a disaster occurrence which has lead to research initiatives centered on improved port emergency preparedness. Being prepared consists of proper planning for disasters, development of various countermeasures, and response strategies needed to successfully react to an emergency situation. Included in disaster preparedness are the policies and procedures necessary to evacuate from the facility. This research aims to address the utility of evacuation preparedness plans in the port environment given the presence of a predictable disaster.

1.2. Motivation

Tanatmis (2010) and the AG Optimization Group at the University of Kaiserslautern identified evacuation planning as an important aspect of emergency processes and displayed the significance of a variety of models and techniques, including network flow and simulation, utilized in evacuation planning. They demonstrated that evacuation problems can arise in different types of systems such as buildings, cities or regions, and transportation forms. The value of evacuation planning was also proven by Yamada (1996) who used network flow optimization to evaluate the effectiveness of the current emergency evacuation plan of a small city in Japan. Asllani, Dileepan, and Ettkins (2007) also validated this implication of value by using a network flow problem and computer-based simulation to analyze the policies set in place by an emergency preparedness agency given a mass vaccination situation.

All of the aforementioned cases clearly illustrate the benefits of evacuation planning, however they do not display the complexity present in a port environment or the opportunities they can provide for port decision makers. Similar to office buildings and urban cities, port infrastructures are required to have severe weather policies for evacuation set in place as a preparedness strategy. However, lack of proper evaluation of these policies across varying conditions, differing environments, and disaster types creates inconstancies and uncertainty in plan efficiency. While buildings and cities have their technical approaches, there are currently no scientific methods for evaluating the effectiveness of port emergency preparedness and response plans for predictable natural disasters. A common emergency situation for port environments is presented by natural disasters, specifically hurricanes. While hurricanes vary in potential impact, their predictability provides some relief in developing preparedness activities which include an evacuation.

In the maritime industry, specifically in 2006, approximately 212 million tons of cargo was moved through the Port of Houston, about 1.6 million of which was containerized cargo (Port of Houston Authority (POHA), 2010). In the event that a disaster situation occurs resulting in the shutdown of the port due to the risk and presence of damages, it is estimated that the associated economic loss is $400 million per day (Shulterbrandt, 2009). Given the size of this Port of Houston and the detrimental effects it can have on the economy over long periods of time, the ability of port decision makers to reduce the probability of damages through emergency preparedness planning is of extreme importance. This need is the motivation for this research thrust in identifying the facets involved in port evacuation planning, the related decisions for a predictable disasters leading up to the complete shutdown of a port, and the recovery implications thereafter.

1.3. Research Scope

Mitigation is defined as being "*an integral part of effectively neutralizing the impact of disasters consisting of pre-planning, equipment design and trained operators skilled at interpreting the nature of an event and deciding on effective address procedures"* (Emerson and Nadeau, 2003). In the event of a hurricane, the Port of Houston and other U.S. ports have guidelines and evacuation plans established to aid decision makers in their mitigation efforts and to determine when and how the port should be shut down if necessary. These plans have implications on the port's productivity and capability, ship arrival and departure schedules, manpower requirements, equipment availability, and the amount of time it takes to properly and safely shut down the port.

During the presence of a hurricane, port evacuation policies and procedures, if not properly conducted, can lead to increased risk of damage. The amount of damage caused to a port by such a disaster can greatly impact the amount of time it takes to recover and get the port back up to operational status. The longer it takes for the port to re-open the more revenue is lost not only to the port and its surrounding local area but nationally as well. This displays the value that the research will bring to the port industry.

The purpose of this research is to evaluate and compare the effectiveness of port emergency response and evacuation plans to predictable natural disasters. In this research, to assess the effectiveness of port evacuation plans, we apply dynamic network flow theory to aid in modeling the complex nature of port infrastructures and the evacuation given the approach of a predictable natural disaster, such as a hurricane, and various contributing factors including port policies and procedures, port condition, resource capacity and availability, arrival and departure rates, evacuee behaviors, hurricane category, and potential risk and damage. To properly represent the port environment, we use historical operational data from the Port of Houston to construct a computer-based simulation model of conventional port activities. To further understand the functionality of a port during the occurrence of a predictable disaster, this model is verified and validated under realistic scenarios and existent world conditions utilizing historical hurricane data for the Texas area including one of the most recent and noted disasters to strike the region, hurricane Ike. With all of these components, this research aims to address the following questions:

1. What are the imperative emergency response policies and procedures to be performed during a predictable disaster?
2. When should these key emergency response policies and procedures be initiated?
3. Are there differences in emergency preparedness and response plans depending on port location, size, shipping volume, and/or potential disaster type?
4. Should evacuation policies and procedures be standard, apart from the port itself and the attributes of the predictable disaster, or vary based on port characteristics, the operational status of the port, and/or the actual disaster at the time of arrival notification?

5. Does resource availability directly impact the effectiveness of port emergency preparedness and response policies?
6. Do evacuee behaviors impact the effectiveness of port evacuations?

1.4. Thesis Overview

The remainder of this thesis is outlined as follows. In Chapter 2, the literature on evacuation planning and all of the aspects involved are reviewed, which are followed by the reasoning behind the use of dynamic network flow theory and computer-based simulation to illustrate evacuation and port situations. Then the research gap is this area is discussed. In Chapter 3, the problem is defined, which includes the description of the real-world port environment being observed in this research including its attributes, and assumptions made about the system. After that, the modeling approach, the input parameters and the assessment metrics to the effectiveness of port evacuation plans are discussed. Chapter 4 presents the experimental design developed to achieve the abovementioned research objectives and the verification and validation of the simulation model. After that, the results and the observations found from experimental cases are discussed in Chapter 5. Finally, a summary of the study, findings, and closing remarks are presented in Chapter 6.

CHAPTER 2

Literature Review

2.1. Introduction

This chapter is divided into four major sections addressing the following:

1. A synopsis of the importance of evacuation planning in emergency management situations and decision making and the implications it has on the port environment. The planning stages for an emergency evacuation as well as the desirable information to have available is outlined. The implications that these attributes have on the port environment are also discussed.
2. The rationale for using the network flow approach to solve evacuation problems, including an overview of various common network flow techniques and a review of past research which displays the effectiveness of the applications of dynamic network flow theory for evaluating evacuation polices given the approach of a natural disaster.
3. The benefits of using computer-based simulation to model complex systems. Prior research demonstrating these benefits for port systems and in evacuation modeling is also presented.
4. The contribution of this thrust to the research community. The differences between preceding research and the proposed efforts are discussed.

2.2. Synopsis of Evacuation Planning

An evacuation is a vital aspect of today's emergency management systems. Being in a state of war, accidents, and the ever-changing environment increases the chances of an evacuation being needed for a variety of structures and systems. These systems can include buildings, transportation carriers, and regions. An evacuation is defined as *"the immediate and rapid movement of people away from a danger zone, potential threat area, or the actual occurrence of some type of disaster or hazard, preferably in an ordered fashion"* (Diversified Emergency Management Associates, 2009). This idea of rapid movement to an area of safety is applicable not only in small situations such as the evacuation of a building due to a bomb threat or fire, but also to large scale situations. The evacuation of a city district because of a flood or viral outbreak, bombardment or terrorist attack, or an approaching hurricane and other natural disasters are all larger emergency states where the concept of evacuation may prove useful. The focus of this research is the evacuation of ports due to an approaching hurricane.

Emergency evacuation plans are developed to ensure that the highest level of preparedness is possible and ensure the safest and most efficient evacuation time of all expected occupants from a structure, city, or region if a disaster occurs. Proper planning will implement an all-hazards approach so that plans can be reused for multiple hazards. As defined by Tjandra (2001) there is some information that is ideal to have available during the planning of an evacuation that will enable this all-hazard approach. This information includes the type of system defined by its layout or geographical information and familiarity, an estimation of how the occupants will behave and respond under a panicked and stressed situation, the distribution and differences among occupants include age, gender, and disabilities, source and location of the hazard, hazard propagation speed or characteristics and factors affecting it, safe destinations, the availability of emergency services and personnel, and an analysis of the evacuee's movement distribution to determine the amount of time it will take to evacuate, the egress time. These attributes are present apart from the environment or threat nature and in the progression from one stage to the next in planning for an emergency evacuation related directly to port situations and the policies and procedures needed to move vessels into and out of the infrastructure given an approaching disaster.

The abovementioned attributes of evacuation planning are relevant to the port environment, and thus the Port of Houston, in that there are a number of variations that may impact the actual planning process. Safe zones can be considered facility grounds or offshore depending on scheduling and preferences, ship capacity, size and cargo type can all vary evacuation travel times, the availability of resources and equipment, ship position in the system upon evacuation notification, as well as evacuation policies and procedures set by port officials are all important factors that in an ideal world would be known in advance to properly plan for an evacuation. In order to guide the planning of the evacuation process and ensure that a proper goal is established, when information is not readily available benchmark times of various hazards and conditions are developed through the use of best practices, regulations, and various modeling tools including network flow and simulation.

2.3. Rationale for Dynamic Network Flow Modeling Theory Integration

In its simplest form, the idea behind a network flow problem is *"to determine the best method of getting a unit from its initial point, generally called the source node, to a given destination, referred to as the sink or safe node"* (Hamacher and Tjandra, 2001). Depending on the type of system being represented, the journey from source to sink consists of flow conservation nodes that mark various points within the system as well as the arcs connecting them which determine flow direction. The complexity of the problem is influenced by a number of variables including but not limited to the number of units initially in the system, node capacities, arc capacities, travel time from node to node, travel costs, and unit behavior.

In modeling evacuation problems, Tanatmis (2010) used an example of a building evacuation to show that while static networks are partially effective in macroscopic models where units have common characteristics, in real-life evacuation situations changes in time and capacity are major considerations of which static networks cannot accommodate. He explained that dynamic network models introduce the copying of nodes and enable the use of time horizons creating an overall objective of minimizing the time needed to evacuate a building, defined as the shortest path problem, or maximizing the number of units which can be evacuated in a given number of periods, maximum flow problem. This idea of node replication is to provide multiple versions of the same node that evacuees can be evacuated from at different points in time during the evacuation. This relates to port evacuations in that the objective is to safely evacuate as many ships as possible, if not all of them, over a given time period.

A few studies used the dynamic network flow approach to evaluate or optimize emergency evacuation plans (Yamada, 1996; Lim, Baharnemati, Zangench, and Parsaei, 2009). Yamada (1996) formulated a model that evaluated the effectiveness of a current city emergency evacuation plan with two network flow optimization methods. Just as in the United States, Japanese cities are required to have emergency evacuation plans under the country's National Disaster Prevention and Relief Law in preparation for a major disaster. The plan requires that there be pre-determined safe zones and residents be pre-allocated to one of forty relief areas based on their residential area, which total three-hundred and five. Yamada proposed that resident assignments be conducted more effectively by modeling the problem first as a shortest path problem, without capacity constraints, and then as a minimum cost flow problem, capacitated, by setting the safe zones and residential areas as nodes and the roads between them as arcs.

Yamada's models proved the value of utilizing network flow theory in evaluating current and proposed evacuation policies. Compared to the current policy, the policy proposed by the shortest path model reduced the travel distance during evacuation by 120 meters with a maximum distance of 1.5 kilometers from the initial residential area. The standard deviation for this travel distance as well as the number of evacuees allocated to each place of refuge was also smaller using this model implying an evacuation plan with more evenly distributed travelling distances. When using the minimum cost network flow model, including the constraint that the flow out of one residential area node cannot be greater than the capacity of the destination safe zone node, the travel distance during an evacuation was found to be higher than the current policy, making it less beneficial.

However, there was a more uniform distribution of residents across refuge areas which can be beneficial from a commodity distribution point of view.

Short-notice disasters are those that allow decision makers 24-72 hours to determine the best possible method of evacuation. With hurricanes fitting into this category, Lim, Baharnemati, Zangench, and Parsaei (2009) also developed a network flow based optimization strategy to determine the evacuation route, flow, and schedule of a metropolitan area given the circumstances. They discovered that during the evacuation of Houston prior to hurricane Rita, the two major issues were that evacuees were not properly educated on how and when to evacuate from the area and the demand of those stranded in traffic congestion was not anticipated. The authors started off considering all types of models for this type of problem - static and dynamic network models, traffic assignment models, and simulation. They still remained aware that most evacuation models belong to the dynamic network family. They developed a dynamic network model by incorporating constant flow paths with time dependant variable evacuation flow rates, a time horizon, forming assumptions such as not considering individual human behaviors, constant and known hurricane travel, constant transit times from one node to the next, and establishing evacuation regions. They ultimately modeled their problem as multi-commodity network flow problem to determine the optimal evacuation route, schedule for each network commodity, and the evacuation paths of a node.

For simplification purposes, the authors created a heuristic algorithm which they tested on nine randomly generated scenarios varying in number of nodes and number of evacuees. They utilized Dijkstra's algorithm which found the shortest routes from the source node to any other node in the network and Ford-Fulkerson algorithm to determine the maximum number of evacuees that can travel through the shortest path. They found that both optimization model and heuristic approach provided similar solutions in that 100% evacuation was possible in the first eight cases but the time required to develop a solution differed. The heuristic approach solved each problem within seconds while the optimization method was unable to provide a solution for the largest situation after 12 hours.

2.4. Rationale for Computer-Based Simulation Modeling

Computer-based simulation is *"a scientific methodology used to investigate or evaluate a complex environment by constructing a running model of a real system"* (Hassan, 1993). This system "duplication" strategy enables observers to study the behavior of a system and the interactions among its components without disrupting its real environment. This means that simulations allow for parameters to be changed selectively and the implementation and consideration of alternatives without endangering lives or the environment a system actually exists in. When evaluating and improving comprehensive environments, simulations can be the perfect management decision support tool. This modeling technique also results in *"increased understanding of mechanisms in the studied process, predict system behavior in different situations, enable the design and evaluation of systems, estimate process variables that are not directly measureable, set sensitivity to system parameters, optimize system behavior, enable efficient fault diagnosis, and aid in achieving safe and inexpensive operator training"*

(Hassan, 1993). All of these could be the benefit of using simulation to evaluate a port environment under various conditions including those aligned with the purpose of this research. Those conditions include normal operations, operations during predictable disasters, evacuation policies, shutdown, and damages, all of which may alter the port environment. The complexity and large amount of interrelated variables involved in a port situation make analysis of the systems behavior difficult without the help of computer-based simulation. This research aims to use discrete-event simulation to evaluate port operation activities in respect to evacuation planning policies during the presence of a predictable disaster.

The following studieswere reviewed to demonstrate the use of relevant computer-based simulation models. They are broken into two groups, port environments and evacuations and emergency preparedness situations.

Port Related Simulation Studies

- El Sheikh, Harding, and Balmer(1987)
- Kia, Shayan, and Ghotb (2002)
- Ottjes, Veeke, Duinkerken, Rijsenrij, and Lodewijks (2006)

Evacuation and Emergency Preparedness Related Simulation Studies

- Pidd, Silva, and Eglese (1996)
- Hamacher and Tjandra (2001)
- Tovia (2007)
- Chen and Zahn (2008)

2.4.1. Applications of Simulation in the Analysis & Evaluation of Port Operations

A port simulation model is "*a facility used by port management for determining the effects of changes in throughput, and various operational, technological and investment options and, thus, to assist in the decision making process"* (Wadhwa, 1990). El Sheikh, Harding, and Balmer (1987) studied a third-world port environment where the number of berths required was expected to increase in a few years. Due to the real-world nature of the study a microcomputer-based simulation was used to aid in the planning of this augment. This allowed for the analysis of ship arrival and service times, cargo types, equipment requirements, and other restrictions considered in the model. To create the simulation model, an activity cycle diagram was utilized to represent the problem and was centered on only two entities, ships and berths. The diagram showed that ships arrive at time intervals from the "queue of the world" where they then join a queue and wait to be allocated within the port at a berth. After being serviced, the ship rejoins the "world queue" of ships. During this the berths were either engaged in service activity or queuing in an idle state. This diagram played a significant role in illustrating the relationship between the required ship berthing days for service and the expected ship waiting time.

To evaluate the simulation model, three cases were developed to involving various handling rates for each commodity type either imports or exports. These cases were tested against historical data to determine if the waiting-time experienced by ships in queue satisfied a pre-determined acceptable level of waiting-time. In this study, the simulation model aided in evaluating if new handling practices were adopted and new facilities were constructed to reduce ship waiting-time, the projected increase in cargo traffic could be handled by the port.

In the research conducted by Kia, Shayan, and Ghotb (2002), computer-simulation was used to evaluate port performance, specifically a container terminal, by comparing current and proposed operational processes. The study recognized that the growth of containerized shipping will have an effect on the capability of ports as well as the economy. Having a thorough understanding of the most important elements of a port system such as ship maneuvering, arrival rate, berth utilization, crane allocation, ship service time, and stacking area activity were stated as being essential to port capacity computation. This sophistication proves the benefit of simulation to model complex cargo handling operations. A port capacity simulation model was developed where capacity, stacking, and container retrieval are the bottlenecks. The researchers proposed that train usage for inland transportation be increased to reduce the amount of time containers spend waiting in the terminal for truck pickup and the size of the stacking area to be reduced by 50%. After investigating each system over a 12 month period and setting a number of system parameters, it was demonstrated that simulation was effective in showing that the proposed method would reduce the overall ship time spent at the berth by 8%, saving approximately $2.8 million annually.

Ottjes, Veeke, Duinkerken, Rijsenrij, and Lodewijks (2006) developed a simulation model of a multi-terminal container handling system by combining three basic functions: transport for transporting containers, transfer for transshipping containers, and stacking for storing containers. Similarly to Kia et al. (2002), the researchers recognized the rapid growth of the containerized shipping industry and its important role in supply chains. This identified the motivation behind the goal of the study to evaluate a number of conceptual multi-terminal designs for an additional future terminal with existing terminals at a port. Automatic guided vehicles, inter-terminal capacity, sea berth lengths, stacking capacity, safety measures and simulation reusability were all considerations. To model the system they used a technique called the "process interaction method" which consists of identifying the system elements and describing the sequence of actions for each one. Using realistic configuration, container flow, ship, dwell time, and landside flow data from the Port of Rotterdam, Ottjes et al. (2006), were able to develop a simulation model to represent current and conceptual designs. After running for a 17 week experimentation period, the results were used to compare their current terminal configuration with expansion configuration in order to make proper developmental recommendations. The goal of the study was to determine capacity, equipment, and flow requirements to accommodate expected containerized shipping industry growth and its impact on ports. This study shows that comparing current and proposed methodology is possible using computer-based simulation.

2.4.2. Applications of Simulation in Evacuation Planning & Preparedness

In the development of the Spatial Decision Support System (SDSS) prototype known as Configurable Emergency Management and Planning System (CEMPS), Pidd, Silva, and Eglese (1996) identified a number of approaches to mitigate disaster risks including safer designs, isolation of hazardous structures, and producing well tested plans of evacuation. The research aimed to create a tool that could be used by emergency management planners in developing contingency plans from evacuation areas if necessary but not as a real-time aid. The tool utilized Geospatial Information System (GIS) to define the environment and an evacuation population along with a specially designed simulation model that would determine the appropriate evacuation method for an at-risk population into a safe zone. The authors evaluated SDSS from both static and dynamic modeling perspectives where the later was the basis of CEMPS. Integrating CEMPS with simulation would enable an emergency planner to determine how long an evacuation might take given certain assumptions.

Pidd et al. (1996) also addressed three approaches to simulation modeling including micro-simulators, the approach taken by CEMPS where the detailed movement of individual entities is tracked, macro-simulators that do not incorporate behavioral information and are based on fluid flow networks, and meso-simulators which are a combination of the two by tracking the behaviors of groups of entities. This combination was used to evaluate the evacuation of vehicles on road networks from an urban area. The prototype, while still in developmental and improvement stages at the time of the study, was an additional representation of the advantages that simulation can bring to representing complex environments and evacuation planning.

Not only did Hamacher and Tjandra (2001) address macroscopic approaches to evacuation problem modeling, they also considered microscopic modeling techniques. In general, these two approaches emphasize the estimation of egress time but under different circumstances. Macroscopic models are mainly used to establish lower bounds for evacuation times, are generally used along with optimization, individual behavior during an emergency situation was not considered and treated as a homogenous group, and travel time does not have to be constant, being either discrete or continuous. The study discussed the basic macroscopic approaches including minimum cost dynamic flow, maximum dynamic flow, universal maximum flow, quickest path and quickest flow. These methods are also briefly mentioned by Pidd et al. (1996).

Both studies explained that the major difference between macroscopic and microscopic models is that microscopic models are concerned with individual evacuee's characteristics or behaviors and the interaction among evacuees that may or may not influence their movement. This coincides with a port environment in that given an evacuation situation and the allowances set within the structure of hurricane evacuation plans, ship owners are able to make decisions on whether to remain at the port throughout the hurricane, continue with operations and then leave later, or leave immediately. They also have characteristics such as size and the amount of cargo being carried that can influence the amount of time they spend in the system. Microscopic models are useful in the creation of upper bounds in evacuation planning, are better used with simulation tools due to the large amounts of data that is normally involved, and can also incorporate probabilities. To model the evacuee's movement, cellular automation was also discussed.

As a result of recent natural disasters, hurricane Katrina, earthquakes in Haiti, and tsunamis in India and Hawaii and the affect that they have had on the world’s economic state, it has become apparent the threat the present and that there is a need to evaluate current emergency management systems. To meet this need, Tovia (2007) developed an emergency response model (ERM) that evaluated response capabilities but also analyzed the logistical challenges that may be imminent given the onset of a natural disaster. Tovia identified a correlation between corporate logistics and those of emergency planning in the goal of getting the right item in the right place at the right time and proclaimed that successful corporate practices have yet to be used in emergency situations. Particularly with hurricane Katrina, Tovia found that poor logistics and policies were the foundation for the deficits created by the natural disaster. In his research he found that while simulation and optimization methods had been used to maximize evacuation throughput and minimize egress time, very little had been done for incorporating operating policies, behavioral responses, or shelter and transportation capacities. Tovia's aim was to develop an ERM that would incorporate all of these aspects and be able to assess the logistics required to evacuate a population with an approaching hurricane.

Using the current operating policies of the city of New Orleans and historical data from the National Hurricane Center (2009) including number of hurricanes per year, months of hurricane landfalls, categories of hurricane landfalls, population, how most people responded when a hurricane took place, number of shelters, and number of transportation buses, Tovia created a simulation model that randomly generated hurricanes and based on the characteristics for the storm initiated and executed the evacuation process and policies. Based on his results he found that the current transportation resources for evacuating the population out of the threat zone did not have the capacity to accommodate such an event. Tovia showed that while obtaining assistance from school transportation systems did reduces the amount of the population not transported out of danger, it increased the amount of people that would go unsheltered.

This implied that Louisiana shelter destinations did not have enough capacity to satisfy demand either. This study demonstrated that simulation and optimization can have on policy evaluation and if utilized can better prepare emergency management systems for natural disasters.

Chen and Zahn (2008) compared the effectiveness of two residential evacuation techniques given different disaster scenarios, simultaneously where all residents were encouraged to evacuate at the same time and staged where the affected area was divided into different zones and the residents in each of those zones are organized to evacuate the area sequentially. To do this, they used agent-based modeling to develop a simulation that would observe the overall flow of an evacuation on multiple road network structures. Agent-based modeling decomposes a complex system into units called agents that enables the behavior of individual interacts within a dynamic system to be captured at a micro level. Just as Hamacher and Tjandra (2001), the researchers believed that individual behaviors have impacts on the effectiveness of an evacuation plan and that simulation is the best method for demonstrating this type of system.

Chen and Zahn (2008) used a simulation model to compare three road network types typically found in existing urban areas, grid, ring, and a real residential road networks. Each network was tested against various developed scenarios including different evacuation strategies, location at the time of evacuation, population density, and vehicle behavior given time intervals. Their experimental results showed that while there was no clear best evacuation strategy across different road networks, the performance of each depended on the population density.

2.5. Research Contribution

It is clear that prior research efforts are in favor of using both simulation and networks models in evacuation planning and management for natural disasters. All of the research based on the simulation of evacuations, demonstrated the advantages of using computer-based simulation to model varying complex environments. Tovia (2007) used a real life situation, hurricane Katrina in Louisiana, to evaluate the effectiveness of current evacuation policies and procedures. Pidd et al. (1996) and Chen and Zahn (2008) both modeled the evacuation of vehicles on road networks in an urban area, while Hamacher and Tjandra (2001) studied building evacuations. They all compared existing and/or proposed evacuation methods and are also established using network flow approach. Each of these cases is equally cohesive in that none of them illustrate the evacuation of a port facility. On the other hand, the studies that did simulate port operations, El Sheikh et al. (1987), Kia et al. (2002), and Ottjes et al. (2006), whether their main objective was to display the impacts of expansion or to better understand the capacity of a port system, did not study the evacuation of these infrastructures. This research proposed will bridge this gap.

When considering previously conducted explorations of dynamic network modeling to solve evacuation problems, Yamada (1996) used a minimum cost flow model to evaluate planning policies. Lim et al. (2009) developed a multi-commodity network flow model to determine optimal evacuation flow, route and schedule. Both studies approached each as static processes resulting in 100% unit evacuation, but neither study considered a decrease in node capacity in relation to periods within the time horizon. This is a characteristic of port evacuation methods given the location of an approaching hurricane. Although it would be easier to model a port evacuation with constant traits, it would not accurately represent it. They also did not consider the behavioral attributes and activities of each unit, which are also present in a port environment, and how they can create variable evacuation times that can influence the entire evacuation process. While the study conducted by Lim et al. (2009) did introduce the concept of variable evacuation flow rates, due to difficulty level, researchers settled for a constant flow rate.

To account for all aspects, this research proposes to evaluate the effectiveness of predictable natural disaster evacuation preparedness and response plans by integrating dynamic network flow theory with computer-based simulation model of port evacuations. The model will address the previously stated research objectives for effectiveness determination, incorporating a real-life disaster scenario and ultimately, provide a universal approach to port emergency evacuation plan appraisal.

CHAPTER 3

Methodology

3.1. Problem Description

3.1.1. Discussion of Port Environments

A port is *"a complex system containing several entities with interfering attributes"* (Hassan, 1993). These entities include physical items such as port space, berths, channels, warehouses, equipment, ships, cargoes, manpower and methods of transportation; cost and revenue; and other port operation influencing entities such as environment, security, planning, communication, policies and regulations, and operating methods. Figures 3.1 through 3.3 display the complexity of port environments including the relationships between entities and their attributes.

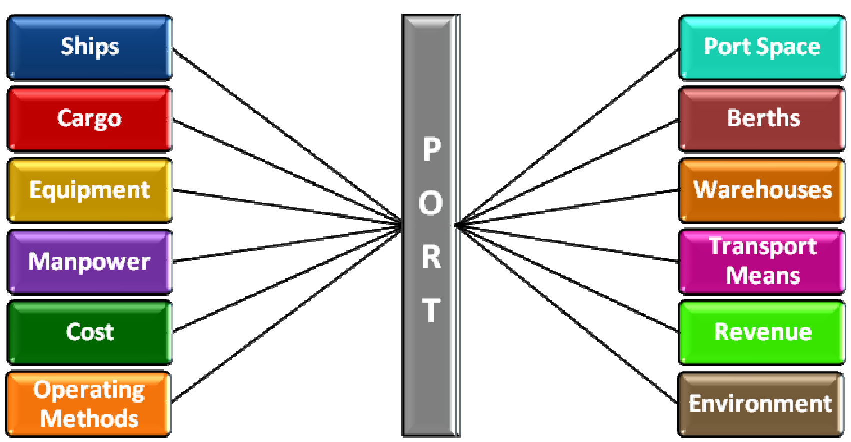

Figure 3.1. Major entities of port systems *(Hassan, 1993)*

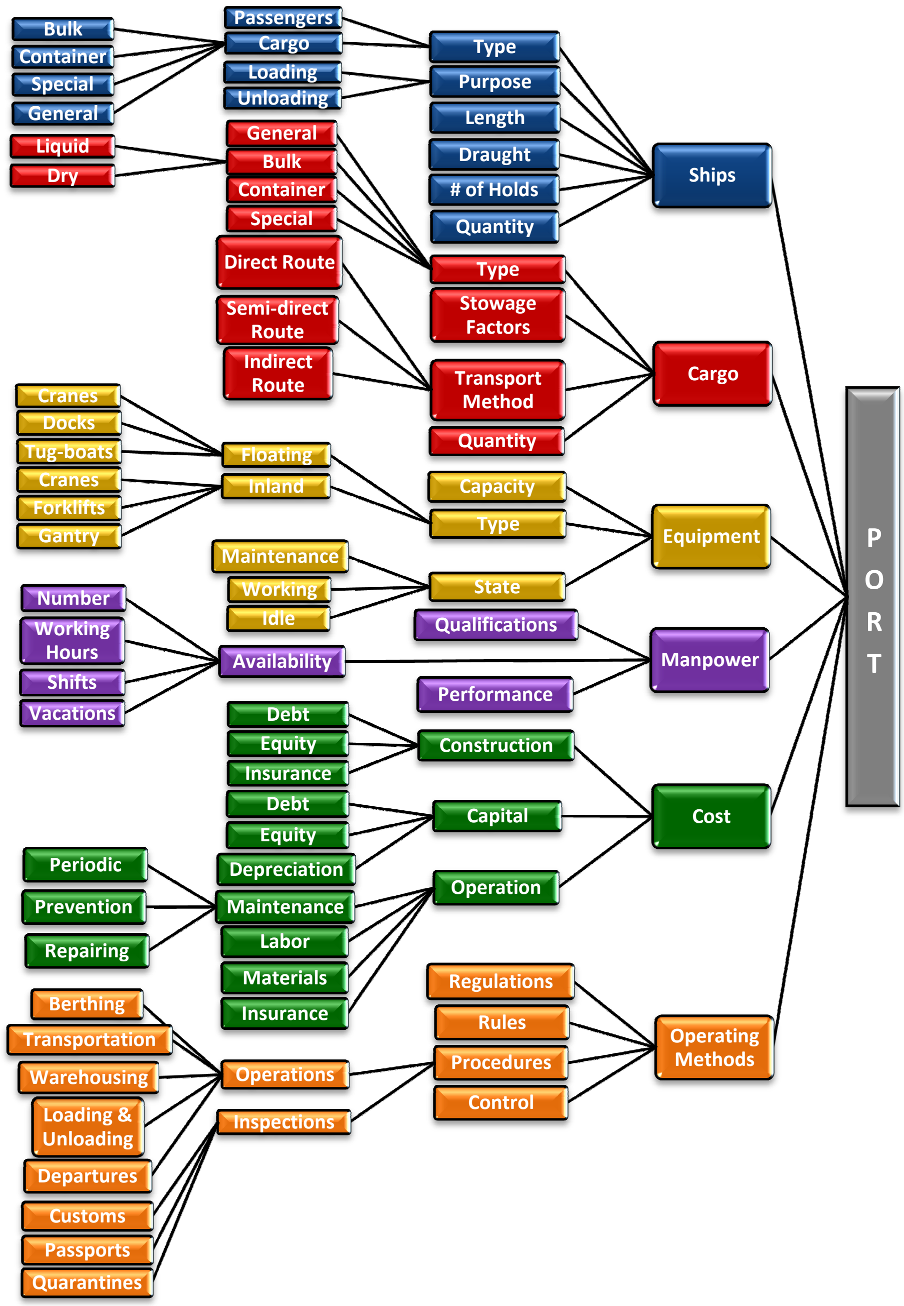

Figure 3.2. Attributes of port systems *(Hassan, 1993)*

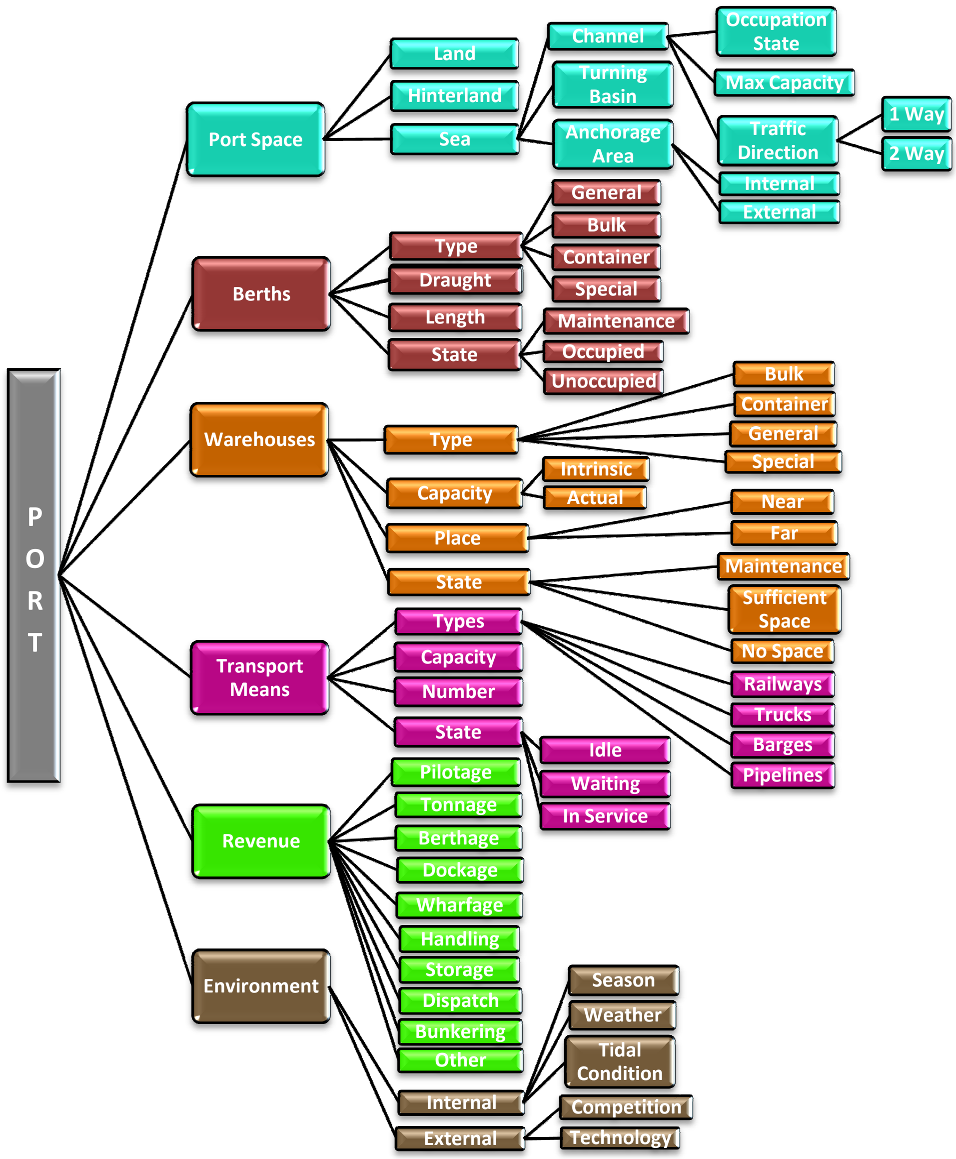

Figure 3.3. Additional attributes of port systems *(Hassan, 1993)*

Port operations, as defined by Hassan (1993), can be divided into four major operational categories; shipping operations, cargo handling operations, warehouse operations, and transport operations. First, ship operations involve the arrival of ships to the outer boundary of the port as scheduled where they can either enter the port channel to get berthed or join the channel queue, depending on the state and capacity of the port in question. Once berthed, the second operational phase, cargo handling begins. This involves preparing ships for unloading cargo as well as the assignment of cranes. Ship cargo, which consists of liquid or dry bulk, general cargo, and containers, are then unloaded from the ships. The initial operational category, shipping, can end here following ship servicing, de-berthing, traveling back through the channel, and lastly exiting the port if no cargo is to be loaded on the ship.

The next operational category entered depends on the planned routing of the unloaded cargo. If routed indirectly, the third category, warehousing operations begin and cargo is transported to transit sheds, warehouses, and yards via fork-lifts, trucks, etc. It is then assessed and stowed until ready to be picked up for in-land delivery. If routed directly, or once the cargo has been stored and is ready to be collected, the fourth and final port operational phase, transport operations goes into effect. This involves the loading and moving of cargo either from the warehousing area or directly from ships to their final destinations. These transport methods include pipelines, railways, highways or waterways depending on the port and the needs of the cargo. Figure 3.4 displays Hassan's arrangement of these categories, defining port process flow.

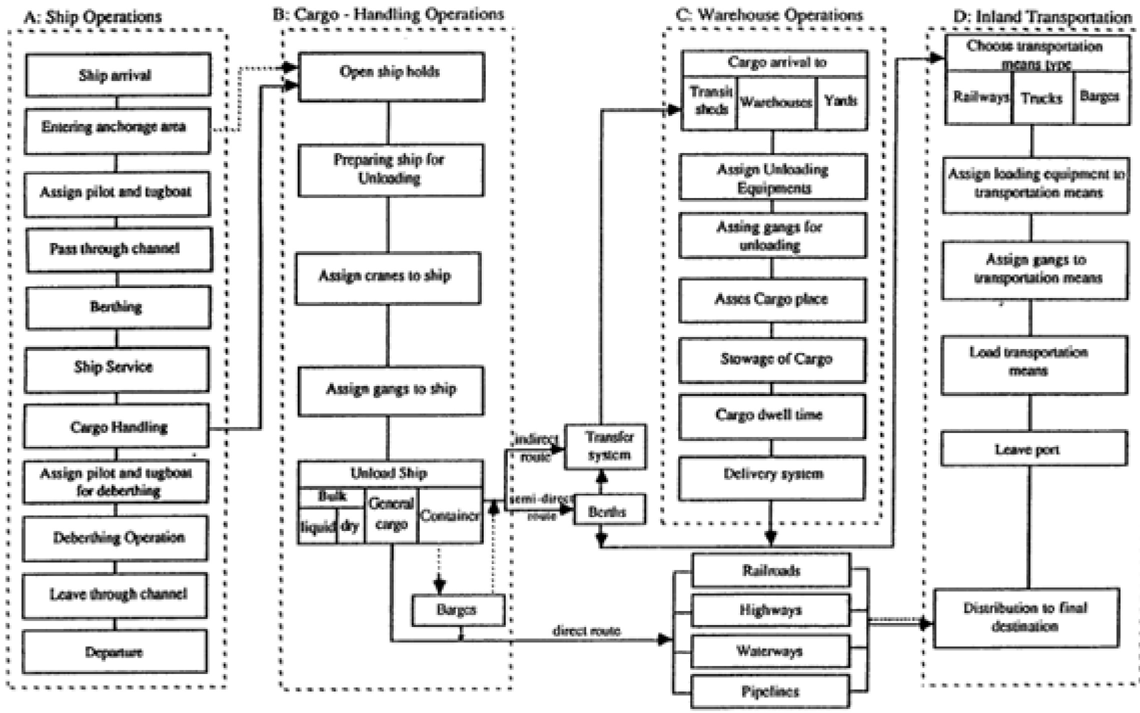

Figure 3.4. The four main categories of port operations *(Hassan, 1993)*

3.1.2. The Port of Houston

There are over one-hundred and sixty ports solely in the United States. For the purposes of this study, the Port of Houston is used to illustrate a real-life representation of the abovementioned operation activities. A key economic infrastructure and a world center of waterborne commerce, the Port of Houston is a 25-mile long complex of public and over one hundred and fifty private facilities residing in the Gulf of Mexico. Due to its size and limited access to private facility data, this study only considers two terminals within the complex, Barbours Cut and Bayport, which are both container handling terminals located at the mouth of the port channel. After these two terminals are effectively modeled, incorporation of the remaining public terminals will be considered. Specific details about each terminal studied will be discussed next.

Barbours Cut Container Terminal

The largest and most modern intermodal facility on the U.S. Gulf coast, Barbours Cut was designed with vessel productivity in mind. Opened in 1977, it was the first port in Texas to handle standardized cargo containers. Built at a cost of $53 million, the terminal reduced the travel time from the Gulf by three hours making the port more appealing to container shippers. Figure 3.5 displays the layout of the container terminal.

Figure 3.5. Barbours Cut container terminal *(POHA, 2009)*

The terminal has the following characteristics:

1. There are six 1000 feet long vessel unloading and loading berths.
2. It has a channel depth of 40 feet.
3. There are thirteen wharf cranes used for container handling operations.
4. The equipment utilized for inter-port operations include:
    a. Eighteen 40-ton yard cranes;
    b. Twenty-two 50-ton yard cranes;
    c. Six 42-ton load handling machines;
    d. Thirty-three heavy duty yard tractors;
    e. And One hundred and twenty-five yard chassis.
5. The facility has approximately 250 acres of storage and marshalling space that accommodates:
    a. More than 24,500 Twenty-foot Equivalent Units (TEUs);
    b. A refrigerated food warehouse;
    c. Three transit sheds;
    d. And 44 acres of roll-on/roll-off (RO/RO) marshalling area.
6. Access to all major highways with points of entry and twenty-six truck lanes utilized by over 105 trucking lines.
7. Access to two major rail lines.
8. The terminal gates operate from 7AM to 5PM, Monday thru Friday.
9. Additional components including:
    a. A RO/RO platform;

b. A U-shaped LASH dock for specialized container ships carrying their own cranes;
c. A cruise terminal;
d. And a computerized inventory control system.

Bayport Container Terminal

As mentioned earlier, the containerized shipping industry is growing quite rapidly placing a large amount of stress on ports worldwide trying to meet the increased capability needs. The Port of Houston is not impervious to the affects of this escalation. In 2007, Barbours Cut handled more than one million containers as a result of demand growth, pushing the terminal beyond its limits in terms of storage capacity and operational ability (Port of Houston Authority (POHA), 2009). To alleviate this issue the Port Authority began construction on the Bayport container terminal, a $1.2 billion expansion project. Not only is this development expected to improve container shipping operations, it is anticipated to provide economic stimulus, generate over 32,000 jobs for the Houston area, and be environmentally affable. The master blueprint for this container terminal expansion effort can be seen in Figure 3.6. The overall objective of this initiative is to increase the port's container handling capacity substantially.

Once complete, the terminal is expected to have the following structure:

1. Seven container berths for vessel operations.
2. An annual handling capacity of 2.3 million TEUs.
3. Three-hundred and seventy-six acres of container yard.
4. A cruise terminal with three berths for cruise vessels.

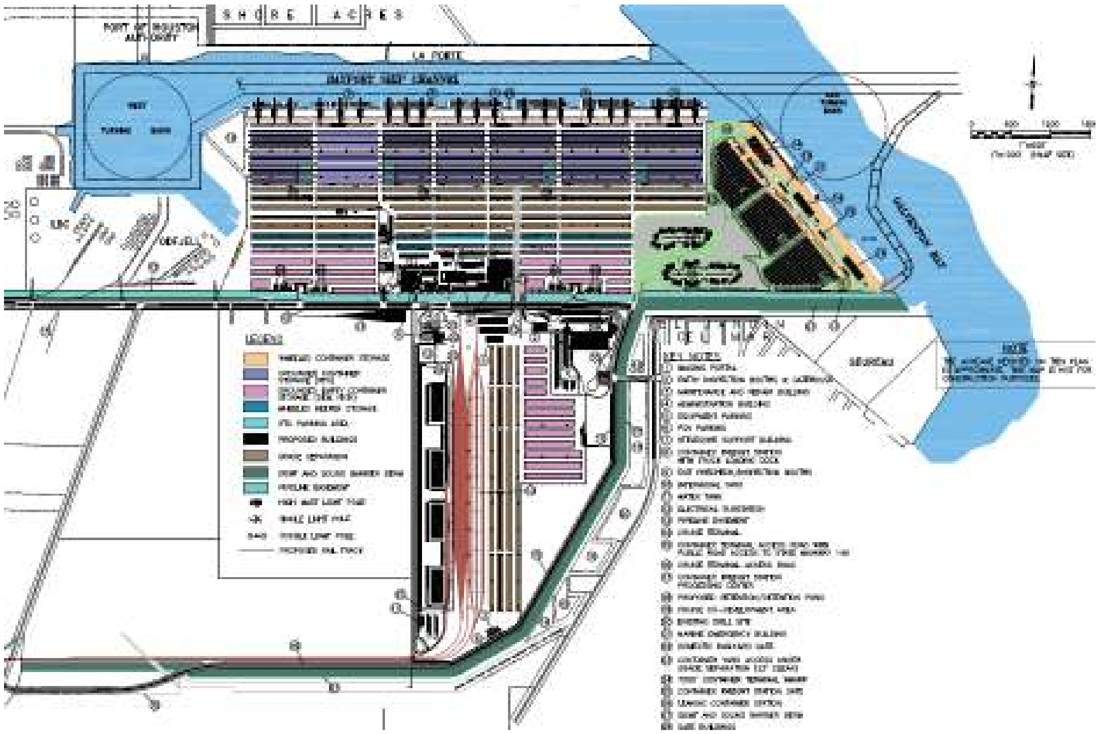

Figure 3.6. Bayport container terminal master plan *(POHA, 2009)*

Even though the terminal is still under development, the first phase of the Bayport terminal has been completed and became operational in January of 2007. This accounts for approximately 30% of the entire expansion project. Figure 3.7 illustrates the section of the Bayport container terminal growth project currently open for operation.

The current specifications of the terminal are as follows:

1. There are three berthing docks currently open for container handling operations.
2. Nine wharf cranes are used for loading and unloading maneuvers.
3. The equipment used to mover cargo with the port include:
    a. Six 50-ton yard cranes;
    b. Twelve 40-ton yard cranes;

4. Access to all major highways
5. The terminal gates operate from 7AM to 5PM, Monday thru Friday.
6. One of the three anticipated docks in the cruise terminal is currently open to vessel traffic.

For the purpose of this study, the current configuration of the system will be used. The completed proposed system specifications will be considered upon model completion to be added for future research.

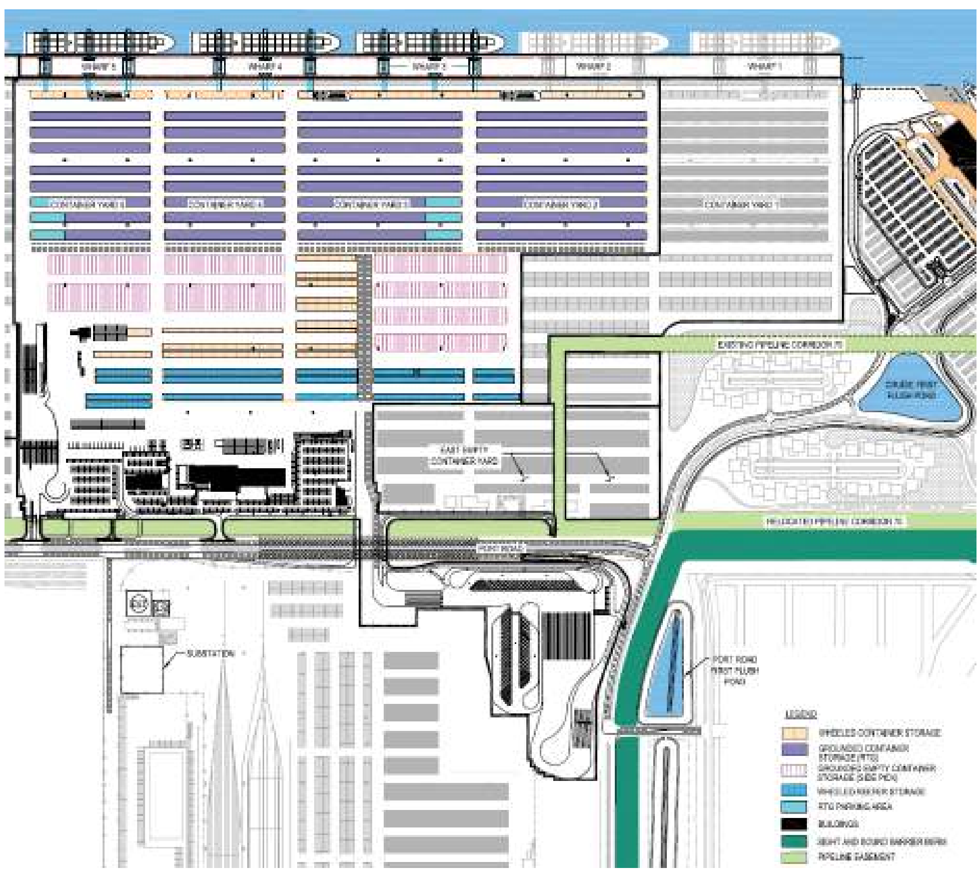

Figure 3.7. Bayport container terminal phase one *(POHA, 2010)*

3.1.3. Current Evacuation Preparedness & Response Plans of the Port of Houston

As required by the Department of Homeland Security (DHS) through the International Ship and Port Facility Security Code (ISPSC), port infrastructures are required to have evacuation policies set in place as a preparedness strategy to emergency situations. Given its geographical location and its level of vulnerability, a major concern of Port of Houston officials is hurricanes, especially during the seasonal alert which is from June 1^{st} to November 30^{th} hence the establishment of the Houston-Galveston Storm Preparedness and Response Plan. Both Barbours Cut and Bayport container terminals have their own terminal specific versions of this plan. Within this plan for the area, three phases of activities surrounding hurricanes are defined - pre-storm preparation, post-storm response and assessment, and recovery and reconstitution of the port. The plan incorporates the location, category, and expected arrival time of an approaching hurricane which influences port responsibilities, actions, operations, and regulations. In this research, only pre-storm preparation phase is studied.

The Coast Guard, through the employment of the Captain of the Port (COTP), has the responsibility of protecting the safety of life including vessel crews, facility personnel and the general public as well as the port environment comprised of marine transportation systems, port infrastructure, harbors, and channels (U. S. Coast Guard (USCG), 2008). Given this, the COTP has the authority to initiate any of the four port conditions depending on the weather and port state. This means he can shut down the port at any point in time contingent upon the storm’s course, speed, and if the probability of risk is high.

Other members or stakeholders of the port community also have responsibilities to carry out. Vessels, which entail masters, owners, and operators, are responsible for the vessel itself and its readiness to withstandhurricane forces regardless of it being underway, anchored, or moored. The waterfront facilities, owners and operators, are held accountable for ensuring the safety of the facility itself, personnel, the surrounding environment, and vessels at their facility. Ship agents are the liaison between the Coast Guard and the vessels remaining in the port at a facility while pilots enable communications between the Coast Guard and vessels transitioning through the port (USCG, 2008). These responsibilities are carried out through a number of port activities and conditions which are subsequently described.

Overall, the plan is structured around the activity phases stated above and identifies four distinct port conditions, "Whiskey", "X Ray", "Yankee", and "Zulu" all of which distributed over a 72 hour time span. The fifth port condition "Recovery" is set once the storm is no longer a threat.

Port Condition Whiskey

The first condition, "Whiskey", is set 72 hours before the expected arrival of hurricane winds. For the next 24 hours, minor preparation activities are performed including labor scheduling, the reporting of vessel intentions, submission of mooring applications if desiring to remain in the port, facility, equipment and road inspections, harbor patrols, securing of equipment not in use, and the restocking of emergency supplies to ensure adequate quantities. Warehouse areas should also begin securing the vicinity by checking containers. Vessel traffic in and out of the port channel is not affected by this condition. Terminals will continue to receive and deliver cargo as long as it is safe to do so. The COTP also designates a safe location as the storm center at during this time.

Port Condition X-Ray

Once the storm is estimated to be 48 hours away, the second condition "X Ray" is set by the COTP. During this stage vessel traffic is not regulated but can be affected by the activities being performed. Shelter seeking and departure preparations are finalized for vessels, regular operations are reduced, scheduling of labor is continued, anticipation of increased vessel departures, identification and verification of local emergency resources, and evaluation of requests to stay in the port are all conducted during this condition. Some other activities in preparation for the storm include making ready all portable devices such as generators, air compressors and radios, the filling of mobile fueling rigs as well as equipment and lubricate them for after storm use, and the start of stacking loaded containers and the de-stacking of unloaded containers into safe positions on the pad.

Port Condition Yankee

"Yankee", the third port condition, is set when the approaching hurricane is expected to be 24 hours away from the port. At this point in time all inbound vessel traffic is prohibited requiring all liners bound for the port to seek an alternate destination or remain at sea and all inter-port movements are monitored. In the next 12 hours safety zones are established, mooring arrangements are finalized, vessel servicing cranes and equipment securing is continued for those not being used, hazardous materials are removed, harbor patrols and inspections are continued, all vehicles are serviced with fuel, and the COTP should be informed of any issues.

Port Condition Zulu

When the hurricane is anticipated to be 12 hours away from landfall the fourth port condition, "Zulu", is set by the COTP. During this state the port is closed to all inbound and outbound vessel traffic and vessel movement within the port is no longer allowed, all cargo and bunker handling operations are ceased, lines are drained, all cargo moving equipment is to be secured or stored in safe locations and all stacking down of containers should be complete. Additionally, electrical power sources are secured, final inspections and vessel inventories are made, all non-essential personnel are excused, the COPT is notified of any dangerous situations, and vessels are remaining in the port are notified to place engines on standby. Just prior to the setting of this condition is the last possible point in time when a decision to evacuate the port can be made.

Port Condition Recovery

After the storm has subsided and is no longer a threat to the area, the "Recovery" port condition is set. During this condition port surveys are conducted to assess the amount of damage experienced to port infrastructure to ensure that waterways are safe for transit. Depending on the outcome of assessments, outbound traffic is re-opened allowing ships to exit the port. Proper evacuation, the level of damage incurred and the progression of response and recovery operations play a role in the amount of time it will take to restore the port back to a normal operating state. A rapid turn-around time due to effective policies is an ultimate goal of port emergency planning and preparedness. Of the port preparedness and response tasks there are some that have a direct impact on the effectiveness of the plan overall. Figure 3.8 displays the critical Port of Houston hurricane preparedness and response plan activities responsible for the effectiveness of the overall plan in relation to their respective condition. The isolation of these tasks is based on their ability to be measured and altered during the evacuation process.

Figure 3.8. Port hurricane preparedness and response conditions and the associated procedures to be conducted

Note: Significant effectiveness tasks are in red.

3.1.4. Port & Evacuation Plan Comparison

To better understand port emergency response policies and procedures as a whole, outside of the Port of Houston, other ports and their evacuation guidelines were analyzed and compared. Evaluating other ports and plans against the Houston-Galveston sector plans aids in determining if there are any variations in evacuation policies given a specific port. When selecting additional ports of study, port geographical region, major waterway, shipping volume, world rank, and operations type were all considerations with the objective of finding a diverse range of port environments, analogous and contrasting to the Port of Houston in one or more of these areas. Port districts and sectors were also taken into account for this observation. Table 3.1 shows the Port of Houston and the ports, districts, and sectors selected for comparison as well as their associated characteristics for the abovementioned considerations.

Table 3.1. Port characteristics comparison matrix

Port Comparison Characteristics						
Port/Marina/ District/Sector	**Location**	**Major Waterway**	**Tonnage (Millions)**	**World Rank**	**Main Port Operations**	**Threat**
Port of Baltimore	Baltimore, MD	Atlantic	39	104th	Cargo	Hurricanes
Port of Houston	Houston, TX	Gulf of Mexico	212	15th	Cargo	Hurricanes
Port of Los Angeles	Los Angeles, CA	Pacific	162	54th	Cargo	Earthquakes
Port of NY & NJ	NY & NJ	Atlantic	153	28th	Various	Hurricanes
Port of Palm Beach	Palm Beach, FL	Atlantic	5.1	N/A	Cargo	Hurricanes
Port of South LA	New Orleans, LA	Gulf of Mexico	224	14th	Cargo	Hurricanes
Port of Townsville	Australia	Coral Sea	10	10th	Cargo	Hurricanes
Port of Wilmington	Wilmington, NC	Atlantic	6	N/A	Cargo	Hurricanes
USCG 8th District	AL, FL, LA, MS & TX	Atlantic/Gulf of Mexico	N/A	N/A	Various	Hurricanes
USCG Boston Sector	Massachusetts	Atlantic	N/A	N/A	Various	Hurricanes & Blizzards
USCG Honolulu Sector	Hawaii	Pacific	N/A	N/A	Various	Hurricanes
USCG Key West Sector	Key West, FL	Atlantic/Gulf of Mexico	N/A	N/A	Various	Hurricanes
USCG San Juan Sector	Puerto Rico & Virgin Island	Atlantic/ Caribbean Sea	N/A	N/A	Various	Hurricanes
USCG Savannah Sector	Georgia	Atlantic	N/A	N/A	Various	Hurricanes
USCG West AK Sector	Alaska	Gulf of Alaska	N/A	N/A	Various	Blizzards
Gangplank Marina	Washington, DC	Atlantic	N/A	N/A	Recreational	Hurricanes

To assess port emergency preparedness planning and response policies and procedures, as they compare to the Port of Houston, another comparison matrix was created, Table 3.2. For this evaluation, the Houston-Galveston Storm Preparedness and Response Plan was used as the point of reference for determining significant plan content. Considerations include stakeholder responsibilities, checklists, "Whisky, Yankee, X-Ray, Zulu" port condition classifications, recovery, time intervals between conditions, the key emergency response plan activities decided upon earlier, disaster categories, and local vulnerable areas, hazards, and damage expectations.

Table 3.2. Port emergency preparedness and response plan comparison matrix

Severe Weather Plan Comparison Characteristics									
Port/Marina/ District/Sector	Latest Revision	Length (Pages)	Stakeholder Tasks	"WXYZ" Conditions	Critical Actions	Time Intervals	Threat Categories	Potential Damages	Recovery
Port of Baltimore	2009	28	Yes	Yes	Yes	Yes	No	No	Yes
Port of Houston	2010	32	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Port of NY & NJ	2008	51	Yes	Yes	Yes	Yes	No*	No	Yes
Port of Palm Beach	2010	15	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Port of South LA	2008	43	No*	Yes	No	Yes	Yes	No	No*
Port of Townsville	2008	10	Yes	No*	Yes	No	No	No	No
Port of Wilmington	2008	44	Yes	Yes	Yes	Yes	Yes	No	Yes
USCG 8th District	2005	86	No*	Yes	No*	Yes	Yes	Yes	Yes
USCG Boston Sector	2008	74	Yes	Yes	Yes	Yes	Yes	Yes	Yes
USCG Honolulu Sector	2007	10	No*	No*	No	Yes	Yes	No	Yes
USCG Key West Sector	2009	130	Yes	Yes	Yes	Yes	Yes	No	Yes
USCG San Juan Sector	2005	17	Yes	Yes	Yes	Yes	No	No	Yes
USCG Savannah Sector	2009	21	Yes	Yes	Yes	Yes	No	Yes	Yes
USCG West AK Sector	2009	4	No*	No	No*	No	No	Yes	No
Gangplank Marina	2008	18	Yes	Yes	Yes	Yes	Yes	Yes	Yes

* The plan contains a similar characteristic but the definition and/or application is different from that of the base severe weather plan.

After investigating various ports and their severe weather plans, the comparison shows that there are some slight differences in the structuring of port emergency response plans. When observing plans hierarchically, district, sector, and then port, the district plans are more extensive and general than the plans created at the sector, port, or marina level. They provide details on responsibilities as they relate to the United States Coast Guard and how they should respond to the smaller entities that district is comprised of. On the other hand, the severe weather documents provided by ports, marinas, and port sectors are a lot more specific in how their emergency policies should be utilized.

Overall, compared to the Houston-Galveston response plan, some diverge in who the plan is designed for, their classification of categories and conditions, stakeholder responsibilities and critical actions, recovery initiation, and/or by a complete omission of any characteristic. While there are variations in the amount of content and level of detail provided, when going from one preparedness plan to the next, the key information needed for the evacuation of a port is virtually equivalent across the board. Decision makers utilize the same set of standard guidelines for hurricane evacuations apart from any factor that may contribute to its effectiveness.

3.2. Emergency Preparedness and Planning Simulation Model

3.2.1. Port Operations Simulation Model

The simulation model is composed of two different but equally important components, port standard operations and hurricane arrival and response. A discrete event simulation model is constructed using Arena® computer-based simulation software. By taking into account the four operational phases and their related activities, established by Hassan (1993), along with terminal specific port information gathered from POHA (2009) we are able to design a model that is parallel to that of the real-life environment. Figure 3.9 displays the process flow diagram for the operational element of the environment which is the foundation for the construction of the simulation model utilized in this research and guides the progression of events from one port activity to the next.The activities that occur within the model are the same for both of the observed terminals with the exception that the overall configuration for each is different given the number of available docks, vessel and truck traffic, hinterland transport practices, and other individual differences that distinguish and justify one terminal from the other.

The simulation model activities, under normal operating conditions, absent of an approaching hurricane are defined as follows:

1. Arrival: Ships, trucks, and trains arrive into the system as single entities at a rate determined from historical average arrival rate data triangularly distributed.
2. Assignment: In assignment, ships wait in a berthing queue where they are given dock and resource assignments within its destination terminal, wait for that berth and resources to become available, and wait for the channel to become vacant for safe travelling through. Trucks enter a queue to be inspected and are assigned an unloading and or loading space in the terminal along with the equipment resource need. Unlike the other two, rail has no destination assignment queue.
3. Unloading: All three transport methods are unloaded, represented by the duplication of those entities now considered containers.

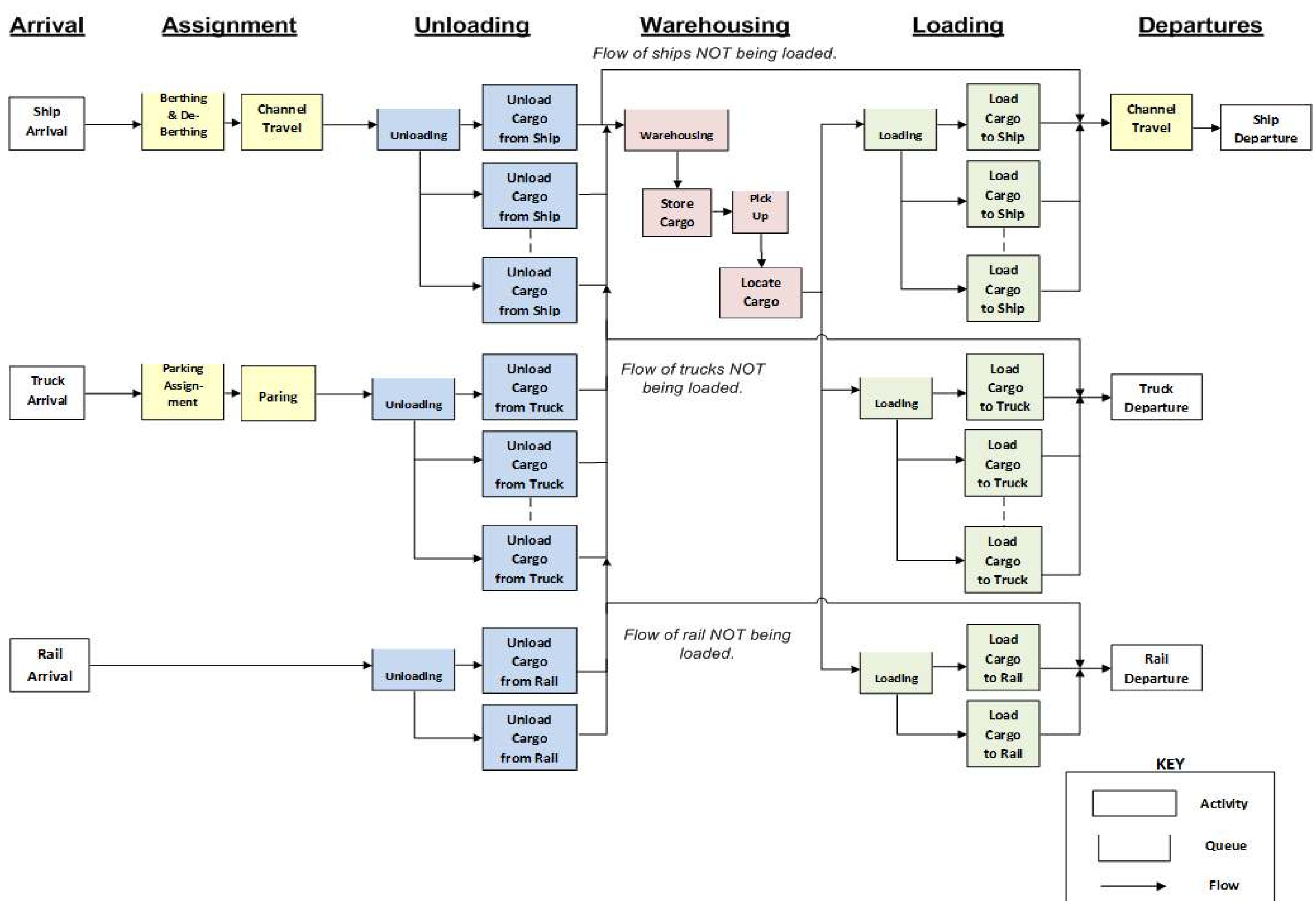

Figure 3.9. Port of Houston container operations and process flow diagram

4. Warehousing: the containers are grouped and stored based on the assignment of pick up date and time attributes, either morning or afternoon. The containers scheduled are removed from storage and out of the system on their designated day and time. Transport method is neglected here.
5. Loading: Unloading and loading operations are a combined process in the model and determined by a triangular distribution of average historical port stay durations.
6. Departure: Once unloading and/or loading operations are complete ships enter a de-berthing queue to wait until the channel is free before they can travel out of the port. Ships exiting the system are given priority over those entering. Both truck and rail are not required to wait to depart from the port and leave as soon as activities are complete

3.2.2. Hurricane Simulation Model

To incorporate a predictable severe weather situation, a hurricane, the model is expanded by simulating the arrival of such an event. This portion of the model behaves following the standard process flow for the evacuation of a port, progressing through the different port conditions. Once a hurricane is randomly created in the simulated environment it initiates the declaration of the first port condition, "Whiskey", implying that the hurricane is 72 hours away from landfall at the port. As the hurricane gets "closer to the port" and the expected time of arrival decreases, the corresponding port conditions are established triggering changes within the normal port operation simulation model based on the critical emergency preparedness activities including reduction in transport arrival rates, decrease in available equipment and resources, inter-port travel restrictions, and other changes that take places given a port evacuation. Once the hurricane leaves, the model is complete and ready for the next evaluation.

The integration of dynamic network flow theories come into play during this hurricane replication portion of the simulation model. As mentioned earlier, during an evacuation due to an approaching hurricane there is a reduction in the capacities of available resources at the port. Again, this has a strong impact on the effectiveness of evacuation policies and procedures. Rather than approach theses capacities as static and constant values, this research aims to consider variable rates of capacity and travel flow during port evacuation. Just as in dynamic network flow problems, the capacities of resources change at different time intervals throughout the entire evacuation process. The flow rate of entities or evacuees from one point in the system to the next, until they are safely out of the environment, varies as well. This incorporation of network flow theories will be of great value and contribution to the research community being that it has not been included in previous research, making it the first attempt of its kind.

3.2.3. Model Inputs

<u>*Terminal Characteristics & Port States*</u>

For the container terminals observed in this research, Barbours Cut and Bayport, the specific characteristics and assumptions about each are represented in Table 3.3. These values are dependent on the state of the port which we have established as excellent (100%), fair (75%), and poor (50%) capability based on terminal features, capacity, and available resources. Excellent represents a port state where all processes and related equipment are fully functioning and available for use. This will also be the state representing the normal or base state. On the opposite end of the spectrum, a poor operational state would imply that something occurred at the port to interrupt normal procedures such as equipment failure, port damage, etc. Lastly, fair, represents the ground between the two.

Table 3.3. Barbours Cut and Bayport terminal states and resource characteristics

Resource		Excellent 100%	Fair 75%	Poor 50%
Barbours Cut Terminal	Docks	6	4.5	3
	Wharf Cranes	13	9.75	6.5
	Yard Cranes	40	30	20
	Storage Space (Acres)	250	187.5	125
	Container Capacity (TEUs)	24,500	18,375	12,250
Bayport Terminal	Docks	3	2.25	1.5
	Wharf Cranes	9	6.75	4.5
	Yard Cranes	18	13.5	9
	Storage Space (Acres)	108	81	54
	Container Capacity (TEUs)	10,500	7,875	5,250
Total	Docks	9	6.75	4.5
	Wharf Cranes	22	16.5	11
	Yard Cranes	58	43.5	29
	Storage Space (Acres)	358	268.5	179
	Container Capacity (TEUs)	35,000	26,250	17,500

Since Bayport terminal is still in developmental stages, the values for storage acres and container capacity are approximated based on 29% of the project being completed, the estimated three hundred and seventy-six container warehouse capacity, two of the seven terminal berths already available for use. In this research, the warehouse space availability is the combined capacity total of both terminals for simplification.

Historical Port Operational Inputs

In order to produce an accurate model for container terminal activities, historical operational data for each container terminal is utilized, obtained from POHA (2009). The collected data enables a functional understanding of each of the earlier defined port activities and their performance during normal operation. They include transport mode average arrival rates per day, time spent in the system, and containers per arrival. In this research we assume that the total time spent in the system accounts for loading, unloading, and ship service. When unloading cargo, containers are assigned a pick up date and time based on the current date and average container warehousing time. For loading and container pick-ups, it is assumed that an average number of containers are scheduled to be picked up in the morning and again in the afternoon. This assumption does not take into account the transport method. The containers scheduled are removed from storage and out of the system on its designated day and time.

Historical Hurricane Considerations

The individual characteristics of a hurricane can impact the effectiveness of emergency preparedness and response plans as well as the potential damages to the port from that storm. These characteristics include the number of hurricanes expected, month of landfall, region of landfall, and hurricane category. Historical data, provided by Blake, Rappaport, and Landsea (2007) and the National Hurricane Center (NHC) (2009), regarding hurricanes that hit the U.S. from 1851 to 2009 aid in determining the probabilities of these hurricane characteristics and their potential to affect the Port of Houston. During those two and a half centuries, there were a total of two hundred and eighty-three tropical storms to strike the U.S. and within that, sixty-three made landfall in Texas. During the hurricane season, the probability of a hurricane making landfall in Texas is approximated and displayed in Figure 3.10. In Figure 3.11, the specific month in which that hurricane will occur is shown with August and September being those months.

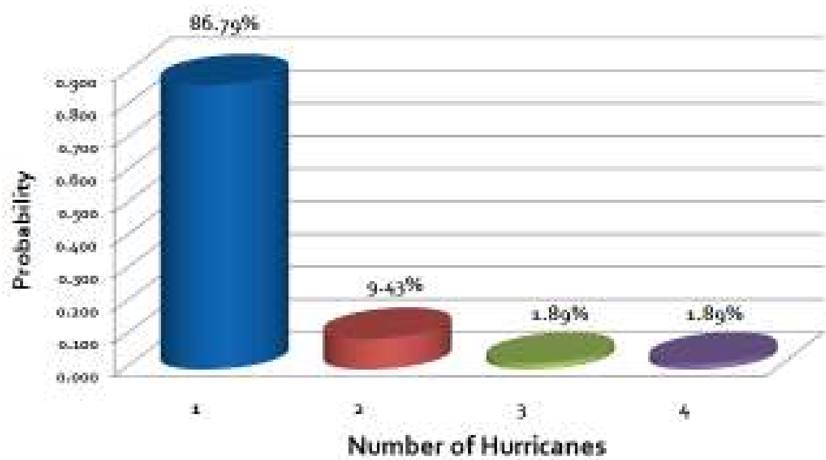

Figure 3.10. Approximated number of hurricane landfalls in Texas

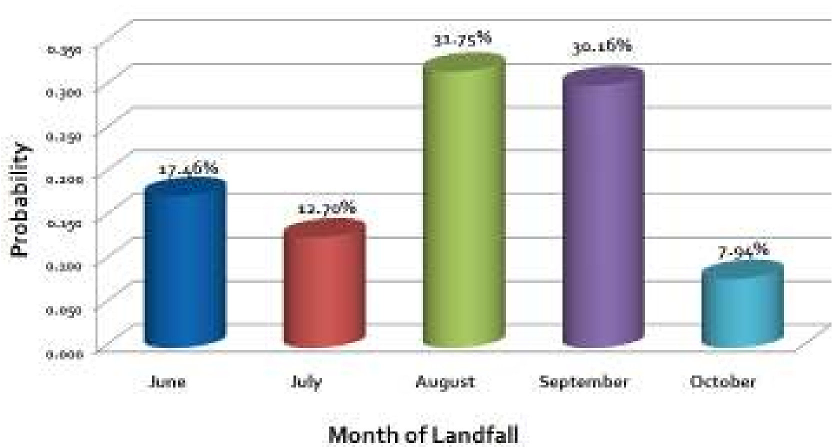

Figure 3.11. Approximated month of hurricane landfall in Texas

The category of an oncoming hurricane has a direct impact on the damage incurred to a port. Hurricane categories range from one to five, one being the lowest or least dangerous and five having the greatest hazard potential. The separation from one to five is based on the sustained winds and imminent surge forecasted for that approaching storm (National Oceanic and Atmospheric Administration (NOAA), 1999). Table 3.4 lists each category and its characteristics including the amount of damage that can be expected for the projected area of landfall. These impact levels will be revisited and utilized in subsequent chapters of this research for experimentation analysis and results.

Table 3.4. Saffir-Simpson scale hurricane categories and impacts

Category	Sustained Winds (MPH)	Storm Surge (Ft Above Normal)	Impact	Description
1	74 - 95	4 - 5	Minimal	Low-lying coastal roads coverd w/ water, minor pier damage, no real damage to bldg structures & some damage to poorly constructed signs
2	96 - 110	6 - 8	Moderate	Considerable pier damage, marinas flooded, some trees blown down, some damage to roofing material, windows, & doors but no damage to building structures.
3	111 - 130	9 - 12	Extensive	Serious flooding along the coast, smaller coastal structures destroyed, larger structures damaged by flying debris & sturctural damge to small residences.
4	131 - 150	13 - 18	Extreme	Major damage to lower floors of structures near the shore, flooding, extensive roof material, door, & window damage & roof failure on many small residences.
5	150 <	18 <	Catostrophic	Shrubs & trees down, considerable roof damage, all signs down, severe window & door damage, roof failure on many residences & industrial bldgs, extensive glass failures, some complete bldg failures, & small bldgs overturned or blown away.

Although the risk of damage is always a possibility with an approaching low or high category hurricane, evacuation plans, policies, and procedures can reduce that potential damage if properly carried out. For this reason, the hurricane month of landfall probability introduced earlier is expanded to include the approximated hurricane category probabilities for those occurrences, in Figure 3.12. Due to its size, Texas is divided into three coastal regions for hurricane landfall classification, north, central, and south. Figure 3.13 displays the approximated probability that a hurricane will make landfall in one of those regions by hurricane category. The Port of Houston falls in the northern region.

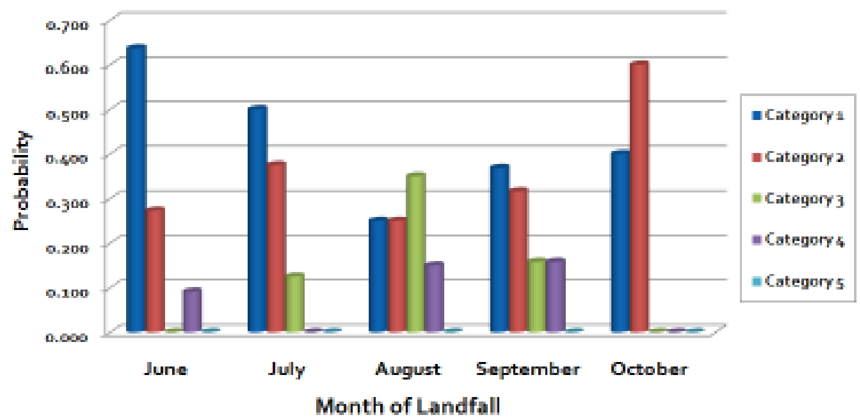

Figure 3.12. Approximated hurricane category by month of landfall in Texas

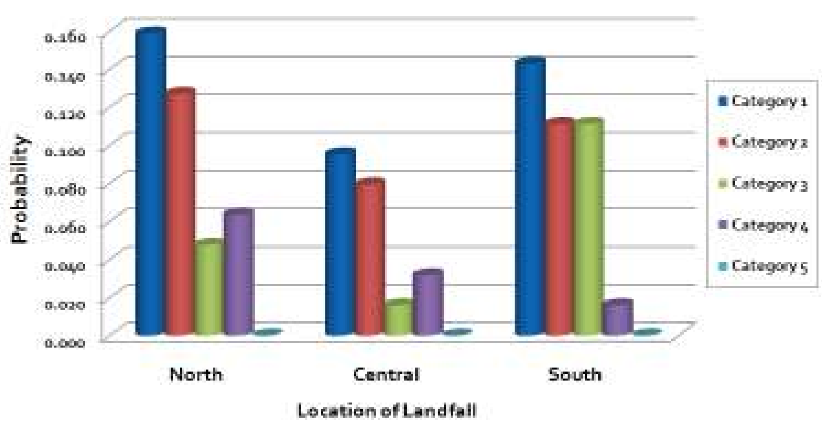

Figure 3.13. Approximated region of hurricane landfall by category in Texas

3.2.4. Evacuation Assumptions

Once a hurricane arrives in the simulation mode, the key actions for emergency preparedness and response come into play. The majority of these acts involve the reduction of available resources and/or completely impeding an act after the initiation of one of the port conditions by the COTP. Table 3.5 reiterates these activities and the conditions in which they take place in the current emergency preparedness and response strategy.

Table 3.5. Emergency preparedness critical tasks and port conditions

Critical Activities By Port Condition				
Task	Whiskey 72 Hrs	X-Ray 48 Hrs	Yankee 24 Hrs	Zulu 12 Hrs
Securing Containers	X	X	X	X
Reduced Operations		X	X	X
Prohibit Inbound Traffic			X	X
Secure Unused Equipment & Cranes			X	X
Prohibit Outbound Traffic				X
Cease All Cargo Operations				X
Secure All Equipment & Cranes				X

During an evacuation of the port, we assume that the emergency preparedness and response plan is carried out in its entirety regardless of the hurricane category and risk. This enables policy evaluation at all levels. We also assume that a reduction in equipment, yard cranes specifically, can account for both the securing of that equipment and utilizing it for container stacking and de-stacking or securing. Also, during this process, vessels have the option to evacuate the port or stay and wait for the storm to pass. Although remaining in the port is an option, it is not held in the highest regard because of the increased risk of damage to the port and the ship if the vessel securing procedures are unable to withstand the gale force winds of the hurricane. While most shippers do decide to leave, it is still a decision that is left up to the shipper, outside of the cut off time, making it an unknown but important factor. For the purposes of this study and to evaluate the impact that evacuee behaviors play on the effectiveness of emergency policies and procedures, the assumption is made that the decision to evacuate the port will be made by 100%, 85%, and 70% of shipping vessels.

3.2.5. Model Outputs

While safety and reducing the potential damage to the port are the main objectives of evacuation plans, port economic loss and productivity decrease should also be considered. Therefore, to evaluate the effectiveness of the port's emergency response policies and procedures, a number of performance outputs are collected by the simulation model. These outputs could be classified into two categories: the overall productivity of the port and the condition of the port at the point of complete shutdown. They aid in determining whether response activities for each emergency response plan are satisfied at the final hour of evacuation and if not, the potential damage associated with not fulfilling them prior to hurricane landfall. Productivity determines port performance during an evacuation, such as number of containers in and out, and the condition of the port at the point of complete shutdown relays information about the state in which the port is during hurricane landfall, such as containers remaining in the port. These categories and their corresponding outputs are as follows:

Port Productivity

- Total arrivals during evacuation: The total number of ship, truck, and rail arrivals after the notification of hurricane approach and the onset of the first hurricane evacuation plan category. This information gives the total number of arrivals allowed into the port during an evacuation and the impact it has on the performance of the port.
- Total departures during evacuation: The total number of ship, truck, and rail departures after the notification of hurricane approach and the onset of the first hurricane evacuation plan category. This information yields the total number of departures allowed out of the port during an evacuation. It gives behavioral information regarding the number of ships that decide to the leave the port during an evacuation to the approaching hurricane.
- Total re-routes: The total number of ships that are not allowed to enter the port after the notification of an approaching hurricane. These vessels are diverted to other ports or are required to wait at sea until the storm has passed and it is safe for ships to enter the port again.
- Total containers in: The total number of containers brought into the port after the notification of an approaching hurricane.
- Total containers out: The total number of containers removed from the port after the notification of an approaching hurricane.

Port Condition at Complete Shutdown

- Number of vessels still in the terminal: The total number of vessels remaining at the terminal after the complete shutdown of the port. This gives information regarding the state of the port after hurricane departure and the risk associated given that port state.
- Resources not secured: The total number of resources not secured after the complete shutdown of the port. This also gives information regarding the state of the port after hurricane departure and the risk associated given that port state.
- Total containers in warehouse: The total number of containers in the warehousing area after the complete shutdown of the port. Since there is some risk associated with stacked containers, secured or not secured, this information shows the potential risk as well as the state of the port after hurricane departure.
- Containers not secured: The total number of containers not secured after the complete shutdown of the port. As the others mentioned above, this information impacts the state of the port after hurricane departure and the associated risk since un-secured containers have a greater chance of affecting the level of potential damage to the port.

3.3. Assessment Metrics

To examine the effectiveness of the evacuation plan under varying conditions, the resiliency of the port during the evacuation process is analyzed. The analysis aids in the appraisal of each individual policy within the severe weather plan. The resilience capability of evacuation procedures depends on the initial state of port resources, the condition of port resources at complete shutdown, and the probability of damage given hurricane category. There are three metrics for the resilience capability of evacuation procedures considered: the expected total damages, the final port state, and the expected monetary losses. The resource outputs of the model (R_{ij}) are used to determine the expected total damages and what will and will not experience damages at the port. Outputs are collected for each of the resources studied (i): wharf cranes, yard cranes, warehouse space, and berths. For each scenario, at the point of complete shutdown each of these resources will have four final states (j): secured, unsecured, unavailable or initially damaged, and unused. Table 3.6 presents the damage probabilities (denoted by H_{cj}) of three levels (i.e., reduced, normal and increased) for the five categories of hurricanes (Pielke, Gratz, Landsea, Collins, Saunders, and Musulin, 2008), where c denotes the category of hurricanes. The four resource states at the point of complete shutdown correspond to the three levels of damage probabilities, which are presented in Table 3.6, too.

Table 3.6. Damage probabilities

	Reduced		Normal	Increased
Category	**Secured**	**Unused**	**Unsecured**	**Unavailable**
1	0.02	0.02	0.12	0.22
2	0.11	0.11	0.21	0.31
3	0.58	0.58	0.68	0.78
4	0.89	0.89	0.99	1.00
5	0.89	0.89	0.99	1.00

Reduced represents the possible damage incurred to port resources if policies are successfully completed and thus experience a 10% reduction in possible damage. Resources that are secured and unused fall into this category. It is assumed that any policies not completed, such as unsecured equipment and vessels remaining at the port, will experience the full impact of the storm and its normal damage potential (Pielke et al, 2008). Increased damage occurs to any resource that is unavailable at the onset of the evacuation. This would be experienced by damaged resources (port states fair and poor) that are not available due to repair or maintenance. These resources have an increased risk of damages, 10% more than normal.

While the initial state of port resources is known, the condition of those resources at the point of complete shutdown could be estimated using the simulation model. Then, the expected total damage of each type of resource for hurricane category *c* (denoted by R^{D}_{ci}) could be determined by

$$R^{D}_{ci} = \sum_{j} H_{cj} R_{ij} \ . \quad (1)$$

The expected total damage of each type of resource for each hurricane category is the main factor used for measure the final port state, which will be discussed shortly. It also aids in determining the amount of undamaged resources for hurricane category *c* (denoted by R^{UD}_{ci}), which is the amount of damage taken from the initial total resource at the start of the simulation (denoted by R^{INT}_{i}) as follows

$$R^{UD}_{ci} = R^{INT}_{i} - R^{D}_{ci} \ . \quad (2)$$

Once the storm has passed, the damages incurred leave port resources in a certain conditional state (denoted by $R^{FIN}{}_{ci}$). The same rating system used for initial port states, excellent, fair, and poor, is used to determine the final port state. However, each final state represents a range presented in Table 3.7.

Table 3.7. Percentage range for each conditional state

State	Percentage Range
Excellent	≥ 87.5
Fair	87.4 - 65.6
Poor	≤ 65.5

The amount of undamaged resources in respect to the initial resource value is used to determine the final state of the resource. The percentage value calculated and where it falls on the rating system determine its classification.

$$R^{FIN}{}_{ci} = R^{UD}{}_{ci} \,/\, R^{INT}{}_{i} \qquad (3)$$

The final state of the port as a whole (denoted by $S^{FIN}{}_{c}$) is determined by taking the average of the final states of the four types of resources. This final port state value is calculated for each hurricane category and initial port state and compared for each experimental scenario and the base case.

$$S^{FIN}{}_{c} = \sum_i R^{FIN}{}_{ci} \,/\, 4 \qquad (4)$$

In the event that a disaster situation occurs resulting in the shutdown of the Port of Houston due to the risk and presence of damages, it is estimated that the associated United States economic impact is a loss of $400 million per day (Shulterbrandt, 2009). Assuming that this is proportional to the state of the port, the expected economic impact in terms of the amount lost per day per hurricane category (denoted by E_c) can be calculated as follows:

$$E_c = \$400{,}000{,}000\,(1 - S^{FIN}{}_c) \qquad (5)$$

The average across all hurricane categories is used to determine the average expected economic impact per day for each initial port state.

To consider the loss of revenue to the Port of Houston during the evacuation (denoted by E^P), tariff information (POHA, 2011) from each of the container terminals is employed. Table 3.8 displays the rates governing each terminal and the average revenue made by the port for each vessel that utilizes its services. This average revenue is calculated by incorporating the average vessel service times, an average of thirty container moves per hour at each of the terminals, the average containers per vessel for each terminal, and the amount of equipment used for servicing. The average revenue per vessel for each container terminal in Table 3.8 is obtained by multiplying the total of these values by its respective port rate. The total number of ships re-routed and early leave ships from Barbours Cut terminal (denoted by RR_{BC}) and Bayport terminal (denoted by RR_{BP}), estimated by the simulation model, along with this total profit per vessel determine the total loss of revenue at the Port of Houston during and evacuation.

$$E^P = \$183{,}959\ RR_{BC} + \$147{,}156\ RR_{BP} \qquad (6)$$

Table 3.8. Average profit per vessel at the Port of Houston

Terminal Rate	Barbours Cut	Bayport
Throughput Charge/Container	$ 97.09	$ 97.09
Wharfage Fee/Container	$ 61.93	$ 61.93
Port Security Fee/Container	$ 3.00	$ 3.00
Wharf Crane Rental/Hour	$ 753.10	$ 753.10
Yard Crane Rental/Hour	$ 43.65	$ 43.65
Average Harbor Fee	$ 413.50	$ 413.50
Berth Cleaning Fee	$ 262.50	$ 262.50
Water Service Fee	$ 46.92	$ 46.92
Average Vessel Service Time (Hours)	28.20	22.54
Average Container Moves/Hour	30.00	30.00
Average # of Containers/Vessel	846.00	676.08
Average # of Wharf Cranes/Vessel	2.00	2.00
Average # of Yard Cranes/Vessel	3.00	3.00
Average Profit/Vessel	**$183,959**	**$147,156**

CHAPTER 4

Design of Experiments

The objective of this research is to evaluate and compare the effectiveness of port emergency response evacuation plans to predictable natural disasters through developing a computer-based simulation model for mitigation preparedness that evaluates policies and conflicting objectives. In our simulation model, the input parameters, critical actions, and environmental characteristics are the considered factors in investigating the effectiveness of port emergency preparedness response policies and procedures. We are concerned with answering the following:

1. What are the imperative emergency response policies and procedures to be performed during a predictable disaster?
2. When should these key emergency response policies and procedures be initiated?
3. Are there differences in emergency preparedness and response plans depending on port location, size, shipping volume, and/or potential disaster type?
4. Should evacuation policies and procedures be standard, apart from the port itself and the attributes of the predictable disaster, or vary based on port characteristics, the operational status of the port, and/or the actual disaster at the time of arrival notification?
5. Does resource availability directly impact the effectiveness of port emergency preparedness and response policies?
6. Do evacuee behaviors impact the effectiveness of port evacuations?

4.1. Base Case

The parameters for the base model represent normal port operating conditions including inputs for arrival requests, resource availability and capacity, and traffic flow. Once notification of an approaching hurricane takes place, based on the current evacuation policies and procedures set in place, the operating conditions (including arrivals, resource capacity, and traffic flow) are decreased as a result of each port condition and its respective critical actions of the evacuation plan being carried out. Evacuee behavior is also considered as a parameter. The effectiveness of the current evacuation policies is observed for each hurricane category, one through five, for an "excellent" port state described earlier. Table 4.1 displays the evacuation policies and port characteristics in the base case.

Table 4.1. Base case parameters

Parameter	Values
Arrival Request Rate	Normal
Traffic Flow Control Policy	Inbound: Restrict at Port Condition Yankee
Resource Availability	Reduce as Needed
Evacuee Behavior	100% Evacuation Rate
Port State	Excellent
Hurricane Category	1, 2, 3, 4, 5

4.2. Experimental Design

The critical emergency response plan activities and environmental characteristics play an essential role in emergency response policy appraisal. Port decision makers can evaluate the effectiveness of their plans if there is an understanding of the relationship between these items and their aggregated impact. Thus, the parameter variations are presented in Tables 4.2 through 4.6. Throughout the year the amount of container traffic coming in and out of the port may vary based on the needs of the economy. For instance, in the fall and winter months the amount of incoming containers to the port is greater than the rest of the year because of holidays such as Thanksgiving and Christmas, while during the summer this container volume is much lower. These arrivals are based on schedules and requests by shippers to utilize the port. To take into consideration these variations in container volume that may occur throughout the year in a port environment, the arrival request rate is increased and decreased from the average rate by 20%. They are indexed as cases 1 through 3 with case 2 being the normal rate. These case variations are displayed in Table 4.2 and the actual arrival request rates for each terminal are presented in Table 4.3.

Table 4.2. Variations in arrival request rates

Arrival Request Rate		
Parameter Index	Percentage Variation	
1	Decrease	-20%
2	Normal	-
3	Increase	+20%

Table 4.3. Actual arrival request rates based on case variations

	Barbours Cut						Bayport			
	Vessels			Trucks	Rail		Vessels			Trucks
Parameter Index	Min	Avg	Max	Avg	Min	Max	Min	Avg	Max	Avg
1	0.0000	1.67992	4.8000	12.0000	0.8000	1.6000	0.0000	1.22504	2.4000	8.0000
2	0.0000	2.0999	6.0000	15.0000	1.0000	2.0000	0.0000	1.5313	3.0000	10.0000
3	0.0000	2.51988	7.2000	18.0000	1.2000	2.4000	0.0000	1.83756	3.6000	12.0000

In each port evacuation hurricane preparedness severe weather plan observed, outbound and inbound vessel travel regulations are major a responsibility of the Captain of the Port to carry out. The current methodology for restricting vessel traffic flow states that all inbound traffic should be prohibited at the setting of the port condition “Yankee” and outbound traffic at condition “Zulu”. To analyze the impact of this regulation, sixteen case variations, indexed as cases A through P, in inbound and outbound traffic flow and at which port condition they should be prohibited are developed with the constraint that no travel is permitted during “Zulu” and are presented in Table 4.4. Case C represents the traffic control policies used in the base case.

Table 4.4. Variations in traffic flow control policies

Traffic Flow Control Policy Varaitions											
Parameter Index	Direction	Port Condition				Parameter Index	Direction	Port Condition			
		Whiskey	X-Ray	Yankee	Zulu			Whiskey	X-Ray	Yankee	Zulu
A	Inbound	Prohibit	Prohibit	Prohibit	Prohibit	I	Inbound	Prohibit	Prohibit	Prohibit	Prohibit
	Outbound	Allow	Allow	Allow	Prohibit		Outbound	Allow	Prohibit	Prohibit	Prohibit
B	Inbound	Allow	Prohibit	Prohibit	Prohibit	J	Inbound	Allow	Prohibit	Prohibit	Prohibit
	Outbound	Allow	Allow	Allow	Prohibit		Outbound	Allow	Prohibit	Prohibit	Prohibit
C	Inbound	Allow	Allow	Prohibit	Prohibit	K	Inbound	Allow	Allow	Prohibit	Prohibit
	Outbound	Allow	Allow	Allow	Prohibit		Outbound	Allow	Prohibit	Prohibit	Prohibit
D	Inbound	Allow	Allow	Allow	Prohibit	L	Inbound	Allow	Allow	Allow	Prohibit
	Outbound	Allow	Allow	Allow	Prohibit		Outbound	Allow	Prohibit	Prohibit	Prohibit
E	Inbound	Prohibit	Prohibit	Prohibit	Prohibit	M	Inbound	Prohibit	Prohibit	Prohibit	Prohibit
	Outbound	Allow	Allow	Prohibit	Prohibit		Outbound	Prohibit	Prohibit	Prohibit	Prohibit
F	Inbound	Allow	Prohibit	Prohibit	Prohibit	N	Inbound	Allow	Prohibit	Prohibit	Prohibit
	Outbound	Allow	Allow	Prohibit	Prohibit		Outbound	Prohibit	Prohibit	Prohibit	Prohibit
G	Inbound	Allow	Allow	Prohibit	Prohibit	O	Inbound	Allow	Allow	Prohibit	Prohibit
	Outbound	Allow	Allow	Prohibit	Prohibit		Outbound	Prohibit	Prohibit	Prohibit	Prohibit
H	Inbound	Allow	Allow	Allow	Prohibit	P	Inbound	Allow	Allow	Allow	Prohibit
	Outbound	Allow	Allow	Prohibit	Prohibit		Outbound	Prohibit	Prohibit	Prohibit	Prohibit

When considering resource availability, the current evacuation policy requires the securing of equipment and berths consistently throughout the entire duration of the evacuation process. This reduction in resources is performed with no consideration of the evacuation port condition. To understand the impact of this severe weather plan activity, additional cases displayed in Table 4.5 are established to consider not only the base case (Case 1) but cases where resources reductions are initiated at different port conditions at different rates. Cases 2 through 5 show the parameter variations in resource availability, the percentage of resource reductions, and the port condition they should be initiated. Table 4.6 shows the changes in resource values in regressions of twenty-five percent.

Table 4.5. Variations in berth, crane, and yard equipment availability

Berth & Equipment Percetage Reduction Variation				
Parameter Index	Port Condition			
	Whiskey	X-Ray	Yankee	Zulu
1	As Needed	As Needed	As Needed	As Needed
2	-25%	-25%	-25%	-25%
3	ALL UP	-25%	-25%	-50%
4	ALL UP	ALL UP	-25%	-75%
5	ALL UP	ALL UP	ALL UP	-100%

Table 4.6. Resource capacity reductions by percentage

Resource Capacity Varaitaion Percentage Reductions					
	Normal	25%	50%	75%	100%
BPT Docks	3.00	2.25	1.50	0.75	0.00
BPT Wharf Cranes	9.00	6.75	4.50	2.25	0.00
BPT Yard Cranes	18.00	13.50	9.00	4.50	0.00
BCT Docks	6.00	4.50	3.00	1.50	0.00
BCT Wharf Cranes	13.00	9.75	6.50	3.25	0.00
BCT Yard Cranes	40.00	30.00	20.00	10.00	0.00

As mentioned earlier, when an evacuation of the port is deemed necessary, vessel owners are notified and have the option to stay in the port and wait for the storm to pass or leave the port for the wide open sea. In most situations, vessel owners opt for the latter of the two options, being the safer and more desirable choice. That being said, the decision to leave is still an option left up to vessel owners and there are instances when they do choose to remain docked at the port. Table 4.7 displays variation cases where all evacuees, 100%, index 1, decide to leave the port which is the normal situation and cases where only 85% and 75% of vessels decide to evacuate the port, indexes 2 and 3. The 15% and 30% of vessels deciding to remain at the port will display the impact evacuee behaviors have on the overall effectiveness of the evacuation plan.

Table 4.7. Variations in evacuee behaviors

Evacuee Behavior Leave Rate	
Parameter Index	**Percentage Variation**
1	100%
2	85%
3	70%

Each of the experiments presented in Tables 4.1 through 4.7 are run for all cases, across all parameter variants. This results in a total of 720 experimental experiments and once hurricane category and initial port states are applied, 10,800 total observations which are depicted in Table 4.8. The discrete-event simulation model will be run for 3 replications for each experiment including a warm-period to ensure a steady-state upon hurricane arrival.

Table 4.8. Total number of experiments

Parameter	Levels	Values
Arrival Request Rate	3	Base, +20%, -20%
Traffic Flow Control Policy	16	Base, 15 In/Out Travel Restriction Cases by Port Condition
Resource Availability	5	Base, 4 Cases of 25% Reductions by Port Condition
Evacuee Behavior	3	100%, 85%, 70% Evacuation Rates
Port State	3	Excellent, Fair, Poor
Hurricane Category	5	1, 2, 3, 4, 5

4.3. Verification and Validation

To ensure the simulation model described closely represents the port environment, the historical operational data from the Port of Houston and the outputs from the simulation model are compared to verify and validate whether the model captures the real-life system. The specific characteristics compared are the number of ship arrivals and departures. Table 4.9 displays the comparison between the operational data (the minimum, average and maximum values), and the simulation model outputs. The results in Table 4.9 show that the model outputs fall within range of the historical data and are not far off from the averages indicating that the model is a good representation of the real-life environment.

Table 4.9. Port operational data and simulation model comparison for validation

	Barbours Cut Terminal		Bayport Terminal	
Verification Metric	Historical Data	Simulation Model	Historical Data	Simulation Model
Average Vessel Arrivals	(0, 2.10, 6)	1.79	(0, 1.53, 3)	1.00
Average Vessel Departures	(0, 2.15, 7)	1.36	(0, 1.63, 4)	0.93

The Port of Houston has encountered a number of severe weather situations over the years including Hurricane Ike, which occurred September 13th, 2008, one of the most recent instances. When looking at other studies involving evacuation situations as a result of an approaching hurricane, it has been proven that most cases involving high level damages are a result of poor planning and improper procedure implementation (Tovia, 2007). Hurricane Katrina and the city of Louisiana is an illustration of this statement. Assessments in this study displayed that in situations where there is a high level of damage as a result of a natural disaster, a lack of emergency preparedness is the cause. For the purposes of the model verification and validation, information and data from the National Hurricane Center (2009) is collected to replicate the Port of Houston and Hurricane Ike. When making landfall at the Port of Houston, Hurricane Ike was a Category 2 storm resulting in five days of downtime at the port (POHA, 2008). This information aids in comparing this real-life situation under the current evacuation policies and procedures, being that they would have been the policies set in place at that time, to the simulation outputs. The comparison results are presented and discussed in Section 5.2.

CHAPTER 5

Results and Discussion

5.1. Overview

In the experiments, simulation outputs providing information regarding the port environment are presented in a table displaying the productivity and performance of the port given the experimental evacuation plan. These outputs are divided into three categories; overall, evacuation, and post-evacuation. The overall performance includes the productivity outputs for the entire simulation period but the majority of the results are accrued prior to the evacuation. The evacuation performance includes the productivity outputs for the evacuation period, which is from the beginning of port condition "Whiskey" to the end of port condition "Zulu". The post-evacuation performance includes the final resource condition outcomes at complete shutdown. The outputs in each category are affected by the policies considered in each experimental case. A few examples of performance outputs are displayed in Table 5.1. Also seen in this table, each experiment is differentiated by a four character index according to the evacuation policies and port characteristics considered in the experiment. Each character represents one of the policy parameter variants described in Section 4.2. For instance, experiment 21A1 represents an evacuation plan with arrival request rate of case 2 in Table 4.3, resource availability of case 1 in Table 4.5, traffic control policy of case A in Table 4.4, and evacuee behavior rate of case 1 in Table 4.7.

Table 5.1. Sample productivity outputs

	Overall				Evacuation			Post-Evacuation				
Experiment	Ship Arrivals	Ship Departures	Containers In	Containers Out	Ship Arrivals	Ship Departures	Re-Routes	Remaining Vessels	Unsecure Containers	Secured Containers	Unsecure Wharf Cranes	Unsecure Yard Cranes
21A1	21	21	3494	1002	0	6	31	0	0	2492	0	0
21B1	21	21	3494	1002	0	6	31	0	0	2492	0	0
21C1	21	21	3477	1003	0	6	27	0	0	2474	0	0
21D1	21	21	3470	1000	0	6	30	0	0	2470	0	0

From the performance outputs, final port states are established and represented by percentage values in a matrix, sorted by initial port state and hurricane category, to display the condition of the port at complete shutdown. Rows represent each experimental scenario and the columns represent hurricane category and initial port state. As seen in Table 5.2, the color classification for each percentage value corresponds with the range values and naming convention mentioned earlier. Evacuation plan scenarios with final port state percentages of 87.5% or greater represent a final port state condition of "excellent" and are shaded in green. A "fair" final port state condition is any percentage from 87.4% to 65.6% and is shaded in yellow. Red shaded values are those 65.5% or less and represent a "poor" final port state after the hurricane has departed.

Table 5.2. Sample final port conditions percentage matrix

	Final Port Condition Percentages by Initial Port Conditions & Hurricane Category											
	Excellent (100%)				Fair (75%)				Poor (50%)			
Experiment	1	2	3	4 & 5	1	2	3	4 & 5	1	2	3	4 & 5
21A1	98.00%	89.00%	34.25%	8.50%	90.83%	79.58%	6.42%	0.00%	76.50%	60.75%	0.00%	0.00%
21B1	98.00%	89.00%	34.25%	8.50%	90.83%	79.58%	6.42%	0.00%	76.50%	60.75%	0.00%	0.00%
21C1	98.00%	89.00%	34.25%	8.50%	90.83%	79.58%	6.42%	0.00%	76.50%	60.75%	0.00%	0.00%
21D1	98.00%	89.00%	34.25%	8.50%	90.83%	79.58%	6.42%	0.00%	76.50%	60.75%	0.00%	0.00%

The performance outputs and final port state percentages determine the economic impact of each experimental case and how much money will be lost as result of the policies in each associated evacuation plan. Table 5.3 demonstrates a few examples of the average economic impact per day and total lost revenue to the port as a result of each experimental case according to initial port state. The lost revenue to the port has only one value per case because the contributing outputs for final port state percentages are the same across all initial port states.

Table 5.3. Sample total lost revenue to the port and economic impact per day

		Excellent - 100%	Fair - 75%	Poor - 50%
Experiment	Loss of Port Revenue	Average Economic Impact	Average Economic Impact	Average Economic Impact
21A1	$5,396,050	$170,251,087	$223,167,755	$262,751,084
21B1	$5,396,050	$170,251,087	$223,167,755	$262,751,084
21C1	$4,635,695	$170,251,079	$223,167,747	$262,751,077
21D1	$5,199,804	$170,251,077	$223,167,745	$262,751,075

5.2. Hurricane Ike

To understand the impact of evacuation policies and validate the information discovered, data from hurricane Ike (POHA, 2011) is compared to the base case used in the simulation model. Being that hurricane Ike made landfall in Houston on September 13, 2008, the data from the month of September in 2008 was collected. There were a total of 44 ship arrivals and 39 departures during September 2008and considering the days in which the port was utilized, means an average of 2.44 arrivals per day and departure rate of 2.29 vessels per day. Since the model is run for a 14 day period, 14 is used to determine the total number of arrivals and departures at the port during that time to be 34 and 32 respectively. This would suggest that 2 vessels would be left remaining at the port during hurricane Ike. The historical results show that all ships were evacuated from the port by September 11th, there were no remaining vessels at the port, and no other arrivals to the port occurred until September 20th. Assuming that the port was in excellent operational condition with a 100% evacuation rate, performance results for the hurricane Ike are established and compared to the base case shown in Table 5.4.

Table 5.4. Experiment 21C1 and Hurricane Ike: Port performance estimates

	Overall				Evacuation			Post-Evacuation				
Experiment	Ship Arrivals	Ship Departures	Containers In	Containers Out	Ship Arrivals	Ship Departures	Re-Routes	Remaining Vessels	Unsecure Containers	Secured Containers	Unsecure Wharf Cranes	Unsecure Yard Cranes
21C1	21	21	3477	1003	0	6	27	0	0	2474	0	0
IKE	34	34	3483	1000	5	5	N/A	0	0	2483	0	0

From these estimated performance outputs, the final port state percentages in Table 5.5. andthe expected average revenue losses by hurricane category in Table 5.6, are obtained. When looking at both, it can be seen that the results for hurricane Ike are very close to those of the base case. This suggests that not only may the evacuation policies and procedures utilized during hurricane Ike be the same as the policies of today, it also suggests that the simulation model developed closely represents the port environment in an evacuation state.

Table 5.5. Experiment 21C1 and Hurricane Ike: Final port condition percentages

	Final Port Condition Percentages by Initial Port Conditions & Hurricane Category			
	Excellent (100%)			
Experiment	1	2	3	4 & 5
21C1	98.00%	89.00%	34.25%	8.50%
IKE	98.00%	89.00%	32.00%	1.00%

Table 5.6. Experiment 21C1 and Hurricane Ike: Average economic impact per hurricane category

Experiement	Category 1	Category 2	Category 3	Category 4 &5	Avg Revenue Loss
21C1	$8,001,084	$44,001,084	$263,001,095	$366,001,084	$170,251,087
IKE	$8,000,000	$44,000,000	$263,000,000	$366,000,000	$170,250,000

5.3. Policy Assessment

5.3.1. Base Case

The overall, evacuation, and post-evacuation outputs for the base case are presented in Table 5.7. Table 5.8 displays the final port state percentagesfor the base case where the conditions are normal arrival rates, no variation in traffic flow restrictions, a normal reduction in resource availability, and a normal vessel evacuation behavior rate across all final port conditions and hurricane categories. The economic impact and lost revenue to the port associated with each of the above are displayed in Table 5.9.

Table 5.7. Experiment 21C1: Normal arrival rate, resources reduced as needed, inbound traffic prohibited at Yankee, outbound traffic prohibited at Zulu, and 100% evacuee behavior rate overall, during evacuation, and post-evacuation productivity

	Overall				Evacuation			Post-Evacuation				
Experiment	Ship Arrivals	Ship Departures	Containers In	Containers Out	Ship Arrivals	Ship Departures	Re-Routes	Remaining Vessels	Unsecure Containers	Secured Containers	Unsecure Wharf Cranes	Unsecure Yard Cranes
21C1	21	21	3477	1003	0	6	27	0	0	2474	0	0

Table 5.8. Experiment 21C1: Normal arrival rate, resources reduced as needed, inbound traffic prohibited at Yankee, outbound traffic prohibited at Zulu, and 100% evacuee behavior final port percentages for categories 1 – 5 and all initial port conditions

	Final Port Condition Percentages by Initial Port Conditions & Hurricane Category											
	Excellent (100%)				Fair (75%)				Poor (50%)			
Experiment	1	2	3	4 & 5	1	2	3	4 & 5	1	2	3	4 & 5
21C1	98.00%	89.00%	34.25%	8.50%	90.83%	79.58%	6.42%	0.00%	76.50%	60.75%	0.00%	0.00%

Table 5.9. Experiment 21C1: Normal arrival rate, resources reduced as needed, inbound traffic prohibited at Yankee, outbound traffic prohibited at Zulu, and 100% evacuee behavior lost port revenue and average economic impact for all initial port conditions

		Excellent - 100%	Fair - 75%	Poor - 50%
Experiment	Loss of Port Revenue	Average Economic Impact	Average Economic Impact	Average Economic Impact
21C1	$4,635,695	$170,251,079	$223,167,747	$262,751,077

The overall outputs yield information regarding the productivity of the port including 21 ship arrivals and departures as well as 1,003 of the 3,477 containers shipped into the port were picked up and transported into the hinterland. The evacuation section of the table details how the port responded to the hurricane situation utilizing the normal evacuation policies and procedures. During the evacuation state, 27 ships were re-routed away from the port resulting in $4,635,695lost in potential revenue to the port. After the evacuation, the post-evacuation results display all equipment and containers have been secured and a warehouse space occupied by 2,474 containers.

This post-evacuation information regarding the final performance of the port, given the approach specified by the evacuation policies in the base case, has implications on the final state of the port presented in Table 5.7. For the base case with an "excellent" initial port state, the post-evacuation outputs result in the final port conditions of "excellent", "excellent", "poor", "poor", and "poor" respectively when the port experience hurricanes in categories 1 to 5. While the base case considers a port environment with an "excellent" initial port state, additional information can be obtained from the other two initial states. A "fair" initial port state results in final port conditions "excellent", "fair", "poor, "poor", and "poor" corresponding to hurricane categories 1 to5and a "poor" initial port state results in "fair", "poor", "poor", "poor" and "poor" final port states. For all three scenarios, the trend from "good" to "worse" is expected considering that the higher the hurricane category the greater the probability of damage will be. From these percentages the expected economic impact and lost port revenue from in Table 5.9 are developed for the base case with each initial port state.

5.3.2. Sensitivity Analysis

5.3.2.1. Impact of Changing Arrival Rates

In considering arrival request rates, it is obvious that with either increasing or decreasing from the average rate, the productivity of the port will be impacted accordingly. Table 5.10 displays the arrival rates and the simulation outputs of experiments 21C1, 11C1, and 31C1, which are the base case with the average arrival request rate, a 20% decrease of the average arrival request rate, and a 20% increase of the average arrival request rate, respectively. Each of these considers variations in solely arrivals and no other parameter. It can be seen that the productivity of the port in experiments 11C1 and 31C1 are lower and higher than those of experiment 21C1 because of this variation in arrival request rates.

Table 5.10. Experiments 21C1, 11C1, and 31C1: Productivity performance

	Overall				Evacuation			Post-Evacuation				
Experiment	Ship Arrivals	Ship Departures	Containers In	Containers Out	Ship Arrivals	Ship Departures	Re-Routes	Remaining Vessels	Unsecure Containers	Secured Containers	Unsecure Wharf Cranes	Unsecure Yard Cranes
21C1	21	21	3477	1003	0	6	27	0	0	2474	0	0
11C1	17	17	2769	816	0	3	21	0	0	1953	0	0
31C1	28	28	4225	1186	0	7	37	0	0	3039	0	0

From productivity results during evacuation, the condition of the port at complete shutdown is determined. The final port condition percentages for experiments 21C1, 11C1, and 31C1, displayed in Table 5.11, support the abovementioned progression from "better" to "worse" in port condition from hurricane category 1 to 5 for each experiment. They also show that there is decrease in final condition percentages when considering the initial state of the port. When moving from "excellent" to "poor" initial states, there is a reduction in final port states across all hurricane categories. Despite this, by analyzing the final port conditions for each experimental case, the percentage values for each initial state, "excellent", "fair", and "poor", are the same in each instance.

Table 5.11. Experiments 21C1, 11C1, and 31C1: Final port condition percentages

	Final Port Condition Percentages by Initial Port Conditions & Hurricane Category											
	Excellent (100%)				Fair (75%)				Poor (50%)			
Experiment	1	2	3	4 & 5	1	2	3	4 & 5	1	2	3	4 & 5
21C1	98.00%	89.00%	34.25%	8.50%	90.83%	79.58%	6.42%	0.00%	76.50%	60.75%	0.00%	0.00%
11C1	98.00%	89.00%	34.25%	8.50%	90.83%	79.58%	6.42%	0.00%	76.50%	60.75%	0.00%	0.00%
31C1	98.00%	89.00%	34.25%	8.50%	90.83%	79.58%	6.42%	0.00%	76.50%	60.75%	0.00%	0.00%

The associated expected losses in each experimental case follow the same trend as the results of the port productivity and condition at complete shutdown. In Table 5.12, it can be seen that the lost revenue to the port for experiments 11C1 and 31C1 increase and decrease from the base case. This is a direct result of the increase and decrease in ship arrival rates for each experimental case which also impacts the number of ship re-routes seen in Table 5.10. The higher the number of ship arrivals the greater the possibility of ship re-routes and the lower the number of ship arrivals the lower the number of ship re-routes. The average U.S. economic impact as a result of the evacuation policies presented in experiments 11C1 and 31C1 follow the same pattern however the increase and decrease is slight enough to be neglected. Considering the impact of the initial port condition, there is an increase in lost money from an "excellent" condition to a "poor" one across all experimental cases.

Table 5.12. Experiments 21C1, 11C1, and 31C1: Lost port revenue and average economic impact

		Excellent - 100%	Fair - 75%	Poor - 50%
Experiment	Loss of Port Revenue	Average Economic Impact	Average Economic Impact	Average Economic Impact
21C1	$4,635,695	$170,251,079	$223,167,747	$262,751,077
11C1	$3,605,526	$170,250,854	$223,167,521	$262,750,850
31C1	$6,364,880	$170,251,324	$223,167,992	$262,751,322

These observations suggest that arrival request rate does impact the productivity of the port as a result of an increase or decrease in vessel traffic to the port. This also affects the revenue that the port loses due to an evacuation. What arrival request rate does not affect is the final condition of the port at complete shutdown and the average economic revenue lost to the United States. To further verify this finding, Figures 5.1 and 5.2 are established to show the lost revenue and economic impact patterns across experimental cases with similar evacuation policies that vary in arrival request rate along with other parameter variants.

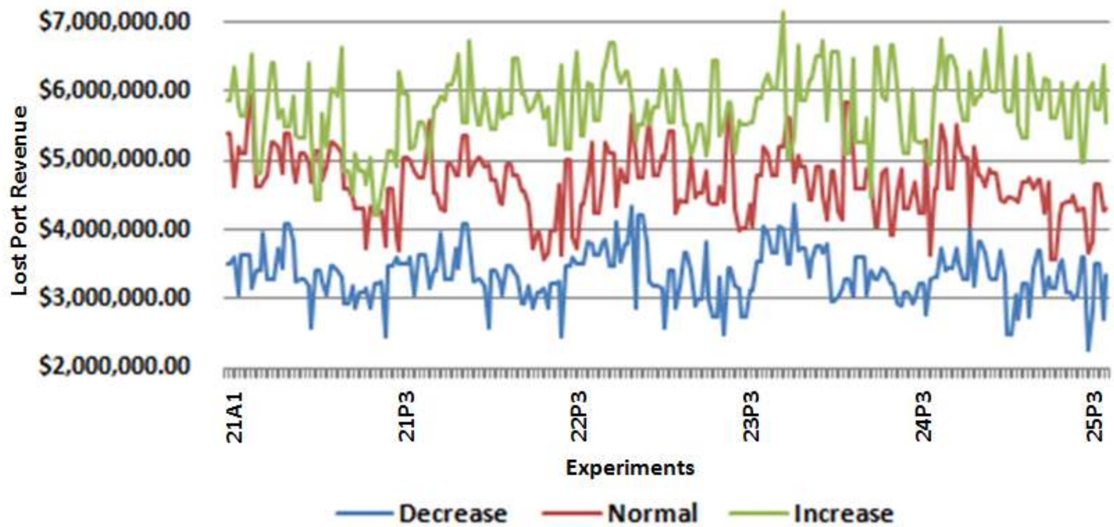

Figure 5.1. Expected lost port revenue for all evacuation policy combinations by type of arrival request rate

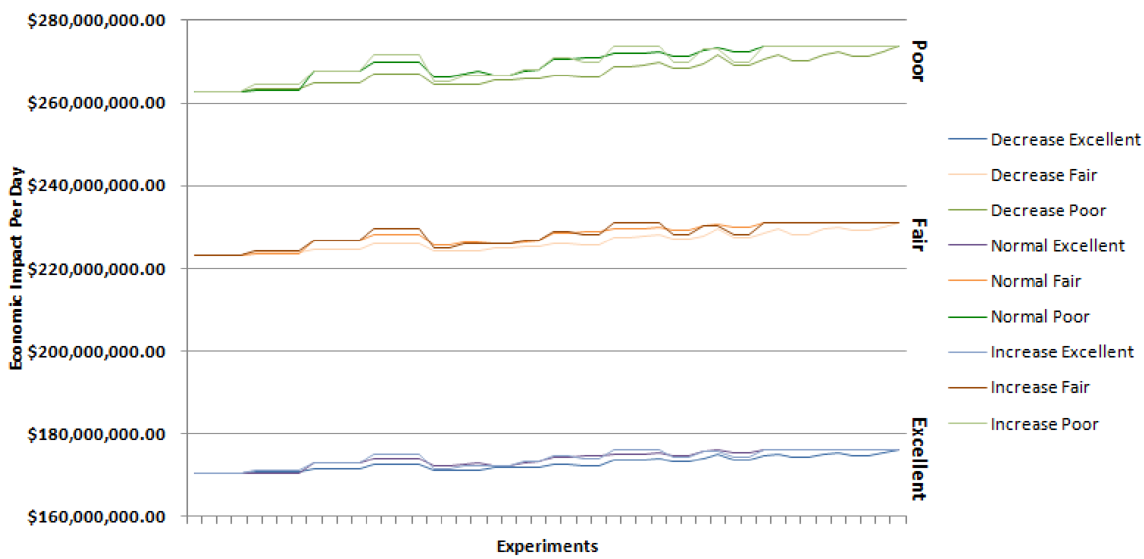

Figure 5.2. Experiments 21A1 - 21P3, 11A1 – 11P3, and 31A1 – 31P3: Expected economic impact for evacuation policy combinations with the same arrival request rate

5.3.2.2. Impact of Changing Traffic Flow Restrictions

One of the major critical tasks depicted by hurricane emergency preparedness and response plans for port evacuations is the vessel travel control policies. They regulate vessel traffic at the port, establishing when inbound and outbound travel is and is not permitted and at which one of the four port conditions the travel restrictions begin. Table 5.13 displays the productivity results for experiments 21A1 through 21P1, which vary in traffic flow restrictions only, including the base case, experiment 21C1. From the table, it can be seen that ship arrivals, containers in, out, and secured, and vessels re-routed during evacuation are not impacted by these changes in traffic flow allowances. While cases 21A1 through 21H1 are not affected during pre-evacuation, the numbers of ship departures in 21I1 through 21P1 are impacted by the parameter changes in traffic flow control. Experiments 21I1 through 21L1 are cases where outbound traffic is prohibited at port condition "X-Ray" and 21M1 through 21P1 at port condition "Whiskey".

Table 5.13. Experiments 21A1 – 21P1: Productivity performance in varying inbound and outbound traffic control policies

	Overall				Evacuation			Post-Evacuation				
Experiment	Ship Arrivals	Ship Departures	Containers In	Containers Out	Ship Arrivals	Ship Departures	Re-Routes	Remaining Vessels	Unsecure Containers	Secured Containers	Unsecure Wharf Cranes	Unsecure Yard Cranes
21A1	21	21	3494	1002	0	6	31	0	0	2492	0	0
21B1	21	21	3494	1002	0	6	31	0	0	2492	0	0
21C1	21	21	3477	1003	0	6	27	0	0	2474	0	0
21D1	21	21	3470	1000	0	6	30	0	0	2470	0	0
21E1	21	21	3487	1005	0	5	29	0	0	2482	0	0
21F1	21	21	3487	1005	0	5	29	0	0	2482	0	0
21G1	21	21	3474	998	0	5	35	0	0	2475	0	0
21H1	21	21	3474	998	0	5	35	0	0	2475	0	0
21I1	21	17	3474	998	0	2	27	4	0	2476	1	0
21J1	21	17	3474	998	0	2	27	4	0	2476	1	0
21K1	21	17	3485	1001	0	2	27	4	0	2484	1	0
21L1	21	17	3481	998	0	2	28	4	0	2483	1	0
21M1	21	15	3498	997	0	0	30	6	0	2501	1	0
21N1	21	15	3498	997	0	0	30	6	0	2501	1	0
21O1	21	15	3486	994	0	0	30	6	0	2492	1	0
21P1	21	15	3479	999	0	0	28	6	0	2480	1	0

In both groups, inbound traffic is prohibited from “Whiskey” to “Zulu” resulting in a decrease in the number of ship departures. In comparison to the base case, this decrease is 19% for the first group and 29% for the second. This percentage decrease in ship departures can be accounted for when looking at the number of ship departures during evacuation and the number of vessels remaining at the port under post-evacuation. The difference in ship arrivals and departures for these experimental groups are found in these experimental groups. Only two ships were permitted to leave during evacuation in experiments 21I1 through 21L1 and none in 21M1 through 21P1. Respectively, four and six vessels were not permitted to leave the port in both experimental groups which increase the potential damages to the port as result of the hurricane. This suggests that restricting outbound traffic at port conditions “Whiskey” and “X-Ray” will result in less ship departures during evacuation and more ships remaining at the port which negatively impacts the final condition of the port at complete shutdown, found in Table 5.14.

Table 5.14. Experiments 21A1 – 21P1: Final port condition percentages

	Final Port Condition Percentages by Initial Port Conditions & Hurricane Category											
	Excellent (100%)				Fair (75%)				Poor (50%)			
Experiment	1	2	3	4 & 5	1	2	3	4 & 5	1	2	3	4 & 5
21A1	98.00%	89.00%	34.25%	8.50%	90.83%	79.58%	6.42%	0.00%	76.50%	60.75%	0.00%	0.00%
21B1	98.00%	89.00%	34.25%	8.50%	90.83%	79.58%	6.42%	0.00%	76.50%	60.75%	0.00%	0.00%
21C1	98.00%	89.00%	34.25%	8.50%	90.83%	79.58%	6.42%	0.00%	76.50%	60.75%	0.00%	0.00%
21D1	98.00%	89.00%	34.25%	8.50%	90.83%	79.58%	6.42%	0.00%	76.50%	60.75%	0.00%	0.00%
21E1	97.90%	88.90%	34.24%	8.49%	90.70%	79.45%	6.40%	0.00%	76.29%	60.54%	0.00%	0.00%
21F1	97.90%	88.90%	34.24%	8.49%	90.70%	79.45%	6.40%	0.00%	76.29%	60.54%	0.00%	0.00%
21G1	97.90%	88.90%	34.24%	8.49%	90.70%	79.45%	6.40%	0.00%	76.29%	60.54%	0.00%	0.00%
21H1	97.90%	88.90%	34.24%	8.49%	90.70%	79.45%	6.40%	0.00%	76.29%	60.54%	0.00%	0.00%
21I1	96.77%	87.77%	34.14%	8.39%	89.19%	77.94%	6.26%	0.00%	74.04%	58.29%	0.00%	0.00%
21J1	96.77%	87.77%	34.14%	8.39%	89.19%	77.94%	6.26%	0.00%	74.04%	58.29%	0.00%	0.00%
21K1	96.77%	87.77%	34.14%	8.39%	89.19%	77.94%	6.26%	0.00%	74.04%	58.29%	0.00%	0.00%
21L1	96.77%	87.77%	34.14%	8.39%	89.19%	77.94%	6.26%	0.00%	74.04%	58.29%	0.00%	0.00%
21M1	96.26%	87.26%	34.09%	8.34%	88.51%	77.26%	6.19%	0.00%	73.01%	57.26%	0.00%	0.00%
21N1	96.26%	87.26%	34.09%	8.34%	88.51%	77.26%	6.19%	0.00%	73.01%	57.26%	0.00%	0.00%
21O1	96.26%	87.26%	34.09%	8.34%	88.51%	77.26%	6.19%	0.00%	73.01%	57.26%	0.00%	0.00%
21P1	96.26%	87.26%	34.09%	8.34%	88.51%	77.26%	6.19%	0.00%	73.01%	57.26%	0.00%	0.00%

A further observation is the differences between experiments 21A1 through 21D1 and 21E1 through 21H1. While there is no difference in the number of arrivals and departures overall, there is a slight difference in the vessel departures during evacuation. Six ships were permitted to leave in experiments 21A1 through 21D1 while five evacuated the port in 21E1 through 21H1. Just as the other experimental groups, this can be attributed to at which condition outbound traffic is restricted during the evacuation. For the first group, outbound traffic is prohibited at port condition ”Zulu”, just as the base case, and for the second group, outbound traffic is allowed up until the setting of port condition “Yankee”. In all eight cases, no vessels are left remaining at the port at the point of complete shutdown which implies that restricting outbound traffic at either port condition “Yankee” or “Zulu” will have the same final results. Thus, the better option is to allow outbound traffic up until port condition “Zulu” to ensure that as many vessels are permitted to exit the port prior to hurricane landfall as possible.

Just like with the variation of arrival rates, there is a decrease in final port state percentages when moving across the table horizontally from hurricane category 1 to 5 as well as from initial port state “excellent” to “poor” for the variation of traffic flow restrictions. Again, this can be attributed to the increase in damage probabilities as the hurricane category increases which is also responsible for the increase in average economic impact presented in Table 5.15. In this parameter variation however, there is also a vertical reduction in port state percentage values. Responsible for this is the increase in remaining vessels at the port and the possibility of the non-securing of wharf cranes created as a result more ship activities continuing in the later hours of evacuation by those remaining vessels. Additionally, the trend in lost port revenue is that in experiments where inbound traffic is prohibited at "Whiskey" and "X-Ray" (i.e., experiments 21A1, 21B1, 21E1, 21F1, 21I1, 21J1, 21M1, and 21N1), the expected losses are the same but not when the travel restriction is set at "Yankee" or Zulu".

Table 5.15. Experiments 21A1 – 21P1: Lost port revenue and average economic impact

		Excellent - 100%	Fair - 75%	Poor - 50%
Experiment	Loss of Port Revenue	Average Economic Impact	Average Economic Impact	Average Economic Impact
21A1	$5,396,050	$170,251,087	$223,167,755	$262,751,084
21B1	$5,396,050	$170,251,087	$223,167,755	$262,751,084
21C1	$4,635,695	$170,251,079	$223,167,747	$262,751,077
21D1	$5,199,804	$170,251,077	$223,167,745	$262,751,075
21E1	$5,089,451	$170,474,146	$223,454,346	$263,161,133
21F1	$5,089,451	$170,474,146	$223,454,346	$263,161,133
21G1	$5,947,890	$170,474,144	$223,454,343	$263,161,130
21H1	$5,947,890	$170,474,144	$223,454,343	$263,161,130
21I1	$4,623,409	$172,927,847	$226,606,901	$267,671,712
21J1	$4,623,409	$172,927,847	$226,606,901	$267,671,712
21K1	$4,684,728	$172,927,851	$226,606,904	$267,671,716
21L1	$4,795,100	$172,927,850	$226,606,904	$267,671,715
21M1	$5,248,875	$174,043,178	$228,039,892	$269,721,988
21N1	$5,248,875	$174,043,178	$228,039,892	$269,721,988
21O1	$5,199,823	$174,043,174	$228,039,888	$269,721,984
21P1	$4,807,368	$174,043,169	$228,039,883	$269,721,978

Another observation is that the experiments with the lowest lost revenue at the port are experiments 21I1 and 21J1 where outbound traffic is prohibited at port condition "X-Ray" and inbound traffic at port conditions "Whiskey" and "X-Ray" respectively. This is a result of re-routes during evacuation and which terminal they are re-routed from. The lost revenue for experiment 21C1 (base case) is very close to that of these two experiments but the productivity of the port in terms of ship departures is higher, the number of remaining vessels is lower, and the economic impact is lower, making it the better option in evacuation plan policies. Also impacted by these changes is the amount of vessel re-routes from the port. The earlier in the evacuation process that inbound traffic is restricted, the higher the number of vessel re-routes. This negatively affects the lost revenue at the port depending on which terminal these vessels are re-routed from.

5.3.2.3. Impact of Changing Resource Availability

Resources play an integral part in the performance of the port regardless of whether an evacuation state is initiated or not. During an evacuation utilizing the current port evacuation policy, which is the one used in the base case, equipment is secured as needed from the beginning of the very first port condition “Whiskey”. To observe the impact of the resource availability on evacuation plan effectiveness, four additional case variations in resource availability and securing are established and the performance results for each case are presented in Table 5.16. Experiment 21C1, as in all other parameter variants, remains the base case. Experiment 22C1 considers resource reductions of 25% starting at port condition “Whiskey” and continuing reductions in decrements of 25% at each of following port conditions. Experiments 23C1, 24C1, and 25C1 are similar in the reduction method and percentage except for the condition at which the reductions begin, “X-Ray”, ‘Yankee”, and “Zulu” respectively. In all five experiments, once the port is in the condition “Zulu”, regardless of the percentage of resources left to be secured, the availability of the resources goes to zero. This means that at port condition “Zulu”, the remaining 50% resource are reduced in experiment 23C1, 75% in experiment 24C1, and 100% in experiment 25C1.

Table 5.16. Experiments 21C1, 22C1, 23C1, 24C1, and 25C1: Changes in resource availability

	Overall				Evacuation			Post-Evacuation				
Experiment	Ship Arrivals	Ship Departures	Containers In	Containers Out	Ship Arrivals	Ship Departures	Re-Routes	Remaining Vessels	Unsecure Containers	Secured Containers	Unsecure Wharf Cranes	Unsecure Yard Cranes
21C1	21	21	3477	1003	0	6	27	0	0	2474	0	0
22C1	21	21	3471	995	0	6	29	0	5	2471	0	1
23C1	21	20	3493	996	0	4	27	1	10	2487	1	5
24C1	21	20	3466	991	0	4	30	1	15	2460	1	11
25C1	20	20	3447	987	0	4	32	0	20	2441	0	18

These variations mainly impact the securing of equipment and containers. As displayed in Table 5.16, when looking at the number of unsecure yard cranes column, progressing from one experiment to the next, there is an increase in the number of yards cranes that are not able to be secured. This amount also has implications on the increase in the number of unsecure containers from one experiment to the next. This can be attributed to the fact that yard cranes are used to secure containers because the longer the cranes are available for use, the longer operations continue but once the port condition "Zulu" starts, there are only 12 hours to secure the containers that are unsecure at that point in time as well as the yard cranes needed to secure them. This means that the longer the equipment is left available, whether it is being used or not, greatly affects the amount of that resource that is able to be secured during the evacuation.

The similar effect can be observed for the securing of wharf cranes. The longer they are available the greater the chances of not all of them being secured upon hurricane landfall. Similar to yard cranes and unsecure containers, the number of unsecure wharf cranes is implicated by the number of remaining vessels at the port. Table 5.16, however, only shows experiments that are variations from the base case (i.e., experiment 21C1) in terms of resource availability and all consider a 100% evacuation behavior rate so this change is not seen. When observing experiments that are the same but vary in both resource availability and evacuee behavior, Table 5.17 demonstrates that as resources securing policies change and the number of evacuees choosing to stay at the port increases, so does the number of wharf cranes left unsecure. Experiments 21C2, 22C2, 23C2, 24C2, and 25C2 are all experiments where 85% of evacuees decide to leave the port during evacuation and experiments 21C3, 22C3, 23C3, 24C3, and 25C3 are cases with a 70% evacuee evacuation rate.

Table 5.17. Experiments 21C1, 21C2, 21C3, 22C1, 22C2, 22C3, 23C1, 23C2, 23C3, 24C1, 24C2, 24C3, 25C1, 25C2 and 25C3: Changes in resource availability

	Overall				Evacuation			Post-Evacuation				
Experiment	Ship Arrivals	Ship Departures	Containers In	Containers Out	Ship Arrivals	Ship Departures	Re-Routes	Remaining Vessels	Unsecure Containers	Secured Containers	Unsecure Wharf Cranes	Unsecure Yard Cranes
21C1	21	21	3477	1003	0	6	27	0	0	2474	0	0
21C2	22	19	3483	1007	1	5	28	4	0	2476	1	0
21C3	24	17	3522	1008	3	4	27	7	0	2514	2	0
22C1	21	21	3471	995	0	6	29	0	5	2471	0	1
22C2	22	20	3474	1004	1	6	28	2	5	2464	1	1
22C3	24	17	3512	1007	3	4	26	7	5	2500	2	1
23C1	21	20	3493	996	0	4	27	1	10	2487	1	5
23C2	22	19	3497	999	1	5	31	2	10	2488	1	5
23C3	24	15	3505	1002	3	3	28	9	10	2493	4	5
24C1	21	20	3466	991	0	4	30	1	15	2460	1	11
24C2	21	20	3465	994	0	5	29	1	15	2456	1	11
24C3	22	17	3477	991	1	3	23	5	15	2471	4	11
25C1	20	20	3447	987	0	4	32	0	20	2441	0	18
25C2	20	19	3468	996	1	5	26	1	20	2453	1	18
25C3	20	17	3446	991	3	3	24	4	20	2435	3	18

Table 5.18 demonstrates the impact of varying resource availability on the final port conditions. As expected, the final port condition percentages decrease when going from "excellent" to "poor" initial port conditions and hurricane categories 1 to 5. The impact from experiment 21C1 to experiment 25C1 follows the same decreasing trend.

Table 5.18. Experiments 21C1, 22C1, 23C1, 24C1, and 25C1: Final port condition percentages

	Final Port Condition Percentages by Initial Port Conditions & Hurricane Category											
	Excellent (100%)				Fair (75%)				Poor (50%)			
Experiment	1	2	3	4 & 5	1	2	3	4 & 5	1	2	3	4 & 5
21C1	98.00%	89.00%	34.25%	8.50%	90.83%	79.58%	6.42%	0.00%	76.50%	60.75%	0.00%	0.00%
22C1	97.95%	88.95%	34.20%	8.45%	90.76%	79.51%	6.35%	0.00%	76.39%	60.64%	0.00%	0.00%
23C1	97.34%	88.34%	33.96%	8.21%	89.95%	78.70%	6.03%	0.00%	75.17%	59.42%	0.00%	0.00%
24C1	97.28%	88.28%	33.71%	7.96%	89.86%	78.61%	5.70%	0.00%	75.05%	59.30%	0.00%	0.00%
25C1	97.23%	88.23%	33.49%	7.74%	89.81%	78.56%	5.40%	0.00%	74.97%	59.22%	0.00%	0.00%

The expected economic impacts for experimental variations in resource availability, summarized in Table 5.19, are consistent with previous parameter variants. There is an increase in economic impact when going from "excellent" to "poor" initial port states as well as from experiment 21C1 to experiment 25C1. The expected lost revenue to the port does not follow the same trend because it is estimated based on the number of re-routes during an evacuation, the terminal in which vessels were re-routed from, and the lost revenue per ship for each port terminal. Experiment 21C1 (i.e., the base case) has the lowest lost port revenue.

Table 5.19. Experiments 21C1, 22C1, 23C1, 24C1, and 25C1: Lost port revenue and average economic impact

		Excellent - 100%	Fair - 75%	Poor - 50%
Experiment	Loss of Port Revenue	Average Economic Impact	Average Economic Impact	Average Economic Impact
21C1	$4,635,695	$170,251,079	$223,167,747	$262,751,077
22C1	$5,015,882	$170,464,603	$223,381,606	$262,965,606
23C1	$4,746,067	$172,157,067	$225,335,756	$265,414,269
24C1	$5,212,090	$172,771,261	$225,823,216	$265,655,477
25C1	$5,506,422	$173,308,614	$226,226,619	$265,812,623

From this information as a whole, the conclusion can be made that resource availability does impact the final port state through the amount of unsecure equipment at the point of complete shutdown. The longer equipment is permitted to be available during an evacuation, the greater the chances of some equipment not being secured and resulting in greater economic losses.

5.3.2.4. Impact of Changing Evacuee Behaviors

Unlike normal evacuation situations where all evacuees are expected to leave the area of potential impact, in port environments the evacuees have the decision whether they want to leave the port or stay during a hurricane. This makes the behavior of evacuees an important factor to be investigated. Table 5.20 displays experimental cases 21C1, 21C2, and 21C3 where all parameters are the same except for evacuee behavior which is 100%, 85% and 70% respectively. Across the three cases, evacuee behavior appears to affect ship departures during evacuation and vessels remaining at the port in that the greater the number of ship departures during evacuation, the lower the number of remaining vessels at the port and vice versa.

Table 5.20. Experiments 21C1, 21C2, and 21C3: Changes in evacuee behavior rates and port performance

	Overall				Evacuation			Post-Evacuation				
Experiment	Ship Arrivals	Ship Departures	Containers In	Containers Out	Ship Arrivals	Ship Departures	Re-Routes	Remaining Vessels	Unsecure Containers	Secured Containers	Unsecure Wharf Cranes	Unsecure Yard Cranes
21C1	21	21	3477	1003	0	6	27	0	0	2474	0	0
21C2	22	19	3483	1007	1	5	28	3	0	2476	1	0
21C3	24	19	3523	1006	3	4	26	5	0	2517	1	0

Therefore, from experiment 21C1 to 21C3, the amount of ship departures during evacuation reduces due to a reduction in evacuee behavior rates from 100% to 70% while the number of remaining vessels increases. These remaining vessels impact the final port condition percentages, which can be seen in Table 5.21. There is a consistent decrease in percentages values across all experiments, initial port states, and hurricane categories. There is also a consistent trend in average economic impact, Table 5.22, that increases from experiment to experiment and from initial port states "excellent" to "poor". What is not consistent is the lost revenue directly to the port which in experiment 21C3 is less than the other two experimental cases. As mentioned earlier, revenue is controlled by the number of re-routes from the port. Since this number is not influenced by evacuee behavior, this difference can be ignored in this case.

Table 5.21. Experiments 21C1, 21C2, and 21C3: Final port condition percentages

	Final Port Condition Percentages by Initial Port Conditions & Hurricane Category											
	Excellent (100%)				Fair (75%)				Poor (50%)			
Experiment	1	2	3	4 & 5	1	2	3	4 & 5	1	2	3	4 & 5
21C1	98.00%	89.00%	34.25%	8.50%	90.83%	79.58%	6.42%	0.00%	76.50%	60.75%	0.00%	0.00%
21C2	96.92%	87.92%	34.15%	8.40%	89.38%	78.13%	6.28%	0.00%	74.33%	58.58%	0.00%	0.00%
21C3	95.49%	86.49%	34.02%	8.27%	87.47%	76.22%	6.09%	0.00%	71.46%	55.71%	0.00%	0.00%

Table 5.22. Experiments 21C1, 21C2, and 21C3: Lost port revenue and average economic impact

		Excellent - 100%	Fair - 75%	Poor - 50%
Experiment	Loss of Port Revenue	Average Economic Impact	Average Economic Impact	Average Economic Impact
21C1	$4,635,695	$170,251,079	$223,167,747	$262,751,077
21C2	$4,844,152	$172,615,558	$226,205,666	$267,097,638
21C3	$4,451,717	$175,738,472	$230,218,030	$272,838,397

5.3.2.5.   Impact of Changing Initial Port State and Hurricane Category

As observed in earlier parameter variations, the impact of varying initial port states is fairly consistent across the board. When moving from hurricane category 1 to 5 for each initial port state, “excellent”, “fair”, and “poor”, there is a decrease in final port state percentage values. To further prove this finding, Figures 5.3 through 5.5 display the trend in final port states for each experimental case. For each initial port state it can be seen that hurricane categories 1 and 2, except for cases where the initial port state is “poor”, have the best results for final port states, being “excellent” and “fair”. All other categories of hurricanes result in “poor” final port states, which implies the expected losses from the hurricane and the recovery time will be greater than those of categories 1 and 2.

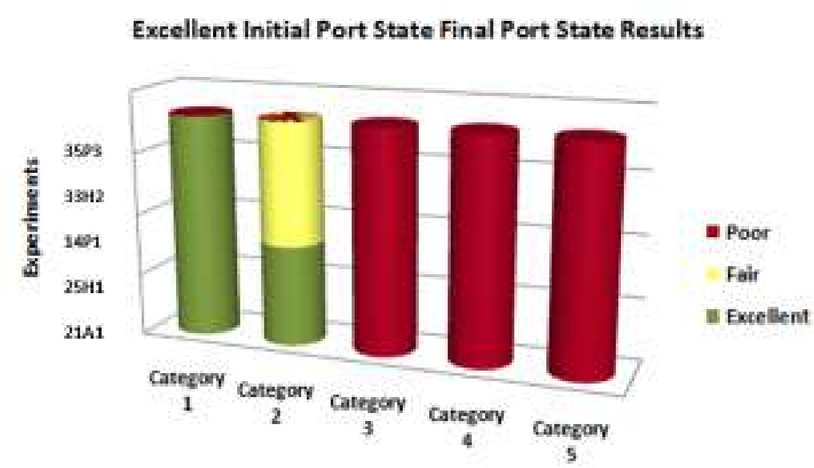

Figure 5.3. Excellent initial port state final port state results

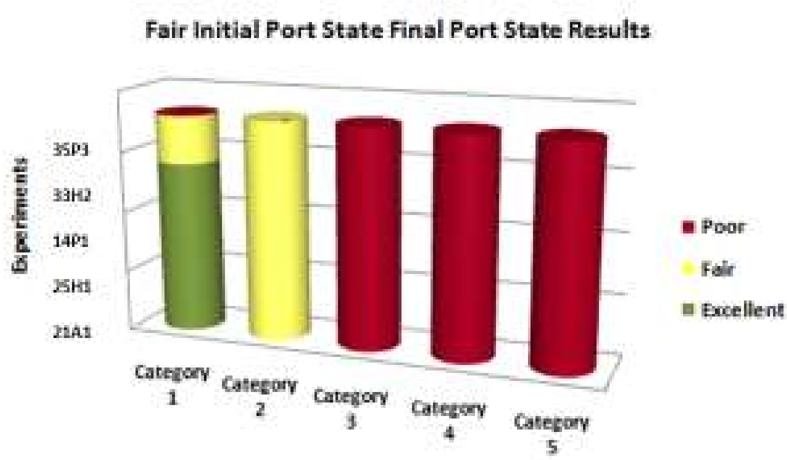

Figure 5.4. Fair initial port state final port state results

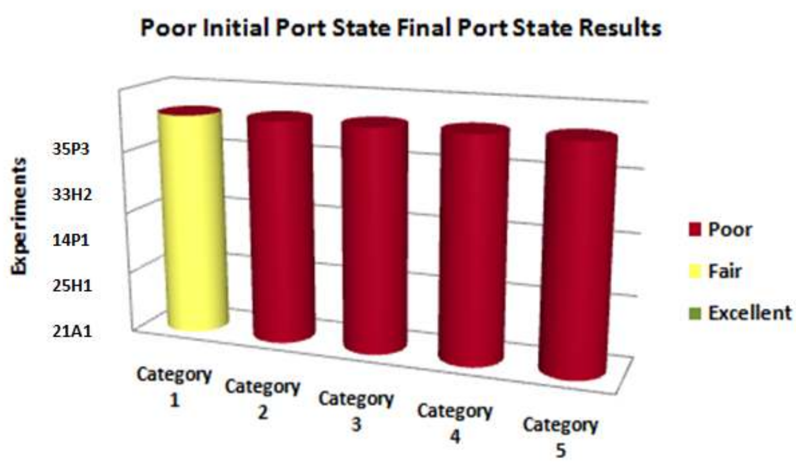

Figure 5.5. Poor initial port state final port state results

5.4. Expected Losses

While safety is the main focus of port officials and decision makers when it comes to emergency preparedness and response plans, productivity and costs are still a considered factor. If they weren't, the port would shutdown at the first notification that a hurricane was approaching and there would be no need for evacuation policies and procedures. The most desirable plan would be one centered on safety but results in the lowest economic costs and losses during a hurricane. Therefore, the costs related with each evacuation plan and its experimental variation are studied. Based on $400,000,000 lost per day (Shulterbrandt, 2009) and the percentage of the port available for use, provided by the final port condition percentages, Figure 5.6 displays the economic impact per day for experiments 1 through 720 for initial port states that were “excellent” but vary in all other parameters as they compare to experiment 21C1 (i.e., the base case). Initial port states “fair” and “poor” were omitted being that they result in similar economic trends just increased. The figure shows that all experiments, except for experiments 21A1 through 21D1 11A1 through 11D4 and 31A1 through 31D4, have higher losses per day, The remaining experiments, 21A1, 21B1, 21D1, 11A1 through 11D1 and 31A1 through 31D1, have equivalent values to experiment 21C1.

As stated earlier, these experiments result in the same final port state percentages across all experiments, hurricane categories, and initial port states, Table 5.23, and thus the same revenue losses. These experiments are similar in that they all have the same resource availability parameter, as needed, and 100% evacuee behavior rate. They differ in the arrival rate of vessels to the port, 21A1 through 21D1 having a normal arrival rate, 11A1 through 11D1 having a decreased arrival rate, and 31A1 through 31D1 having an increased arrival rate. They are also different in the traffic flow restrictions in each experiment. They vary in travel flow restriction cases 21A1 through 21D1, prohibiting outbound traffic at port condition “Zulu” and varying inbound traffic restrictions between “Whiskey”, “X-Ray”, “Yankee”, and “Zulu”. Experiments 21A1, 11A1 and 31A1

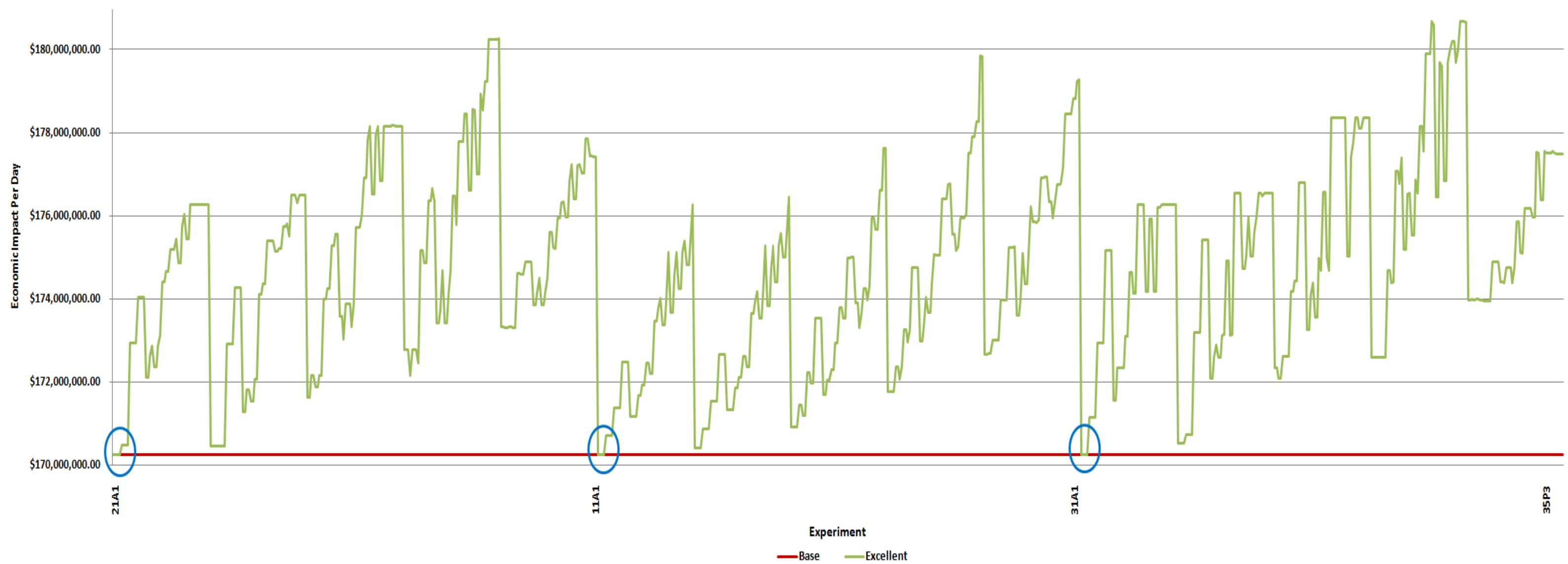

Figure 5.6. Expected revenue loss for all evacuation policy combinations for excellent initial port states

prohibit inbound traffic at port condition "Whiskey", experiments 21B1, 11B1, and 31B1 restrict inbound traffic at "X-Ray", experiments 21C1, 11C1, and 31C1 stop inbound traffic at the setting of port condition "Yankee", and inbound traffic is prohibited at "Zulu" for experiments 21CD1, 11D1, and 31D1.

Table 5.23. Experiments 21A1 – 21D1, 11A1 - 11D1 and 31A1 - 31D1: Final port condition percentages

	Final Port Condition Percentages by Initial Port Conditions & Hurricane Category											
	Excellent (100%)				Fair (75%)				Poor (50%)			
Experiment	1	2	3	4 & 5	1	2	3	4 & 5	1	2	3	4 & 5
21A1	98.00%	89.00%	34.25%	8.50%	90.83%	79.58%	6.42%	0.00%	76.50%	60.75%	0.00%	0.00%
21B1	98.00%	89.00%	34.25%	8.50%	90.83%	79.58%	6.42%	0.00%	76.50%	60.75%	0.00%	0.00%
21C1	98.00%	89.00%	34.25%	8.50%	90.83%	79.58%	6.42%	0.00%	76.50%	60.75%	0.00%	0.00%
21D1	98.00%	89.00%	34.25%	8.50%	90.83%	79.58%	6.42%	0.00%	76.50%	60.75%	0.00%	0.00%
11A1	98.00%	89.00%	34.25%	8.50%	90.83%	79.58%	6.42%	0.00%	76.50%	60.75%	0.00%	0.00%
11B1	98.00%	89.00%	34.25%	8.50%	90.83%	79.58%	6.42%	0.00%	76.50%	60.75%	0.00%	0.00%
11C1	98.00%	89.00%	34.25%	8.50%	90.83%	79.58%	6.42%	0.00%	76.50%	60.75%	0.00%	0.00%
11D1	98.00%	89.00%	34.25%	8.50%	90.83%	79.58%	6.42%	0.00%	76.50%	60.75%	0.00%	0.00%
31A1	98.00%	89.00%	34.25%	8.50%	90.83%	79.58%	6.42%	0.00%	76.50%	60.75%	0.00%	0.00%
31B1	98.00%	89.00%	34.25%	8.50%	90.83%	79.58%	6.42%	0.00%	76.50%	60.75%	0.00%	0.00%
31C1	98.00%	89.00%	34.25%	8.50%	90.83%	79.58%	6.42%	0.00%	76.50%	60.75%	0.00%	0.00%
31D1	98.00%	89.00%	34.25%	8.50%	90.83%	79.58%	6.42%	0.00%	76.50%	60.75%	0.00%	0.00%

Since the final port state percentage values are the same across all categories and initial port states for each of these experiments, it is necessary to analyze the performance outputs for each, Table 5.24. Upon further investigation, the difference between experiments is present only as a result of vessel arrival rates. Experiments 21A1 through 21D1 are those with normal vessel arrival rates, 11A1 through 11D1, decreased arrival rates, and 31A1 through 31D1 have increased vessel arrival rates. Also, when observing ship re-routes, the differences between experiments is a result of the inbound and outbound polices, discussed earlier.

Table 5.24. Experiments 21A1 - 21D1, 11A1 - 11D1 and 31A1 - 31D1: Port performance

	Overall				Evacuation			Post-Evacuation				
Experiment	Ship Arrivals	Ship Departures	Containers In	Containers Out	Ship Arrivals	Ship Departures	Re-Routes	Remaining Vessels	Unsecure Containers	Secured Containers	Unsecure Wharf Cranes	Unsecure Yard Cranes
21A1	21	21	3494	1002	0	6	31	0	0	2492	0	0
21B1	21	21	3494	1002	0	6	31	0	0	2492	0	0
21C1	21	21	3477	1003	0	6	27	0	0	2474	0	0
21D1	21	21	3470	1000	0	6	30	0	0	2470	0	0
11A1	17	17	2766	820	0	3	20	0	0	1946	0	0
11B1	17	17	2766	820	0	3	20	0	0	1946	0	0
11C1	17	17	2769	816	0	3	21	0	0	1953	0	0
11D1	17	17	2768	820	0	3	18	0	0	1948	0	0
31A1	28	28	4233	1184	0	7	34	0	0	3049	0	0
31B1	28	28	4233	1184	0	7	34	0	0	3049	0	0
31C1	28	28	4225	1186	0	7	37	0	0	3039	0	0
31D1	28	28	4224	1187	0	7	34	0	0	3036	0	0

When observing the lost revenue to the port, it is not necessary to look at all experiments because the remainder, experiments 11A1 through 15P3 an 31A1 through 35P3 have increases and decreases in the normal request arrival rate used in experiments 21A1 through 25P3. Figure 5.7 displays the lost revenue to the port as a result of an evacuation for each of these experiments. The figure illustrates no clear pattern or trend from one experiment to the next. When observing the experiments mentioned earlier, experiments 21A1 through 21D1, 11A1 through 11D1, and 31A1 through 31D1, it is clear that experimental case 21C1 results in the lowest lost revenue when the arrival request rate is normal (see Figure 5.8). However, when the arrival rate is decreased or increased it is the highest and experiments 11D1 and 31D1 are the lowest. These cases differ from experiment 21C1 not only in arrival rate but also in vessel travel restrictions where inbound and outbound traffic are prohibited at port condition "Zulu". This infers that experimental case 21C1 is the better option for emergency preparedness policies and procedures for hurricane evacuation when considering economic revenue loss but when considering the lost revenue to the port under non-normal operating conditions experiments 11D1 or 31D1 are the better option. Considering that the loss impact to the economy is much greater than that to the port, the policies and procedures outlined in experiment 21C1 are sufficient for the majority of situations.

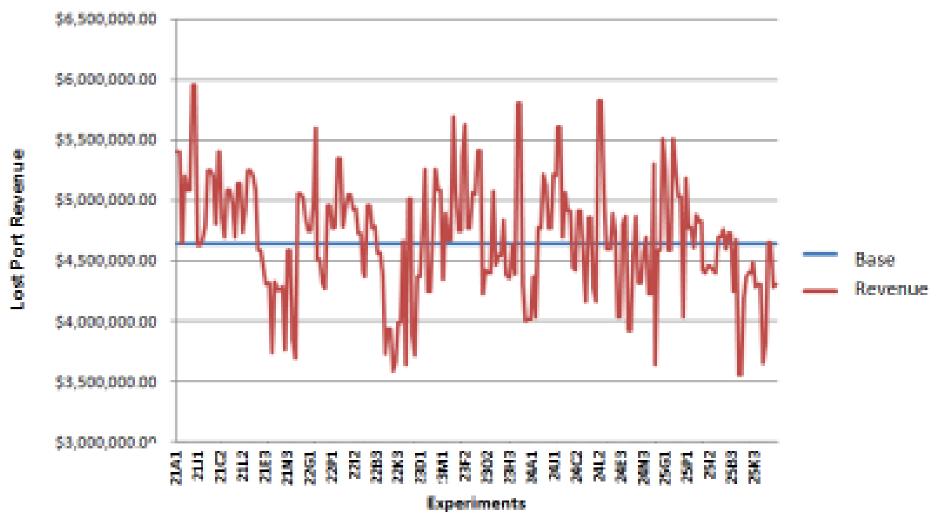

Figure 5.7. Experiments 21A1 – 25P3: Expected lost revenue to the port for normal arrival request rates

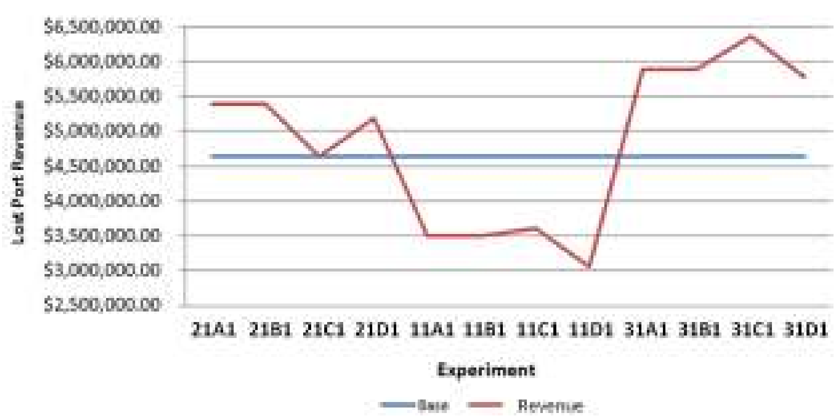

Figure 5.8. Experiments 21C1 - 21C4, 11C1 - 11C4 and 31C1 - 31C4: Expected lost revenue to the port

CHAPTER 6

Conclusion

The methodology presented is a practical approach to evacuation plan appraisal given a predictable disaster situation. A simulation model has been created to capture a complex port environment given a predictable natural disaster and the emergency evacuation policies and procedures that are performed during the disaster. Dynamic network flow theories have been integrated to provide a more accurate replication of the environment and its behavior for evaluation. This integration of simulation and dynamic network flow theories is the first research thrust of its kind and experiments have been conducted to demonstrate models capabilities and practicality.

While port evacuation plan policies and procedures currently follow a standardized approach and disregard the differences between ports when selecting the plan policies used, the information obtained in this study shows that environmental factors such as disaster type, or in this case category, and port condition during thus disaster should be in consideration when deciding on implementation methods. The experiments conducted show that the greater the disaster category and the worse the condition of the port, the greater the expected damages will be. They directly impact the amount of damages the port can expect to incur and the revenue and economic losses associated. While all emergency response activities are important, the imperative policies and procedure are those which can be measured and have a direct impact on performance during the emergency situation.

Our sensitivity analysis results demonstrate that these evacuation policies have a less impact on the final port state, but have a greater impact on the expected monetary losses. This is because each individual activity does not have a direct impact on every metric that determines the effectiveness of evacuation policies. Disaster type and the initial state of the port have a greater impact on final port state than the evacuation policies themselves. The most influential metrics in measuring the effectiveness of evacuation plans are remaining vessels, vessel re-routes, unsecure containers, and unsecure equipment, which are a direct result of arrival request rates, resource availability, vessel traffic control policies, and evacuee behavior. This is because each factor determines what occurs within the port and has an influence on either increased or decreased damage potential upon hurricane landfall. Evacuation policies with low output values in these metrics are most desirable being that they create low damage risk.

By examining the outputs of all experimental cases, the current policies and procedures implemented for evacuation can be utilized for most if not all emergency situations and these desirable results can be expected. However, the methodology presented contributes to the practical community in that it can be adopted by ports despite their characteristics and provides a universal tool for decision makers to know what to expect from an approaching disaster in their specific environment and respective port conditions. This not only enables increased preparedness by providing an expectation of damages that may be created as a result of an approaching disaster, it also allows for the adjustment of emergency preparedness plans to meet the needs of the port during evacuation so that those damages could be reduced. For example, in the cases where arrival request rates increase or decrease, the best vessel traffic control policies change from inbound restrictions at port condition “Yankee” and outbound at port condition “Zulu” to “Zulu” for both directions of travel.

In a conclusion, the methodology presented is a universal approach for efficient evaluation plans for port emergency preparedness and response to predictable natural disasters. Using this approach, the standardized evacuation plans could be adjusted based on the state of the port and the characteristics of the approaching disaster. The approach also provides the information about the expected damages by an approaching disaster in the specific port environment and conditions, which imply the recovery activities and resources needed to get the port back to a fully functioning state after the disaster.

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APPENDIX A

Data

Barbours Cut Vessel Schedule

Table A.1. Barbours Cut vessel arrivals, departures, and average time at the port

VESSEL NAME	DATE / TIME ARRIVED	DATE / TIME DEPARTED	ACTUAL DAYS	DAYS
ALTAMIRA EXPRESS	1/26/2011 9:46 AM	1/26/2011 7:15 PM	0.395138889	0
S/L RACER	1/26/2011 7:00 AM	1/27/2011 2:15 AM	0.802083333	1
:ERACRUZ EXPRESS	1/25/2011 10:49 PM	1/26/2011 11:10 PM	1.014583333	1
AURETTE A	1/24/2011 7:15 AM	1/25/2011 2:20 AM	0.795138889	1
SANTOS EXPRESS	1/23/2011 8:15 PM	1/25/2011 2:00 AM	1.239583333	2
MAERSK DUNEDIN	1/23/2011 6:30 PM	1/25/2011 12:55 AM	1.267361111	2
CAP SAN MARCO	1/23/2011 5:55 PM	1/25/2011 1:40 AM	1.322916667	2
RICKMERS SHANGHAI	1/23/2011 11:28 AM	1/23/2011 10:44 PM	0.469444444	0
BARCELONA EXRESS	1/21/2011 8:38 PM	1/22/2011 8:32 AM	0.495833333	1
ZIM SAO PAULO ll	1/20/2011 6:37 AM	1/20/2011 6:50 PM	0.509027778	0
CHARLESTON EXPRESS	1/20/2011 6:30 AM	1/21/2011 1:19 AM	0.784027778	1
HORIZON CHALLENGER	1/20/2011 2:00 AM	1/20/2011 8:30 PM	0.770833333	0
S/L EAGLE	1/19/2011 5:05 AM	1/20/2011 6:30 AM	1.059027778	1
NORTHERN DI:ERSITY	1/18/2011 3:15 PM	1/20/2011 12:34 AM	1.388194444	2
SAUDU TABUK	1/17/2011 10:35 PM	1/20/2011 5:06 AM	2.271527778	3
BUXFA:OURITE	1/17/2011 8:46 PM	1/18/2011 7:35 AM	0.450694444	1
MAERSK KENTUCKY	1/16/2011 6:45 PM	1/17/2011 11:52 PM	1.213194444	1
CAP ROCA	1/16/2011 2:30 PM	1/17/2011 12:44 PM	0.926388889	1
MAERSK ROTTERDAM	1/16/2011 2:30 PM	1/18/2011 2:05 PM	1.982638889	2
CSA: LONQUIMAY	1/16/2011 5:30 AM	1/16/2011 11:50 PM	0.763888889	0
NORTH SEA	1/13/2011 12:30 PM	1/14/2011 9:52 AM	0.890277778	1
S/L CHAMPION	1/12/2011 12:25 PM	1/13/2011 1:10 PM	1.03125	1
HEIDELBERG EXPRESS	1/12/2011 6:25 AM	1/13/2011 1:25 AM	0.791666667	1
GENOA EXPRESS	1/11/2011 11:10 PM	1/13/2011 6:35 AM	1.309027778	2
CAP SAN NICOLAS	1/11/2011 12:10 PM	1/12/2011 2:30 PM	1.097222222	1
MAERSK RE:ENNA	1/10/2011 9:45 PM	1/11/2011 3:58 PM	0.759027778	1
SYDNEY EXPRESS	1/10/2011 5:50 PM	1/11/2011 3:39 AM	0.409027778	1
MAERSK DRUMMOND	1/10/2011 1:05 AM	1/11/2011 5:55 AM	1.201388889	1
FREMANTLE EXPRESS	1/8/2011 1:44 PM	1/8/2011 8:40 PM	0.288888889	0
S/L METEOR	1/8/2011 6:15 AM	1/8/2011 11:09 PM	0.704166667	0
HOLSATIA EXPRESS	1/8/2011 5:00 AM	1/9/2011 12:04 AM	0.794444444	1

ZIM SAO PAULO ll	1/6/2011 3:35 PM	1/7/2011 9:27 AM	0.744444444	1
NEW ORLEANS EXPRESS	1/6/2011 11:55 AM	1/6/2011 7:33 PM	0.318055556	0
ST LOUIS EXPRESS	1/6/2011 4:48 AM	1/7/2011 1:50 AM	0.876388889	1
MAERSK ROUBAIX	1/3/2011 1:05 PM	1/5/2011 10:20 AM	1.885416667	2
MAERSK WISCONSIN	1/3/2011 12:08 PM	1/4/2011 11:15 AM	0.963194444	1
MADRID EXPRESS	1/1/2011 7:10 AM	1/1/2011 11:50 PM	0.694444444	0
PHILADELPHIA EXPRESS	12/27/2010 8:55 AM	1/1/2011 8:50 PM	5.496527778	4
ZIM SANTOS	12/31/2010 1:20 PM	1/1/2011 1:50 AM	0.520833333	1
NORFOLK EXPRESS	12/29/2010 5:20 PM	12/30/2010 6:20 PM	1.041666667	1
SAUDI DIRIYAH	12/29/2010 2:50 PM	12/31/2010 6:40 PM	2.159722222	2
LONGA:I	12/29/2010 10:55 AM	12/30/2010 12:13 PM	1.054166667	1
S/L MERCURY	12/29/2010 6:54 AM	12/30/2010 10:12 AM	1.1375	1
CAP SAN LORENZO	12/29/2010 6:05 AM	12/30/2010 8:40 AM	1.107638889	1
HERO	12/28/2010 11:30 AM	12/28/2010 7:00 PM	0.3125	0
WESTFALIA EXPRESS	12/28/2010 5:40 AM	12/29/2010 7:16 AM	1.066666667	1
AURETTE A	12/27/2010 8:20 AM	12/27/2010 11:15 PM	0.621527778	0
BUXFA:OURITE	12/26/2010 9:50 PM	12/27/2010 5:30 PM	0.819444444	1
MAERSK DANANG	12/26/2010 6:15 PM	12/27/2010 11:10 PM	1.204861111	1
SYDNEY EXPRESS	12/26/2010 5:59 AM	12/27/2010 8:30 PM	1.604861111	1
HORIZON CHALLENGER	12/24/2010 1:33 PM	12/26/2010 5:45 PM	2.175	2
CARIBBEAN SEA	12/23/2010 8:10 PM	12/24/2010 2:40 PM	0.770833333	1
CAP SAN RAPHAEL	12/23/2010 6:00 PM	12/26/2010 8:05 PM	3.086805556	3
YORKTOWN EXPRESS	12/23/2010 4:55 PM	12/24/2010 3:26 PM	0.938194444	1
MAE ROTTERDAM	12/23/2010 11:15 AM	12/24/2010 5:55 AM	0.777777778	1
S/L RACER	12/23/2010 10:15 AM	12/24/2010 8:00 AM	0.90625	1
RIO DE JANEIRO EXPRESS	12/21/2010 7:35 PM	12/23/2010 1:25 AM	1.243055556	2
AKRITAS	12/21/2010 5:20 PM	12/23/2010 1:50 AM	1.354166667	2
BONN EXPRESS	12/21/2010 2:20 AM	12/21/2010 4:44 PM	0.6	0
MAERSK WYOMING	12/19/2010 5:52 PM	12/20/2010 10:45 PM	1.203472222	1
WEHR FLOTTERBEK	12/16/2010 6:38 AM	12/16/2010 11:55 PM	0.720138889	0
ROME EXPRESS	12/16/2010 5:35 AM	12/16/2010 10:12 PM	0.692361111	0
FREEMANTLE EXPRESS	12/15/10 20:35	12/16/2010 7:24 PM	0.950694444	1
ALTAMIRA EXPRESS	12/15/10 06:55	12/15/2010 5:57 PM	0.459722222	0
S/L EAGLE	12/15/10 06:33	12/15/2010 11:05 PM	0.688888889	0
BUENOA AIRES EXPRESS	12/14/10 02:00	12/14/2010 8:25 PM	0.767361111	0
CHARLESTON EXPRESS	12/14/10 01:00	12/15/2010 3:04 PM	1.586111111	1
MAERSK RA:ENNA	12/13/10 06:43	12/13/2010 10:45 PM	0.668055556	0
WESTFALIA EXPRESS	12/13/10 06:43	12/13/2010 5:46 PM	0.460416667	0
MAERSK DA:AO	12/12/10 18:40	12/13/2010 11:59 PM	1.221527778	1
CAP SAN AUGUSTIN	12/12/10 06:35	12/13/2010 6:28 PM	1.495138889	1

BARCELONA EXPRESS	12/10/10 17:35	12/11/2010 6:00 AM	0.517361111	1
HORIZON CHALLENGER	12/10/2010 6:10 AM	12/10/2010 11:25 PM	0.71875	0
S/L CHAMPION	12/9/2010 8:00 PM	12/10/2010 4:11 PM	0.840972222	1
ZIM ITAJAI	12/09/10 09:25	12/10/2010 12:10 AM	0.614583333	1
LI:ORNO EXPRESS	12/08/10 05:35	12/9/2010 12:05 AM	0.770833333	1
WASHINGTON EXPRESS	12/06/10 23:06	12/8/2010 5:10 PM	1.752777778	2
MAERSK ROUBAIX	12/06/10 06:05	12/7/2010 12:15 AM	0.756944444	1
SAXONIA EXPRESS	12/06/10 04:30	12/7/2010 12:47 AM	0.845138889	1
SAUDI HOFUF	12/05/10 19:45	12/8/2010 5:58 PM	2.925694444	3
CAP SAN ANTONIO	12/05/10 18:10	12/6/2010 7:15 PM	1.045138889	1
MAERSK :IRGINIA	12/05/10 17:00	12/6/2010 11:16 PM	1.261111111	1
:ERACRUZ EXPRESS	12/04/10 23:20	12/5/2010 5:30 PM	0.756944444	1
SYDNEY EXPRESS	12/02/10 18:00	12/3/2010 6:30 AM	0.520833333	1
HEIDELBERG EXPRESS	12/02/10 16:49	12/3/2010 5:00 AM	0.507638889	1
CLOU ISLAND	12/02/10 05:42	12/2/2010 8:35 PM	0.620138889	0
S/L METEOR	12/01/10 06:20	12/1/2010 7:11 PM	0.535416667	0
SANTOS EXPRESS	11/30/10 11:33	12/1/2010 4:15 AM	0.695833333	1
ST LOUIS EXPRESS	11/29/10 20:50	12/1/2010 5:15 PM	1.850694444	2
AURETTE A	11/29/10 08:00	11/29/2010 11:42 PM	0.654166667	0
CAP SAN MARCO	11/29/10 06:50	11/30/2010 1:23 AM	0.772916667	1
MAERSK DENPASAR	11/28/10 19:35	11/30/2010 12:26 AM	1.202083333	2
HORIZON CHALLENGER	11/26/10 10:59	11/27/2010 12:55 AM	0.580555556	1
CSA: LONQUIMAY	11/24/10 13:43	11/25/2010 8:40 AM	0.789583333	1
NORTHERN DI:ERSITY	11/24/10 10:43	11/25/2010 2:33 AM	0.659722222	1
S/L MERCURY	11/24/10 05:55	11/26/2010 12:05 AM	1.756944444	2
NEW ORLEANS EXPRESS	11/23/10 15:54	11/24/2010 7:10 AM	0.636111111	1
PHILADELPHIA EXPRESS	11/22/10 23:28	11/24/2010 6:21 PM	1.786805556	2
CAP SAN NICOLAS	11/22/10 12:38	11/23/2010 4:05 AM	0.64375	1
MAERSK ROTTERDAM	11/22/10 06:40	11/23/2010 2:10 AM	0.8125	1
MAERSK IDAHO	11/22/10 06:20	11/23/2010 11:55 AM	1.232638889	1
FREMANTLE EXPRESS	11/21/10 21:03	11/22/2010 12:35 PM	0.647222222	1
GENOA EXPRESS	11/18/10 17:33	11/19/2010 6:25 AM	0.536111111	1
BUXFA:OURITE	11/18/10 16:27	11/19/2010 7:09 AM	0.6125	1
ZIM SAO PAULO II	11/18/10 11:49	11/19/2010 6:52 AM	0.79375	1
HERO	11/17/10 08:15	11/17/2010 11:06 PM	0.61875	0
S/L RACER	11/17/10 06:55	11/18/2010 12:21 AM	0.726388889	1
HOLSATIA EXPRESS	11/16/10 18:00	11/17/2010 1:58 PM	0.831944444	1
YORKTOWN EXPRESS	11/15/10 22:04	11/17/2010 5:42 PM	1.818055556	2
CAP ROCA	11/15/10 14:40	11/16/2010 10:07 PM	1.310416667	1
MAERSK RA:ENNA	11/15/10 06:15	11/15/2010 11:32 PM	0.720138889	0

SAUDI ABHA	11/14/10 20:50	11/17/2010 6:25 PM	2.899305556	3
MAERSK DUNEDIN	11/14/10 18:50	11/15/2010 8:20 PM	1.0625	1
LONGA:I	11/11/10 10:10	11/12/2010 7:32 AM	0.890277778	1
NORTH SEA	11/11/10 06:55	11/11/2010 8:00 PM	0.545138889	0
HORIZON CHALLENGER	11/11/10 06:22	11/13/2010 12:48 AM	1.768055556	2
ZIM ITAJAI	11/09/10 09:25	11/10/2010 12:10 AM	0.614583333	1
MADRID EXPRESS	11/10/10 22:27	11/11/2010 6:30 PM	0.835416667	1
SYDNEY EXPRESS	11/10/10 14:00	11/11/2010 3:11 AM	0.549305556	1
S/L EAGLE	11/10/10 06:30	11/11/2010 1:30 AM	0.791666667	1
BONN EXPRESS	11/10/10 03:12	11/10/2010 5:15 PM	0.585416667	0
CHARLESTON EXPRESS	11/08/10 20:50	11/10/2010 12:30 PM	1.652777778	2
AKRITAS	11/08/10 12:07	11/9/2010 1:22 AM	0.552083333	1
MAERSK ROUBAIX	11/08/10 07:15	11/8/2010 11:13 PM	0.665277778	0
CAP SAN LORENZO	11/07/10 18:40	11/8/2010 6:40 PM	1	1
MAERSK KENTUCKY	11/07/10 18:04	11/8/2010 9:14 PM	1.131944444	1
CARIBBEAN SEA	11/04/10 05:05	11/4/2010 10:17 PM	0.716666667	0
RIO DE JANEIRO EXPRESS	11/04/10 00:40	11/4/2010 11:05 PM	0.934027778	0
S/L CHAMPION	11/03/10 06:00	11/4/2010 11:50 AM	1.243055556	1
WASHINGTON EXPRESS	11/02/10 21:58	11/3/2010 12:35 PM	0.609027778	1
HENRIETTE SCHULTE	11/02/10 16:00	11/3/2010 1:12 AM	0.383333333	1
ALTAMIRA EXPRESS	11/02/10 07:45	11/3/2010 12:03 AM	0.679166667	1
AURETTE A	11/01/10 07:05	11/1/2010 11:12 PM	0.671527778	0
CAP SAN RAPHAEL	10/31/10 20:05	11/1/2010 5:10 PM	0.878472222	1
MAERSK DRUMMOND	10/31/10 18:20	11/1/2010 11:23 PM	1.210416667	1
NORTH SEA	10/28/10 09:15	10/29/2010 2:12 AM	0.70625	1
HORIZON CHALLENGER	10/28/10 06:05	10/29/2010 5:21 PM	1.469444444	1
BUXFA:OURITE	10/27/10 20:20	10/28/2010 8:55 AM	0.524305556	1
ROME EXPRESS	10/27/10 18:10	10/28/2010 5:50 PM	0.986111111	1
S/L METEOR	10/27/10 06:50	10/28/2010 3:44 AM	0.870833333	1
CAP SAN AUGUSTIN	10/27/10 05:31	10/28/2010 7:05 AM	1.065277778	1
LI:ORNO EXPRESS	10/26/10 06:49	10/26/2010 7:57 PM	0.547222222	0
ST LOUIS EXPRESS	10/25/10 18:30	10/27/2010 4:34 PM	1.919444444	2
MAERSK ROTTERDAM	10/25/10 07:10	10/25/2010 11:22 PM	0.675	0
WESTFALIA EXPRESS	10/25/10 06:50	10/26/2010 2:15 AM	0.809027778	1
MAERSK WISCONSIN	10/24/10 17:38	10/26/2010 1:25 AM	1.324305556	2
BARCELONA EXPRESS	10/22/10 07:00	10/23/2010 12:56 AM	0.747222222	1
CAP SAN ANTONIO	10/21/10 22:40	10/22/2010 10:04 PM	0.975	1
SAUDI TABUK	10/20/10 02:28	10/22/2010 6:15 AM	2.157638889	2
PHILADELPHIA EXPRESS	10/19/10 20:07	10/21/2010 4:07 AM	1.333333333	2
FREMANTLE EXPRESS	10/19/10 1:19	10/20/2010 4:18 AM	1.124305556	1

HEIDELBERG EXPRESS	10/19/10 05:25	10/20/2010 4:30 AM	0.961805556	1
SYDNEY EXPRESS	10/18/2010 11:30 AM	10/19/2010 2:21 AM	0.61875	1
MAERSK RA:ENNA	10/18/2010 7:20 AM	10/18/2010 11:08 PM	0.658333333	0
SAXONIA EXPRESS	10/17/2010 7:30 PM	10/19/2010 4:47 AM	1.386805556	2
MAERSK DANANG	10/17/2010 6:12 PM	10/18/2010 8:24 PM	1.091666667	1
CSA: PANAMBY 120	10/16/2010 1:35 PM	10/17/2010 2:40 AM	0.545138889	1
NORTH SEA	10/15/2010 5:45 AM	10/15/2010 8:05 PM	0.597222222	0
HORIZON CHALLENGER	10/13/2010 4:00 AM	10/15/2010 12:19 PM	2.346527778	2
NEW ORLEANS EXPRESS	10/12/2010 11:45 AM	10/13/2010 5:10 PM	1.225694444	1
YORKTOWN EXPRESS	10/12/2010 8:00 AM	10/13/2010 1:09 PM	1.214583333	1
S/L RACER	10/12/2010 5:30 AM	10/13/2010 1:10 AM	0.819444444	1
:ERACRUZ EXPRESS	10/11/2010 8:45 PM	10/13/2010 4:40 AM	1.329861111	2
SANTOS EXPRESS	10/11/2010 12:15 PM	10/12/2010 5:50 AM	0.732638889	1
MAERSK RUBAIX	10/11/2010 7:26 AM	10/11/2010 11:23 PM	0.664583333	0
MAERSK WYOMING	10/10/2010 6:25 PM	10/11/2010 10:30 PM	1.170138889	1
CAP SAN MARCO	10/10/2010 5:50 PM	10/11/2010 5:05 PM	0.96875	1
CARIBBEAN SEA	10/8/2010 6:15 AM	10/8/2010 7:40 PM	0.559027778	0
BUXFA:OURITE	10/7/2010 5:46 PM	10/8/2010 6:15 AM	0.520138889	1
HERO	10/5/2010 10:28 PM	10/6/2010 5:30 PM	0.793055556	1
S/L EAGLE	10/5/2010 6:20 AM	10/6/2010 12:48 AM	0.769444444	1
CHARLESTON EXPRESS	10/4/2010 9:45 PM	10/6/2010 6:25 PM	1.861111111	2
CSA: LONQUIMAY	10/4/2010 5:55 PM	10/5/2010 7:00 PM	1.045138889	1
AURETTE A	10/4/2010 7:04 AM	10/5/2010 12:50 AM	0.740277778	1
CAP SAN NICOLAS	10/4/2010 3:05 AM	10/5/2010 1:23 AM	0.929166667	1
MAERSK DA:AO	10/3/2010 6:40 PM	10/5/2010 12:01 AM	1.222916667	2
NORTHERN DI:ERSITY	10/3/2010 5:00 PM	10/4/2010 6:00 PM	1.041666667	1
SAUDI DIRIYAH	10/1/2010 7:50 PM	10/4/2010 6:37 AM	2.449305556	3
HORIZON CHALLENGER	9/30/2010 5:50 AM	9/30/2010 11:55 PM	0.753472222	0
HOLSATIA EXPRESS	9/29/2010 10:00 PM	9/30/2010 7:06 PM	0.879166667	1
NORTH SEA	9/29/2010 6:53 PM	9/30/2010 11:15 PM	1.181944444	1
FREMANTLE EXPRESS	9/28/2010 11:31 PM	9/29/2010 2:27 PM	0.622222222	1
S/L CHAMPION	9/28/2010 5:40 PM	9/29/2010 11:16 AM	0.733333333	1
BONN EXPRESS	9/28/2010 8:21 AM	9/29/2010 2:05 AM	0.738888889	1
CAP ROCA	9/27/2010 8:50 PM	9/29/2010 5:30 AM	1.361111111	2
WASHINGTON EXPRESS	9/27/2010 8:30 PM	9/29/2010 1:38 PM	1.713888889	2
MAERSK ROTTERDAM	9/27/2010 7:05 AM	9/27/2010 11:10 PM	0.670138889	0
GENOA EXPRESS	9/27/2010 5:12 AM	9/28/2010 5:12 AM	1	1
MAERSK :IRGINIA	9/26/2010 6:20 PM	9/27/2010 5:50 PM	0.979166667	1
LONGA:I	9/25/2010 11:20 AM	9/26/2010 4:50 PM	1.229166667	1
SYDNEY EXPRESS	9/24/2010 8:11 PM	9/25/2010 8:37 AM	0.518055556	1

ALTAMIRA EXPRESS	9/23/2010 5:35 AM	9/23/2010 6:22 PM	0.532638889	0
CARIBBEAN SEA	9/22/2010 10:05 PM	9/23/2010 6:12 PM	0.838194444	1
RIO DE JANEIRO EXPRESS	9/21/2010 10:03 PM	9/22/2010 8:00 PM	0.914583333	1
CAP SAN LORENZO	9/21/2010 5:30 PM	9/22/2010 11:35 PM	1.253472222	1
S/L METEOR	9/21/2010 7:25 AM	9/21/2010 11:55 PM	0.6875	0
ST LOUIS EXPRESS	9/21/2010 12:48 AM	9/22/2010 6:05 PM	1.720138889	1
MAERSK RA:ENNA	9/19/2010 9:10 PM	9/20/2010 11:20 PM	1.090277778	1
MAERSK DENPASAR	9/19/2010 6:00 PM	9/20/2010 11:07 PM	1.213194444	1
MADRID EXPRESS	9/17/2010 6:15 PM	9/19/2010 4:30 AM	1.427083333	2
NORTH SEA	9/16/2010 7:11 AM	9/16/2010 8:26 PM	0.552083333	0
HORIZON CHALLENGER	9/16/2010 6:07 AM	9/16/2010 11:37 PM	0.729166667	0
S/L MERCURY	9/15/2010 7:35 PM	9/16/2010 5:40 PM	0.920138889	1
LI:ORNO EXPRESS	9/14/2010 2:54 AM	9/15/2010 1:35 AM	0.945138889	1
PHILADELPHIA EXPRESS	9/13/2010 7:00 PM	9/15/2010 5:11 PM	1.924305556	2
BUXFA:OURITE	9/13/2010 5:38 PM	9/14/2010 1:28 PM	0.826388889	1
MAERSK IDAHO	9/13/2010 12:20 PM	9/14/2010 9:56 PM	1.4	1
CAP SAN RAPHAEL	9/13/2010 6:00 AM	9/14/2010 11:08 AM	1.213888889	1
MAERSK ROUBAIX	9/12/2010 5:20 PM	9/13/2010 8:00 AM	0.611111111	1
ROME EXPRESS	9/12/2010 10:10 AM	9/13/2010 2:12 AM	0.668055556	1
YORKTOWN EXPRESS	9/10/2010 4:42 PM	9/11/2010 5:33 PM	1.035416667	1
CARIBBEAN SEA	9/9/2010 5:55 AM	9/9/2010 9:20 PM	0.642361111	0
WESTFALIA EXPRESS	9/9/2010 12:55 AM	9/10/2010 1:00 AM	1.003472222	1
S/L RACER	9/8/2010 3:20 AM	9/8/2010 11:26 PM	0.8375	0
FREMANTLE EXPRESS	9/7/2010 7:50 PM	9/8/2010 7:05 PM	0.96875	1
AURETTE A	9/7/2010 6:00 AM	9/8/2010 2:00 AM	0.833333333	1
HEIDELBERG EXPRESS	9/6/2010 9:24 PM	9/7/2010 6:00 PM	0.858333333	1
SAUDI HOFUF	9/6/2010 7:25 PM	9/10/2010 12:07 AM	3.195833333	4
MAERSK DUNEDIN	9/5/2010 9:17 AM	9/8/2010 1:15 AM	2.665277778	3
CAP SAN AUGUSTIN	9/4/2010 6:25 PM	9/6/2010 12:01 AM	1.233333333	2
BARCELONA EXPRESS	9/3/2010 8:05 PM	9/4/2010 6:05 PM	0.916666667	1
NORTH SEA	9/2/2010 6:50 AM	9/3/2010 5:00 AM	0.923611111	1
HORIZON CHALLENGER	9/2/2010 6:20 AM	9/2/2010 8:10 PM	0.576388889	0
SAXONIA EXPRESS	9/1/2010 4:18 PM	9/2/2010 5:00 PM	1.029166667	1
NEW ORLEANS EXPRESS	8/31/2010 7:40 AM	9/1/2010 5:21 AM	0.903472222	1
S/L EAGLE	8/31/2010 6:38 AM	9/1/2010 6:10 AM	0.980555556	1
CHARLESTON EXPRESS	8/30/2010 9:29 PM	9/1/2010 5:17 PM	1.825	1
CAP SAN ANTONIO	8/30/2010 7:55 AM	8/31/2010 1:07 PM	1.216666667	0
MAERSK ROTTERDAM	8/30/2010 6:10 AM	8/31/2010 6:02 AM	0.994444444	0
CARIBBEAN SEA	8/27/2010 5:41 AM	8/27/2010 7:30 PM	0.575694444	0
RICHARDSON BARGES	8/26/2010 4:25 PM	8/26/2010 10:41 PM	0.261111111	0

:ERACRUZ EXPRESS	8/24/2010 7:00 PM	8/26/2010 1:06 AM	1.254166667	2
SANTOS EXPRESS	8/24/2010 5:55 PM	8/25/2010 1:01 PM	0.795833333	1
S/L CHAMPION	8/24/2010 7:40 AM	8/25/2010 1:10 AM	0.729166667	1
BUXFA:OURITE	8/24/2010 6:03 AM	8/24/2010 6:45 PM	0.529166667	0
WASHINGTON EXPRESS	8/23/2010 11:58 PM	8/25/2010 6:10 PM	1.758333333	2
HERO	8/23/2010 6:16 PM	8/25/2010 12:08 AM	1.244444444	2
MAERSK RA:ENNA	8/23/2010 7:15 AM	8/23/2010 11:20 PM	0.670138889	0
CAP SAN MARCO	8/23/2010 5:55 AM	8/24/2010 5:40 AM	0.989583333	1
MAERSK DRUMMOND	8/22/2010 7:33 PM	8/23/2010 11:36 PM	1.16875	1
MARESK KENTUCKY	8/20/2010 6:20 PM	8/21/2010 12:35 AM	0.260416667	1
PROGRESSO	8/20/2010 5:52 AM	8/20/2010 12:01 PM	0.25625	0
NORTH SEA	8/20/2010 5:35 AM	8/21/2010 5:10 AM	0.982638889	1
HORIZON CHALLENGER	8/19/2010 6:08 AM	8/20/2010 12:13 AM	0.753472222	1
FREMANTLE EXPRESS	8/17/2010 5:00 PM	8/18/2010 6:40 AM	0.569444444	1
S/L METEOR	8/17/2010 9:40 AM	8/18/2010 7:20 AM	0.902777778	1
BONN EXPRESS	8/17/2010 3:42 AM	8/18/2010 12:32 AM	0.868055556	1
CAP SAN NICOLAS	8/17/2010 12:13 AM	8/18/2010 6:09 AM	1.247222222	1
ST LOUIS EXPRESS	8/16/2010 10:46 PM	8/18/2010 6:08 PM	1.806944444	2
MAERSK ROUBAIX	8/16/2010 8:00 AM	8/17/2010 12:40 AM	0.694444444	1
CSA: LONQUIMAY	8/16/2010 12:42 AM	8/17/2010 1:10 AM	1.019444444	1
MAERSK WYOMING	8/15/2010 7:00 PM	8/17/2010 6:20 AM	1.472222222	2
NORTHERN DI:ERSITY	8/15/2010 5:43 PM	8/16/2010 8:06 PM	1.099305556	1
SYDNEY EXPRESS	8/12/2010 5:20 PM	8/13/2010 1:34 PM	0.843055556	1
CARIBBEAN SEA	8/12/2010 6:26 AM	8/13/2010 1:00 AM	0.773611111	1
GENOA EXPRESS	8/11/2010 2:06 PM	8/12/2010 6:40 AM	0.690277778	1
ALTAMIRA EXPRESS	8/10/2010 7:49 AM	8/11/2010 6:30 AM	0.945138889	1
S/L MERCURY	8/10/2010 6:38 AM	8/11/2010 12:37 AM	0.749305556	1
PHILADELPHIA EXPRESS	8/9/2010 11:00 PM	8/11/2010 7:04 PM	1.836111111	2
CAP ROCA	8/9/2010 9:00 PM	8/10/2010 7:45 PM	0.947916667	1
AURETTE A	8/9/2010 6:39 AM	8/9/2010 11:55 PM	0.719444444	0
HOLSATIA EXPRESS	8/8/2010 8:50 PM	8/10/2010 1:02 AM	1.175	2
MAERSK DANANG	8/8/2010 6:55 PM	8/9/2010 8:20 PM	1.059027778	1
SAUDI ABHA	8/8/2010 7:06 AM	8/10/2010 8:10 AM	2.044444444	2
HORIZON CHALLENGER	8/5/2010 6:25 AM	8/5/2010 11:45 PM	0.722222222	0
NORTH SEA	8/4/2010 7:00 PM	8/6/2010 1:05 AM	1.253472222	2
S/L RACER	8/3/2010 9:18 PM	8/4/2010 1:32 AM	0.176388889	1
LI:ORNO EXPRESS	8/3/2010 6:58 PM	8/4/2010 12:13 PM	0.71875	1
MADRID EXPRESS	8/3/2010 8:00 AM	8/4/2010 12:54 AM	0.704166667	1
YORKTOWN EXPRESS	8/2/2010 9:20 PM	8/4/2010 5:17 PM	1.83125	2
LONGA:I	8/2/2010 8:52 AM	8/3/2010 9:30 AM	1.026388889	1

MAERSK ROTTERDAM	8/2/2010 6:25 AM	8/3/2010 1:20 AM	0.788194444	1
CAP SAN LORENZO	8/2/2010 5:50 AM	8/3/2010 6:15 AM	1.017361111	1
BUXFA:OURITE	8/1/2010 6:30 PM	8/2/2010 5:55 PM	0.975694444	1
MAERSK :IRGINIA	8/1/2010 3:16 PM	8/2/2010 9:18 PM	1.251388889	1
CAMPACHE BAY	7/29/2010 6:55 AM	7/29/2010 5:44 PM	0.450694444	0
CARIBBEAN SEA	7/28/2010 6:55 PM	7/29/2010 7:55 PM	1.041666667	1
S/L EAGLE	7/27/2010 11:35 AM	7/28/2010 6:13 AM	0.776388889	1
HEIDELBERG EXPRESS	7/27/2010 10:48 AM	7/28/2010 7:04 AM	0.844444444	1
FREMANTLE EXPRESS	7/27/2010 4:00 AM	7/27/2010 9:04 PM	0.711111111	0
CHARLESTON EXPRESS	7/26/2010 10:00 PM	7/28/2010 5:28 PM	1.811111111	2
MAERSK RA:ENNA	7/26/2010 7:05 AM	7/27/2010 6:35 AM	0.979166667	1
MAERSK DA:AO	7/26/2010 6:20 AM	7/27/2010 9:05 AM	1.114583333	1
RIO DE JANEIRO EXPRESS	7/26/2010 12:30 AM	7/27/2010 2:10 AM	1.069444444	1
ROME EXPRESS	7/23/2010 5:23 PM	7/24/2010 12:55 PM	0.813888889	1
NORTH SEA	7/22/2010 8:45 AM	7/23/2010 1:13 AM	0.686111111	1
HORIZON CHALLENGER	7/22/2010 6:07 AM	7/22/2010 8:08 PM	0.584027778	0
MAERSK BALTIMORE	7/21/2010 6:20 AM	7/21/2010 10:45 PM	0.684027778	0
NEW ORLEANS EXPRESS	7/20/2010 7:56 AM	7/21/2010 1:30 AM	0.731944444	1
S/L CHAMPION	7/20/2010 7:20 AM	7/21/2010 12:45 AM	0.725694444	1
WASHINGTON EXPRESS	7/19/2010 6:52 PM	7/21/2010 1:05 PM	1.759027778	2
MAERSK ROUBAIX	7/19/2010 7:15 AM	7/20/2010 1:30 AM	0.760416667	1
WESTFALIA EXPRESS	7/19/2010 4:00 AM	7/20/2010 3:15 AM	0.96875	1
SAUDI TABUK	7/19/2010 3:05 AM	7/22/2010 2:35 AM	2.979166667	3
MAERSK WISCONSIN	7/18/2010 6:05 PM	7/19/2010 6:14 PM	1.00625	1
BARCELONA EXPRESS	7/16/2010 11:05 PM	7/18/2010 1:10 AM	1.086805556	2
ST LOUIS EXPRESS	7/13/2010 10:35 PM	7/14/2010 5:40 PM	0.795138889	1
HERO	7/13/2010 10:20 PM	7/14/2010 9:00 PM	0.944444444	1
S/L METEOR	7/13/2010 6:45 AM	7/14/2010 12:41 AM	0.747222222	1
SAXONIA EXPRESS	7/12/2010 7:15 AM	7/13/2010 1:32 AM	0.761805556	1
MAERSK DENPASAR	7/11/2010 6:10 PM	7/12/2010 4:50 PM	0.944444444	1
HORIZON CHALLENGER	7/9/2010 11:48 AM	7/10/2010 12:28 AM	0.527777778	1
NORTH SEA	7/7/2010 7:55 PM	7/8/2010 8:07 PM	1.008333333	1
:ERACRUZ EXPRESS	7/7/2010 7:15 PM	7/9/2010 4:13 AM	1.373611111	2
NEDLLOYD HONSHU	7/6/2010 7:41 AM	7/7/2010 2:55 AM	0.801388889	1
BONN EXPRESS	7/6/2010 4:48 AM	7/7/2010 3:06 PM	1.429166667	1
PHILADELPHIA EXPRESS	7/6/2010 12:10 AM	7/7/2010 3:06 PM	1.622222222	1
SANTOS EXPRESS	7/5/2010 8:24 AM	7/6/2010 8:27 AM	1.002083333	1
MAERSK ROTTERDAM	7/5/2010 6:42 AM	7/5/2010 11:19 PM	0.692361111	0
MAERSK IDAHO	7/4/2010 9:10 PM	7/6/2010 12:50 AM	1.152777778	2
FREMANTLE EXPRESS	7/3/2010 5:42 PM	7/4/2010 1:55 AM	0.342361111	1

CARIBBEAN SEA	7/1/2010 10:50 PM	7/3/2010 8:11 AM	1.389583333	2
NORTHERN DI:ERSITY	6/30/2010 12:12 PM	7/1/2010 3:20 PM	1.130555556	1
ALTAMIRA EXPRESS	6/29/2010 11:00 AM	7/1/2010 1:30 PM	2.104166667	2
CAP SAN NICOLAS	6/29/2010 6:49 AM	7/1/2010 3:52 PM	2.377083333	2
S/L RACER	6/29/2010 5:05 AM	6/30/2010 2:59 AM	0.9125	1
YORKTOWN EXPRESS	6/28/2010 9:12 PM	6/30/2010 9:31 AM	1.513194444	2
SYDNEY EXPRESS	6/28/2010 10:08 AM	6/29/2010 2:18 AM	0.673611111	1
SAUDI DIRIYAH	6/28/2010 6:36 AM	7/1/2010 6:00 PM	3.475	3
MAERSK RA:ENA	6/28/2010 6:02 AM	6/28/2010 11:45 PM	0.738194444	0
CSA: LONQUIMAY	6/27/2010 7:00 PM	6/29/2010 1:05 AM	1.253472222	2
MAERSK DUNEDEN	6/27/2010 5:45 PM	6/29/2010 1:45 AM	1.333333333	2
CAP ROCA	6/25/2010 3:07 PM	6/26/2010 7:00 PM	1.161805556	1
HORIZON CHALLENGER	6/24/2010 6:32 AM	6/24/2010 9:21 PM	0.617361111	0
NORTH SEA	6/23/2010 12:00 AM	6/25/2010 2:10 AM	2.090277778	2
RICHARDSON BARGE	6/22/2010 9:15 PM	6/23/2010 2:15 PM	0.708333333	1
LI:ORNO EXPRESS	6/22/2010 5:40 PM	6/23/2010 7:03 AM	0.557638889	1
SEALAND EAGLE	6/22/2010 7:30 AM	6/22/2010 11:50 PM	0.680555556	0
CHARLESTON EXPRESS	6/21/2010 9:03 PM	6/23/2010 5:53 PM	1.868055556	2
GENOA EXPRESS	6/21/2010 6:15 PM	6/23/2010 4:55 AM	1.444444444	2
MAERSK ROBAIX	6/21/2010 6:46 AM	6/21/2010 10:50 PM	0.669444444	0
HOLSATIA EXPRESS	6/21/2010 6:00 AM	6/22/2010 10:37 AM	1.192361111	1
MAERSK KENTUCKY	6/20/2010 6:10 PM	6/21/2010 10:15 PM	1.170138889	1
CARIBBEAN SEA	6/18/2010 5:46 PM	6/19/2010 12:56 PM	0.798611111	1
BUXFA:ORITE	6/18/2010 3:35 AM	6/18/2010 6:07 PM	0.605555556	0
CAP HENRI	6/17/2010 5:41 PM	6/18/2010 3:55 PM	0.926388889	1
CARDONIA	6/16/2010 6:22 AM	6/16/2010 8:57 PM	0.607638889	0
HEIDELBERG EXPRESS	6/15/2010 12:58 PM	6/16/2010 6:32 AM	0.731944444	1
S/L MERCURY	6/15/2010 6:58 AM	6/16/2010 1:58 AM	0.791666667	1
LONGA:I	6/15/2010 3:33 AM	6/16/2010 3:30 AM	0.997916667	1
WASHINGTON EXPRESS	6/14/2010 7:05 PM	6/16/2010 5:52 PM	1.949305556	2
MAERSK DRUMMOND	6/13/2010 9:30 PM	6/15/2010 3:20 AM	1.243055556	2
MADRID EXPRESS	6/13/2010 6:32 PM	6/15/2010 5:11 AM	1.44375	2
AURETTE A	6/13/2010 6:13 AM	6/15/2010 12:40 AM	1.76875	2
CAP SAN LORENZO	6/11/2010 5:35 PM	6/12/2010 7:40 PM	1.086805556	1
FREMANTLE EXPRESS	6/11/2010 1:45 PM	6/13/2010 1:40 AM	1.496527778	2
HORIZON CHALLENGER	6/10/2010 6:05 AM	6/10/2010 11:10 PM	0.711805556	0
NORTH SEA	6/9/2010 7:37 PM	6/10/2010 7:58 PM	1.014583333	1
ST LOUIS EXPRESS	6/8/2010 4:11 PM	6/9/2010 5:24 PM	1.050694444	1
NEW ORLEANS EXPRESS	6/8/2010 8:05 AM	6/9/2010 6:10 AM	0.920138889	1
S/L METEOR	6/8/2010 6:40 AM	6/9/2010 2:16 AM	0.816666667	1

MAESK ROTTERDAM	6/7/2010 5:53 PM	6/8/2010 2:40 AM	0.365972222	1
RIO DE JANEIRO EXPRESS	6/7/2010 1:15 AM	6/8/2010 3:40 AM	1.100694444	1
MAERSK WYOMING	6/6/2010 6:35 PM	6/7/2010 5:25 PM	0.951388889	1
CARIBBEAN SEA	6/6/2010 2:45 PM	6/7/2010 4:50 AM	0.586805556	1
SAUDI HOFUF	6/3/2010 4:20 AM	6/6/2010 6:07 AM	3.074305556	3
SYDNEY EXPRESS	6/2/2010 7:42 PM	6/3/2010 7:45 AM	0.502083333	1
WESTFALIA EXPRESS	6/2/2010 11:03 AM	6/3/2010 8:15 AM	0.883333333	1
CAP SAN RAPHAEL	6/1/2010 6:10 PM	6/2/2010 11:12 PM	1.209722222	1
NEDLLOYD HONSHU	6/1/2010 6:40 AM	6/2/2010 3:07 PM	1.352083333	1
HERO	6/1/2010 5:52 AM	6/2/2010 2:00 AM	0.838888889	1
PHILADELPHIA EXPRESS	5/31/2010 9:30 PM	6/2/2010 5:58 PM	1.852777778	2
CAP SAN AUGUSTIN	5/31/2010 5:25 PM	6/1/2010 7:15 PM	1.076388889	1
MAERSK RA:ENNA	5/31/2010 6:12 AM	5/31/2010 7:38 PM	0.559722222	0
MAERSK DANANG	5/30/2010 5:50 PM	5/31/2010 11:25 PM	1.232638889	0
BUXFA:OURITE	5/29/2010 11:00 AM	5/29/2010 11:55 PM	0.538194444	0
HORIZON CHALLENGER	5/27/2010 5:55 AM	5/27/2010 10:55 PM	0.708333333	0
NORTH SEA	5/26/2010 9:30 PM	5/28/2010 3:40 AM	1.256944444	2
BARCELONA EXPRESS	5/26/2010 8:04 PM	5/28/2010 5:06 PM	1.876388889	2
BONN EXPRESS	5/25/2010 11:38 AM	5/26/2010 5:00 AM	0.723611111	1
S/L RACER	5/25/2010 6:15 AM	5/26/2010 12:35 AM	0.763888889	1
YORKTOWN EXPRESS	5/24/2010 9:35 PM	5/26/2010 5:55 AM	1.347222222	2
SAXONIA EXPRESS	5/24/2010 1:40 PM	5/25/2010 7:22 AM	0.7375	1
MAERSK ROBAIX	5/24/2010 7:35 AM	5/24/2010 11:51 PM	0.677777778	0
MAERSK :IRGINIA	5/23/2010 6:13 PM	5/24/2010 10:13 PM	1.166666667	1
:ERACRUZ EXPRESS	5/21/2010 8:45 PM	5/23/2010 4:15 AM	1.3125	2
FREMANTLE EXPRESS	5/21/2010 1:05 PM	5/22/2010 11:05 AM	0.916666667	1
ALTAMIRA EXPRESS	5/20/2010 5:31 PM	5/21/2010 5:30 AM	0.499305556	1
ZIM SANTOS	5/19/2010 11:00 PM	5/21/2010 10:41 AM	1.486805556	2
CAP SAN ANTONIO	5/19/2010 6:47 PM	5/20/2010 6:36 PM	0.992361111	1
S/L CHAMPION	5/18/2010 6:31 AM	5/18/2010 11:15 PM	0.697222222	0
CHARLESTON EXPRESS	5/17/2010 9:17 PM	5/19/2010 5:13 PM	1.830555556	2
SANTOS EXPRESS	5/17/2010 7:50 PM	5/18/2010 11:58 PM	1.172222222	1
AURETTE A	5/17/2010 6:55 AM	5/17/2010 10:40 PM	0.65625	0
MAERSK DENPASAR	5/16/2010 6:15 PM	5/17/2010 4:27 PM	0.925	1
NORTHERN DI:ERSITY	5/14/2010 7:25 AM	5/15/2010 10:50 AM	1.142361111	1
HORIZON CHALLENGER	5/13/2010 10:25 AM	5/14/2010 1:17 PM	1.119444444	1
NORTH SEA	5/12/2010 7:13 PM	5/14/2010 1:10 AM	1.247916667	2
CSA: LONQUIMAY	5/12/2010 1:46 AM	5/13/2010 12:45 AM	0.957638889	1
LI:ORNO EXPRESS	5/11/2010 10:26 PM	5/12/2010 9:14 AM	0.45	1
SYDNEY EXPRESS	5/11/2010 8:23 AM	5/11/2010 7:15 PM	0.452777778	0

MAERSK ROTTERDAM	5/11/2010 7:02 AM	5/11/2010 8:40 PM	0.568055556	0
S/L MERCURY	5/11/2010 6:40 AM	5/12/2010 12:47 AM	0.754861111	1
WASHINGTON EXPRESS	5/10/2010 11:05 PM	5/12/2010 3:19 PM	1.676388889	2
CAP ROCA	5/10/2010 7:20 PM	5/11/2010 6:45 PM	0.975694444	1
MAERSK WISCONSIN	5/9/2010 6:40 PM	5/10/2010 9:27 PM	1.115972222	1
SAUDI ABHA	5/6/2010 7:45 AM	5/8/2010 5:10 AM	1.892361111	2
BUXFA:OURITE	5/5/2010 1:13 PM	5/5/2010 7:45 PM	0.272222222	0
GENOA EXPRESS	5/5/2010 1:02 PM	5/6/2010 12:20 PM	0.970833333	1
CAP SAN NICOLAS	5/4/2010 6:50 PM	5/5/2010 6:41 PM	0.99375	1
S/L METEOR	5/4/2010 6:00 PM	5/5/2010 9:00 AM	0.625	1
HEIDELBERG EXPRESS	5/4/2010 5:15 PM	5/5/2010 6:12 AM	0.539583333	1
ST LOUIS EXPRESS	5/4/2010 1:50 AM	5/5/2010 6:20 PM	1.6875	1
MAERSK RA:ENNA	5/3/2010 10:44 AM	5/4/2010 2:40 AM	0.663888889	1
HOLSATIA EXPRESS	5/3/2010 3:36 AM	5/4/2010 1:15 AM	0.902083333	1
MAERSK DAUPHIN	5/2/2010 6:15 PM	5/3/2010 6:11 PM	0.997222222	1
ZIM JAMAICA	4/28/2010 11:58 PM	4/29/2010 6:49 PM	0.785416667	1
NEW ORLEANS EXPRESS	4/28/2010 3:18 PM	4/29/2010 11:51 AM	0.85625	1
HORIZON CHALLENGER	4/28/2010 12:25 PM	5/1/2010 6:11 AM	2.740277778	3
LONGA:I	4/28/2010 3:40 AM	4/28/2010 8:52 PM	0.716666667	0
CAP HENRI	4/27/2010 7:15 PM	4/28/2010 7:09 PM	0.995833333	1
PHILADELPHIA EXPRESS	4/27/2010 12:28 PM	4/28/2010 1:12 PM	1.030555556	1
S/L EAGLE	4/27/2010 7:55 AM	4/28/2010 12:30 AM	0.690972222	1
MAERSK ROUBAIX	4/26/2010 6:52 AM	4/26/2010 11:35 PM	0.696527778	0
MAERSK IDAHO	4/25/2010 6:35 PM	4/27/2010 12:30 AM	1.246527778	2
YORKTOWN EXPRESS	4/22/2010 12:25 PM	4/23/2010 12:08 PM	0.988194444	1
CARIBBEAN SEA	4/21/2010 2:46 PM	4/22/2010 9:00 AM	0.759722222	1
SYDNEY EXPRESS	4/21/2010 9:50 AM	4/21/2010 8:23 PM	0.439583333	0
CAP SAN LORENZO	4/20/2010 4:56 PM	4/21/2010 4:50 PM	0.995833333	1
HERO	4/20/2010 10:50 AM	4/21/2010 5:40 AM	0.784722222	1
S/L RACER	4/20/2010 7:20 AM	4/21/2010 6:25 AM	0.961805556	1
AURETTE A	4/19/2010 2:26 PM	4/20/2010 9:20 AM	0.7875	1
SAUDI TABUK	4/19/2010 4:10 AM	4/21/2010 8:23 PM	2.675694444	2
RIO DE JANEIRO EXPRESS	4/19/2010 3:30 AM	4/20/2010 3:35 AM	1.003472222	1
MAERSK DA:AO	4/18/2010 5:40 PM	4/20/2010 12:30 AM	1.284722222	2
CHARLESTON EXPRESS	4/15/2010 9:20 AM	4/16/2010 12:15 PM	1.121527778	1
ROME EXPRESS	4/14/2010 11:25 PM	4/16/2010 12:13 AM	1.033333333	2
ZIM JAMAICA	4/14/2010 8:30 PM	4/15/2010 3:00 PM	0.770833333	1
HORIZON CHALLENGER	4/14/2010 5:36 PM	4/16/2010 12:15 PM	1.777083333	2
CAP SAN RAPHAEL	4/13/2010 7:00 PM	4/14/2010 5:56 PM	0.955555556	1
BUXFA:OURITE	4/13/2010 5:15 PM	4/14/2010 12:01 AM	0.281944444	1

BONN EXPRESS	4/13/2010 9:30 AM	4/14/2010 6:10 AM	0.861111111	1
SEALAND CHAMPION	4/13/2010 7:43 AM	4/14/2010 5:25 AM	0.904166667	1
MAERSK ROTTERDAM	4/12/2010 8:12 AM	4/12/2010 11:21 PM	0.63125	0
WESTFALIA EXPRESS	4/12/2010 6:12 AM	4/13/2010 1:00 AM	0.783333333	1
MAERSK KENTUCKY	4/11/2010 5:55 PM	4/12/2010 6:40 PM	1.03125	1
FREMANTLE EXPRESS	4/9/2010 8:49 PM	4/10/2010 7:57 AM	0.463888889	1
CARIBBEAN SEA	4/7/2010 9:48 PM	4/8/2010 5:51 PM	0.835416667	1
MSC BALI	4/7/2010 5:50 PM	4/8/2010 4:52 PM	0.959722222	1
S/L MERCURY	4/6/2010 6:30 PM	4/7/2010 5:25 PM	0.954861111	1
CAP SAN AUGUSTIN	4/6/2010 5:00 PM	4/10/2010 10:00 PM	4.208333333	4
ALTAMIRA EXPRESS	4/6/2010 11:43 AM	4/7/2010 6:49 AM	0.795833333	1
WASHINGTON EXPRESS	4/6/2010 6:25 AM	4/7/2010 6:05 PM	1.486111111	1
:ERACRUZ EXPRESS	4/5/2010 2:32 PM	4/6/2010 2:47 PM	1.010416667	1
SAXONIA EXPRESS	4/5/2010 12:52 PM	4/6/2010 8:15 AM	0.807638889	1
MAERSK DRUMMOND	4/5/2010 9:23 AM	4/6/2010 1:15 PM	1.161111111	1
ZIM JAMAICA	4/1/2010 8:20 AM	4/1/2010 7:05 PM	0.447916667	0
HORIZON CHALLENGER	4/1/2010 5:50 AM	4/2/2010 8:23 AM	1.10625	1
LI:ORNO EXPRESS	3/31/2010 12:41 AM	3/31/2010 7:00 PM	0.763194444	0
S/L METEOR	3/30/2010 6:30 PM	3/31/2010 1:35 PM	0.795138889	0
CAP SAN ANTONIO	3/30/2010 5:35 PM	3/31/2010 10:54 PM	1.221527778	0
SYDNEY EXPRESS	3/30/2010 2:00 AM	3/30/2010 5:00 PM	0.625	0
ST LOUIS EXPRESS	3/29/2010 11:25 PM	3/31/2010 6:45 PM	1.805555556	2
MAERSK ROBAIX	3/29/2010 1:12 PM	3/30/2010 7:35 AM	0.765972222	1
SANTOS EXPRESS	3/29/2010 12:27 PM	3/30/2010 7:25 PM	1.290277778	1
MAERSK WYOMING	3/28/2010 6:00 PM	3/30/2010 12:25 AM	1.267361111	2
BARCELONA EXPRESS	3/26/2010 6:39 PM	3/27/2010 5:30 PM	0.952083333	1
CARIBBEAN SEA	3/25/2010 11:55 AM	3/26/2010 6:00 AM	0.753472222	1
SAUDI DIRIYAH	3/25/2010 11:35 AM	3/28/2010 5:57 AM	2.765277778	3
COMMANDER	3/24/2010 5:50 PM	3/25/2010 12:03 PM	0.759027778	1
PHILADELPHIA EXPRESS	3/24/2010 9:50 AM	3/25/2010 5:51 PM	1.334027778	1
HEIDELBERG EXPRESS	3/23/2010 4:33 PM	3/24/2010 12:55 PM	0.848611111	1
BUXFA:OURITE	3/23/2010 12:15 PM	3/24/2010 1:28 AM	0.550694444	1
S/L EAGLE	3/23/2010 11:50 AM	3/24/2010 1:40 PM	1.076388889	1
CSA: LONQUIMAY	3/23/2010 12:30 AM	3/24/2010 4:09 AM	1.152083333	1
AURETTE A	3/22/2010 1:10 PM	3/23/2010 4:04 AM	0.620833333	1
MAERSK DANANG	3/21/2010 6:50 PM	3/23/2010 7:38 AM	1.533333333	2
ZIM JAMAICA	3/20/2010 10:45 AM	3/21/2010 1:43 AM	0.623611111	1
GENOA EXPRESS	3/19/2010 8:23 AM	3/20/2010 8:04 AM	0.986805556	1
YORKTOWN EXPRESS	3/18/2010 11:00 PM	3/20/2010 7:16 AM	1.344444444	2
FREMANTLE EXPRESS	3/18/2010 6:30 AM	3/18/2010 6:10 PM	0.486111111	0

HORIZON DISCO:ERY	3/18/2010 5:45 AM	3/19/2010 12:25 AM	0.777777778	1
NEW ORLEANS EXPRESS	3/17/2010 3:25 AM	3/18/2010 6:50 AM	1.142361111	1
SEALAND RACER	3/16/2010 6:20 PM	3/17/2010 5:10 PM	0.951388889	1
CAP SAN NICHOLAS	3/15/2010 8:55 PM	3/16/2010 11:10 PM	1.09375	1
MAERSK ROTTERDAM	3/15/2010 5:45 PM	3/16/2010 10:50 AM	0.711805556	1
HOLSATIA EXPRESS	3/15/2010 1:42 PM	3/16/2010 1:26 PM	0.988888889	1
MAERSK WISCONSIN	3/14/2010 5:45 PM	3/15/2010 11:30 PM	1.239583333	1
SYDNEY EXPRESS	3/12/2010 8:20 PM	3/13/2010 8:33 AM	0.509027778	1
CHARLESTON EXPRESS	3/12/2010 3:52 AM	3/13/2010 12:50 PM	1.373611111	1
HERO	3/12/2010 2:40 AM	3/13/2010 12:05 AM	0.892361111	1
ZIM IBERIA	3/10/2010 6:08 AM	3/13/2010 1:50 AM	2.820833333	3
S/L CHAMPION	3/9/2010 6:35 PM	3/10/2010 5:15 PM	0.944444444	1
CAP HENRI	3/9/2010 6:18 PM	3/11/2010 11:30 AM	1.716666667	2
MADRID EXPRESS	3/9/2010 7:37 AM	3/10/2010 3:13 PM	1.316666667	1
LONGA:I	3/8/2010 6:15 PM	3/9/2010 1:38 PM	0.807638889	1
DO:ER STRAIT	3/8/2010 7:53 AM	3/9/2010 1:00 AM	0.713194444	1
MAERSK DENPASAR	3/7/2010 9:10 PM	3/9/2010 8:37 AM	1.477083333	2
COPENHAGEN EXPRESS	3/4/2010 8:43 PM	3/5/2010 6:15 PM	0.897222222	1
HORIZON DISCO:ERY	3/4/2010 6:05 AM	3/5/2010 12:10 AM	0.753472222	1
ZIM JAMAICA	3/3/2010 7:42 PM	3/4/2010 11:32 PM	1.159722222	1
WASHINGTON EXPRESS	3/3/2010 12:25 PM	3/4/2010 12:55 PM	1.020833333	1
BUXFA:OURITE	3/3/2010 1:55 AM	3/3/2010 5:42 PM	0.657638889	0
CAP SAN LORENZO	3/2/2010 7:22 PM	3/3/2010 7:52 PM	1.020833333	1
SEALAND MERCURY	3/2/2010 6:10 PM	3/3/2010 7:25 PM	1.052083333	1
ROME EXPRESS	3/2/2010 7:50 AM	3/3/2010 3:20 AM	0.8125	1
MAERSK ROUBAIX	3/1/2010 6:28 PM	3/2/2010 12:05 PM	0.734027778	1
RIO DE JANEIRO EXPRESS	2/28/2010 7:11 PM	3/2/2010 1:38 AM	1.26875	2
MAERSK :IRGINIA	2/28/2010 6:40 PM	3/2/2010 6:25 AM	1.489583333	2
ALTAMIRA EXPRESS	2/25/2010 4:25 AM	2/25/2010 5:40 PM	0.552083333	0
ZIM IBERIA	2/24/2010 8:20 PM	2/26/2010 5:00 AM	1.361111111	2
ST LOUIS EXPRESS	2/24/2010 11:05 AM	2/25/2010 1:20 PM	1.09375	1
CAP SAN RAPHAEL	2/23/2010 6:50 PM	2/24/2010 7:00 PM	1.006944444	1
S/L METEOR	2/23/2010 5:45 PM	2/24/2010 6:00 PM	1.010416667	1
WESTFALIA EXPRESS	2/22/2010 9:55 PM	2/24/2010 12:09 AM	1.093055556	2
FREMANTLE EXPRESS	2/22/2010 6:30 PM	2/23/2010 3:03 AM	0.35625	1
AURETTE A	2/22/2010 4:30 PM	2/23/2010 3:20 PM	0.951388889	1
MAERSK DUNEDIN	2/22/2010 12:50 PM	2/23/2010 3:35 PM	1.114583333	1
PHILADELPHIA EXPRESS	2/20/2010 11:40 AM	2/22/2010 3:05 AM	1.642361111	2
CAP SAN AUGUSTIN	2/18/2010 8:40 PM	2/19/2010 1:18 PM	0.693055556	1
:ERACRUZ EXPRESS	2/18/2010 6:56 PM	2/19/2010 7:43 PM	1.032638889	1

SAUDI HOFUF	2/18/2010 2:32 PM	2/20/2010 12:02 PM	1.895833333	2
HORIZON DISCO:ERY	2/18/2010 6:10 AM	2/19/2010 12:45 AM	0.774305556	1
LI:ORNO EXPRESS	2/17/2010 5:08 PM	2/18/2010 7:15 AM	0.588194444	1
ZIM JAMAICA	2/17/2010 12:38 PM	2/18/2010 10:25 AM	0.907638889	1
SEALAND EAGLE	2/17/2010 7:04 AM	2/18/2010 2:35 AM	0.813194444	1
SYDNEY EXPRESS	2/15/2010 5:05 PM	2/17/2010 10:05 PM	2.208333333	2
MAERSK ROTTERDAM	2/15/2010 2:41 PM	2/17/2010 5:24 PM	2.113194444	2
SAXONIA EXPRESS	2/15/2010 2:00 PM	2/16/2010 6:18 PM	1.179166667	1
MAERSK IDAHO	2/15/2010 12:19 PM	2/16/2010 7:49 PM	1.3125	1
ZIM IBERIA	2/11/2010 5:57 AM	2/11/2010 11:05 PM	0.713888889	0
CAP SAN ANTONIO	2/10/2010 7:03 PM	2/11/2010 2:49 PM	0.823611111	1
BARCELONA EXPRESS	2/9/2010 11:05 PM	2/10/2010 5:45 PM	0.777777778	1
YORKTOWN EXPRESS	2/9/2010 4:07 PM	2/10/2010 10:10 AM	0.752083333	1
BUXFA:OURITE	2/8/2010 2:03 PM	2/9/2010 7:35 AM	0.730555556	1
SEALAND RACER	2/8/2010 8:19 AM	2/10/2010 6:25 AM	1.920833333	2
DO:ER STRAIT	2/8/2010 7:34 AM	2/9/2010 9:05 AM	1.063194444	1
SANTOS EXPRESS	2/8/2010 5:50 AM	2/9/2010 3:00 AM	0.881944444	1
GOTHENBURG EXPRESS	2/8/2010 5:25 AM	2/9/2010 9:34 PM	1.672916667	1
MAERSK DA:AO	2/7/2010 7:58 PM	2/9/2010 3:20 AM	1.306944444	2
HORIZON DISCO:ERY	2/5/2010 4:55 AM	2/5/2010 8:21 PM	0.643055556	0
ZIM JAMAICA	2/4/2010 5:00 PM	2/5/2010 10:43 AM	0.738194444	1
NEW ORLEANS EXPRESS	2/3/2010 5:21 PM	2/4/2010 7:59 PM	1.109722222	1
CHARLESTON EXPRESS	2/3/2010 2:20 AM	2/4/2010 10:23 AM	1.335416667	1
S/L CHAMPION	2/2/2010 7:30 AM	2/3/2010 1:25 AM	0.746527778	1
YORKTOWN EXPRESS	2/2/2010 5:10 AM	2/3/2010 7:40 PM	1.604166667	1
GENOA EXPRESS	2/1/2010 9:33 PM	2/3/2010 7:17 AM	1.405555556	2
CSA: LONQUIMAY	2/1/2010 8:15 PM	2/3/2010 4:00 AM	1.322916667	2
CAP ROCA	2/1/2010 7:45 PM	2/3/2010 12:03 AM	1.179166667	2
MAERSK ROUBAIX	2/1/2010 3:30 PM	2/2/2010 6:14 AM	0.613888889	1
MAERSK KENTUCKY	1/30/2010 6:12 AM	2/2/2010 12:25 AM	2.759027778	2
ZIM IBERIA	1/30/2010 6:12 AM	1/31/2010 5:06 AM	0.954166667	0
FREMANTLE EPRESS	1/29/2010 4:02 PM	1/30/2010 7:07 AM	0.628472222	1
HERO	1/28/2010 10:00 PM	1/29/2010 8:05 PM	0.920138889	1
PROGRESO	1/28/2010 8:57 AM	1/28/2010 3:15 PM	0.2625	0
SAUDI ABHA	1/28/2010 6:40 AM	1/30/2010 9:00 PM	2.597222222	2
S/L MERCURY	1/27/2010 6:22 AM	1/28/2010 2:47 AM	0.850694444	1
CHARLESTON EXPRESS	1/26/2010 11:20 PM	1/27/2010 7:30 PM	0.840277778	1
WASHINGTON EXPRESS	1/26/2010 4:07 PM	1/27/2010 7:43 AM	0.65	1
AURETTE A	1/25/2010 7:14 PM	1/26/2010 7:20 PM	1.004166667	1
MAERSK DRUMMOND	1/25/2010 12:23 PM	1/26/2010 7:42 PM	1.304861111	1

CAP SAN NICOLAS	1/25/2010 4:55 AM	1/26/2010 1:18 AM	0.849305556	1
HOLSATIA EXPRESS	1/24/2010 10:30 PM	1/26/2010 7:10 AM	1.361111111	2
MADRID EXPRESS	1/22/2010 4:03 PM	1/23/2010 2:05 PM	0.918055556	1
SYDNEY EXPRESS	1/22/2010 12:44 AM	1/25/2010 5:45 AM	3.209027778	3
HORIZON DISCO:ERY	1/21/2010 11:05 PM	1/22/2010 11:30 PM	1.017361111	1
ZIM JAMAICA	1/21/2010 1:34 AM	1/23/2010 5:35 AM	2.167361111	2
ST LOUIS EXPRESS	1/19/2010 6:50 PM	1/21/2010 10:40 AM	1.659722222	2
WASHINGTON EXPRESS	1/19/2010 12:49 PM	1/21/2010 7:18 AM	1.770138889	2
COPENHAGEN EXPRESS	1/19/2010 7:40 AM	1/21/2010 7:50 AM	2.006944444	2
CAP HENRI	1/19/2010 6:15 AM	1/21/2010 11:52 AM	2.234027778	2
S/L METEOR	1/19/2010 5:40 AM	1/21/2010 1:27 PM	2.324305556	2
MAERSK ROTTERDAM	1/18/2010 8:00 AM	1/18/2010 11:59 PM	0.665972222	0
LONGA:I	1/18/2010 7:04 AM	1/19/2010 9:40 AM	1.108333333	1
MAERSK WYOMING	1/17/2010 7:45 PM	1/19/2010 1:02 AM	1.220138889	2
BUXFA:OURITE	1/17/2010 12:11 PM	1/18/2010 12:10 AM	0.499305556	1
PHILADELPHIA EXPRESS	1/15/2010 5:45 PM	1/16/2010 12:39 PM	0.7875	1
ROME EXPRESS	1/15/2010 1:36 AM	1/16/2010 6:59 AM	1.224305556	1
ALTAMIRA EXPRESS	1/14/2010 5:25 PM	1/15/2010 7:15 AM	0.576388889	1
ZIM IBERIA	1/14/2010 11:50 AM	1/15/2010 11:25 AM	0.982638889	1
ST LOUIS EXPRESS	1/13/2010 6:10 AM	1/13/2010 8:12 PM	0.584722222	0
S/L EAGLE	1/12/2010 5:40 PM	1/13/2010 12:48 PM	0.797222222	1
RIO DE JANEIRO EXP	1/12/2010 1:30 PM	1/13/2010 1:15 PM	0.989583333	1
CAP SAN LORENZO	1/11/2010 6:15 PM	1/12/2010 6:30 PM	1.010416667	1
DO:ER STRAIT	1/11/2010 7:30 AM	1/11/2010 11:04 PM	0.648611111	0
MAERSK DANANG	1/10/2010 9:35 PM	1/11/2010 6:55 PM	0.888888889	1
MAERSK DHAKA	1/7/2010 6:25 PM	1/8/2010 11:30 PM	1.211805556	1
FREMANTLE EPRESS	1/7/2010 1:15 PM	1/8/2010 3:55 AM	0.611111111	1
ZIM JAMAICA	1/7/2010 9:25 AM	1/8/2010 8:11 AM	0.948611111	1
HORIZON DISCO:ERY	1/7/2010 6:33 AM	1/8/2010 12:14 AM	0.736805556	1
PHILADELPHIA EXPRESS	1/7/2010 5:03 AM	1/8/2010 12:00 PM	1.289583333	1
S/L RACER	1/6/2010 12:48 AM	1/6/2010 8:09 PM	0.80625	0
:ERACRUZ EXPRESS	1/5/2010 6:50 PM	1/6/2010 12:05 PM	0.71875	1
LI:ORNO EXPRESS	1/5/2010 12:09 PM	1/6/2010 7:38 AM	0.811805556	1
SAUDI TABUK	1/4/2010 2:37 PM	1/7/2010 12:08 AM	2.396527778	3
MAERSK ROUBAIX	1/4/2010 11:06 AM	1/4/2010 11:30 PM	0.516666667	0
WESTFALIA EXPRESS	1/4/2010 6:03 AM	1/5/2010 1:48 AM	0.822916667	1
ZIM IBERIA	1/1/2010 3:00 PM	1/2/2010 11:11 AM	0.840972222	1
MAERSK WISCONSIN	1/1/2010 3:10 AM	1/2/2010 1:55 AM	0.947916667	1
CAP SAN RAPHAEL	12/30/2009 7:10 PM	12/31/2009 11:50 PM	1.194444444	0
SYDNEY EXPRESS	12/30/2009 9:10 AM	12/30/2009 7:30 PM	0.430555556	0

YORKTOWN EXPRESS	12/30/2009 7:20 AM	12/31/2009 8:55 PM	1.565972222	0
S/L CHAMPION	12/30/2009 5:50 AM	12/31/2009 12:10 AM	0.763888889	0
GOTHENBURG EXPRESS	12/29/2009 4:36 PM	12/30/2009 1:30 PM	0.870833333	1
AURETTE A	12/28/2009 6:05 AM	12/28/2009 8:00 PM	0.579861111	0
SAXONIA EXPRESS	12/27/2009 7:40 PM	12/29/2009 1:25 AM	1.239583333	2
BUXFA:OURITE	12/26/2009 7:05 PM	12/27/2009 1:00 AM	0.246527778	1
BARCELONA EXPRESS	12/25/2009 8:20 PM	12/27/2009 12:15 AM	1.163194444	2
ZIM JAMAICA	12/25/2009 6:10 PM	12/27/2009 6:00 AM	1.493055556	2
MAERSK ROTTERDAM	12/24/2009 5:44 AM	12/24/2009 2:15 PM	0.354861111	0
HORIZON DISCO:ERY	12/23/2009 9:40 AM	12/24/2009 2:25 AM	0.697916667	1
MAERSK DRISCOLL	12/23/2009 5:12 AM	12/25/2009 6:20 AM	2.047222222	2
CHARLESTON EXPRESS	12/22/2009 6:56 PM	12/23/2009 6:30 PM	0.981944444	1
CAP SAN AUGUSTIN	12/22/2009 5:08 PM	12/24/2009 5:27 PM	2.013194444	2
NEW ORLEANS EXPRESS	12/22/2009 9:20 AM	12/23/2009 12:04 AM	0.613888889	1
S/L MERCURY	12/22/2009 4:25 AM	12/23/2009 12:47 AM	0.848611111	1
SANTOS EXPRESS	12/20/2009 7:40 PM	12/22/2009 10:14 AM	1.606944444	2
FREMANTLE EXPRESS	12/18/2009 6:30 PM	12/19/2009 8:04 AM	0.565277778	1
CAP SAN ANTONIO	12/17/2009 7:45 PM	12/17/2009 11:14 PM	0.145138889	0
MAERSK UTAH	12/17/2009 6:30 PM	12/18/2009 1:46 PM	0.802777778	1
GENOA EXPRESS	12/17/2009 10:18 AM	12/18/2009 9:02 AM	0.947222222	1
ZIM IBERIA	12/17/2009 8:45 AM	12/18/2009 7:01 AM	0.927777778	1
SAUDI DIRIYAH	12/16/2009 4:30 PM	12/19/2009 7:00 PM	3.104166667	3
HERO	12/16/2009 2:40 PM	12/17/2009 9:45 AM	0.795138889	1
WASHINGTON EXPRESS	12/16/2009 9:42 AM	12/17/2009 5:55 AM	0.842361111	1
DO:ER STRAIT	12/16/2009 8:10 AM	12/17/2009 2:45 AM	0.774305556	1
S/L METEOR	12/16/2009 6:42 AM	12/17/2009 1:27 PM	1.28125	1
CSA: LONQUIMAY	12/15/2009 10:05 PM	12/17/2009 12:25 AM	1.097222222	2
ZIM JAMAICA	12/11/2009 1:05 AM	12/12/2009 2:00 AM	1.038194444	1
CAP ROCA	12/10/2009 8:48 PM	12/11/2009 7:20 PM	0.938888889	1
MAERSK DUNEDIN	12/10/2009 11:04 AM	12/12/2009 12:25 AM	1.55625	2
HOLSATIA EXPRESS	12/8/2009 9:13 PM	12/10/2009 12:24 PM	1.632638889	2
HORIZON DISCO:ERY	12/8/2009 9:00 PM	12/15/2009 1:35 PM	6.690972222	7
COPENHAGEN EXPRESS	12/8/2009 6:01 PM	12/10/2009 9:35 AM	1.648611111	2
SYDNEY EXPRESS	12/8/2009 1:45 PM	12/10/2009 2:48 AM	1.54375	2
S/L EAGLE	12/8/2009 12:30 PM	12/10/2009 7:38 AM	1.797222222	2
ST. LOUIS EXPRESS	12/7/2009 9:15 PM	12/9/2009 4:02 PM	1.782638889	2
MAERSK ROUBAIX	12/7/2009 6:08 PM	12/8/2009 10:30 PM	1.181944444	1
ZIM IBERIA	12/3/2009 1:50 PM	12/4/2009 10:35 AM	0.864583333	1
CAP SAN NICOLAS	12/2/2009 8:40 PM	12/4/2009 1:00 AM	1.180555556	2
ALTAMIRA EXPRESS	12/2/2009 7:25 PM	12/3/2009 12:10 PM	0.697916667	1

MAERSK IDAHO	12/2/2009 5:49 AM	12/4/2009 12:12 AM	1.765972222	2
PHILADELPHIA EXPRESS	12/1/2009 6:40 PM	12/2/2009 6:50 PM	1.006944444	1
MADRID EXPRESS	12/1/2009 7:42 PM	12/8/2009 9:54 PM	7.091666667	7
AURETTE A	11/30/2009 6:00 AM	11/30/2009 6:18 PM	0.5125	0
:ALDI:IA	11/29/2009 10:15 PM	11/30/2009 6:17 PM	0.834722222	1
PEMBROKE	11/29/2009 7:55 PM	11/30/2009 7:58 PM	1.002083333	1
LONGA:I	11/29/2009 7:15 PM	12/1/2009 8:23 AM	1.547222222	2
MAERSK DA:AO	11/25/2009 11:50 AM	11/26/2009 5:40 PM	1.243055556	1
ZIM JAMAICA	11/25/2009 9:50 AM	11/26/2009 2:23 AM	0.689583333	1
HORIZON DISCO:ERY	11/25/2009 6:24 AM	11/26/2009 2:47 AM	0.849305556	1
FREEMANTLE EXPRESS	11/25/2009 1:30 AM	11/25/2009 7:10 PM	0.736111111	0
LI:ORNO EXPRESS	11/24/2009 10:05 AM	11/25/2009 7:00 AM	0.871527778	1
S/L CHAMPION	11/24/2009 6:03 AM	11/25/2009 6:42 AM	1.027083333	1
YORKTOWN EXPRESS	11/23/2009 10:50 PM	11/25/2009 3:53 PM	1.710416667	2
CAP HERNI	11/23/2009 7:35 PM	11/24/2009 11:11 PM	1.15	1
MAERSK ROTTERDAM	11/23/2009 11:16 AM	11/23/2009 8:05 PM	0.367361111	0
RIO DE JANEIRO EXPRESS	11/22/2009 8:56 PM	11/24/2009 6:25 AM	1.395138889	2
:ERACRUZ EXPRESS	11/20/2009 7:15 AM	11/21/2009 1:07 AM	0.744444444	1
ZIM IBERIA	11/19/2009 5:33 PM	11/20/2009 5:30 PM	0.997916667	1
CAP SAN LORENZO	11/18/2009 4:53 PM	11/19/2009 9:00 PM	1.171527778	1
MAERSK KENTUCKY	11/18/2009 12:14 PM	11/19/2009 7:00 PM	1.281944444	1
GOTHENBURG EXPRESS	11/17/2009 9:42 PM	11/18/2009 7:00 PM	0.8875	1
CHARLESTON EXPRESS	11/17/2009 12:05 PM	11/18/2009 4:55 PM	1.201388889	1
SEALAND MERCURY	11/17/2009 7:00 AM	11/18/2009 7:55 AM	1.038194444	1
DO:ER STRAIT	11/16/2009 11:30 PM	11/17/2009 12:10 PM	0.527777778	1
SYDNEY EXPRESS	11/16/2009 6:23 PM	11/17/2009 3:05 PM	0.8625	1
WESTFALIA EXPRESS	11/15/2009 8:50 PM	11/18/2009 12:22 PM	2.647222222	3
ZIM JAMAICA	11/13/2009 11:33 AM	11/14/2009 5:07 AM	0.731944444	1
CAP SAN RAPHAEL	11/12/2009 6:23 PM	11/13/2009 11:27 PM	1.211111111	1
BARCELONA EXPRESS	11/12/2009 9:12 AM	11/13/2009 12:58 AM	0.656944444	1
HORIZON DISCO:ERY	11/11/2009 2:30 PM	11/13/2009 7:16 PM	2.198611111	2
MAERSK DRUMMOND	11/11/2009 12:19 PM	11/12/2009 10:12 PM	1.411805556	1
NEW ORLEANS EXPRESS	11/11/2009 2:25 AM	11/11/2009 7:06 PM	0.695138889	0
SAUDI HOFUF	11/10/2009 6:51 PM	11/13/2009 5:00 PM	2.922916667	3
S/L METEOR	11/10/2009 6:15 AM	11/11/2009 6:53 AM	1.026388889	1
WASHINGTON EXPRESS	11/9/2009 7:25 PM	11/11/2009 5:11 PM	1.906944444	2
:ALDI:IA	11/9/2009 3:25 PM	11/10/2009 5:51 AM	0.601388889	1
SAXONIA EXPRESS	11/9/2009 2:04 PM	11/10/2009 7:40 AM	0.733333333	1
ZIM IBERIA	11/6/2009 4:05 PM	11/7/2009 11:55 AM	0.826388889	1
CAP SAN AUGUSTIN	11/5/2009 7:10 PM	11/6/2009 6:12 PM	0.959722222	1

MAERSK WYOMING	11/4/2009 3:05 PM	11/6/2009 2:40 AM	1.482638889	2
HERO	11/4/2009 2:25 PM	11/5/2009 6:15 AM	0.659722222	1
S/L EAGLE	11/3/2009 6:01 AM	11/4/2009 7:43 AM	1.070833333	1
ST LOUIS EXPRESS	11/2/2009 10:48 PM	11/4/2009 6:55 PM	1.838194444	2
AURETTE A	11/2/2009 11:20 AM	11/2/2009 11:12 PM	0.494444444	0
GENOA EXPRESS	11/2/2009 10:40 AM	11/3/2009 7:00 AM	0.847222222	1
SANTOS EXPRESS	11/2/2009 10:40 AM	11/3/2009 7:40 AM	0.875	1
FREEMANTLE EXPRESS	11/2/2009 8:05 AM	11/2/2009 9:14 PM	0.547916667	0
CAP SAN ANTONIO	10/29/2009 3:33 PM	10/30/2009 5:53 PM	1.097222222	1
HORIZON DISCO:ERY	10/29/2009 5:50 AM	10/30/2009 7:01 PM	1.549305556	1
ZIM JAMAICA	10/28/2009 6:22 PM	10/29/2009 6:16 PM	0.995833333	1
MAERSK DHAKA	10/28/2009 12:15 PM	10/30/2009 6:05 AM	1.743055556	2
PROGRESO	10/28/2009 5:30 AM	10/28/2009 2:50 PM	0.388888889	0
PHILADELPHIA EXPRESS	10/26/2009 11:10 PM	10/28/2009 4:41 PM	1.729861111	2
S/L RACER	10/26/2009 9:40 PM	10/28/2009 6:20 AM	1.361111111	2
COPENHAGEN EXPRESS	10/26/2009 7:30 PM	10/27/2009 11:20 PM	1.159722222	1
CSA: LONQUIMAY	10/26/2009 3:10 PM	10/27/2009 12:55 PM	0.90625	1
MAERSK ROTTERDAM	10/26/2009 11:23 AM	10/26/2009 11:15 PM	0.494444444	0
SYDNEY EXPRESS	10/26/2009 8:05 AM	10/26/2009 7:45 PM	0.486111111	0
MADRID EXPRESS	10/23/2009 7:55 PM	10/25/2009 5:08 AM	1.384027778	2
ZIM CANADA	10/21/2009 2:30 PM	10/22/2009 2:20 PM	0.993055556	1
MAERSK WISCONSIN	10/21/2009 12:35 PM	10/22/2009 7:00 PM	1.267361111	1
SAUDI ABHA	10/21/2009 6:20 AM	10/23/2009 4:10 PM	2.409722222	2
CAP ROCA	10/20/2009 8:00 PM	10/22/2009 12:15 AM	1.177083333	2
ALTAMIRA EXPRESS	10/20/2009 4:20 PM	10/21/2009 1:00 PM	0.861111111	1
S/L CHAMPION	10/20/2009 5:37 AM	10/21/2009 6:55 AM	1.054166667	1
YORKTOWN EXPRESS	10/19/2009 8:40 PM	10/21/2009 6:00 PM	1.888888889	2
HOLSATIA EXPRESS	10/19/2009 6:40 PM	10/20/2009 12:40 PM	0.75	1
MAERSK RA:ENNA	10/19/2009 12:20 PM	10/20/2009 2:48 AM	0.602777778	1
:ALDI:IA	10/19/2009 4:53 AM	10/19/2009 5:50 PM	0.539583333	0
ROME EXPRESS	10/15/2009 7:03 PM	10/17/2009 1:09 AM	1.254166667	2
HORIZON DISCO:ERY	10/15/2009 6:25 AM	10/16/2009 8:15 AM	1.076388889	1
CAP SAN NICOLAS	10/14/2009 7:20 PM	10/16/2009 2:13 AM	1.286805556	2
ZIM JAMAICA	10/14/2009 5:10 PM	10/15/2009 6:25 PM	1.052083333	1
MAERSK DRISCOLL	10/14/2009 12:15 PM	10/16/2009 12:09 AM	1.495833333	2
S/L MERCURY	10/13/2009 5:55 AM	10/14/2009 10:15 AM	1.180555556	1
LI:ORNO EXPRESS	10/12/2009 11:40 PM	10/14/2009 12:20 AM	1.027777778	2
CHARLESTON EXPRESS	10/12/2009 9:33 PM	10/14/2009 5:00 PM	1.810416667	2
LONGA:I	10/12/2009 7:39 PM	10/13/2009 10:07 AM	0.602777778	1
FREEMANTLE EXPRESS	10/12/2009 11:10 AM	10/12/2009 10:25 PM	0.46875	0

MAERSK ROUBAIX	10/12/2009 5:16 AM	10/12/2009 11:15 PM	0.749305556	0
ZIM CANADA	10/8/2009 12:10 AM	10/8/2009 8:16 PM	0.8375	0
CAP HENRI	10/7/2009 7:35 PM	10/8/2009 7:34 PM	0.999305556	1
MAERSK UTAH	10/7/2009 12:55 PM	10/8/2009 7:53 PM	1.290277778	1
SYDNEY EXPRESS	10/6/2009 1:03 PM	10/7/2009 7:33 AM	0.770833333	1
GOTHENBURG EXPRESS	10/6/2009 6:12 AM	10/6/2009 7:11 PM	0.540972222	0
S/L METEOR	10/6/2009 6:00 AM	10/7/2009 6:50 AM	1.034722222	1
WASHINGTON EXPRESS	10/5/2009 9:46 PM	10/7/2009 5:13 PM	1.810416667	2
:ERACRUZ EXPRESS	10/5/2009 9:14 PM	10/6/2009 8:19 PM	0.961805556	1
AURETTE A	10/5/2009 5:58 AM	10/6/2009 1:56 AM	0.831944444	1
RIO DE JANEIRO EXPRESS	10/4/2009 7:30 PM	10/6/2009 2:50 AM	1.305555556	2
ZIM JAMAICA	10/1/2009 11:05 AM	10/2/2009 10:40 AM	0.982638889	1
HORIZON DISCO:ERY	10/1/2009 5:50 AM	10/2/2009 9:20 AM	1.145833333	1
CORONA J	9/30/2009 9:15 PM	10/1/2009 9:05 PM	0.993055556	1
MAERSK DUNEDIN	9/30/2009 5:50 PM	10/2/2009 1:43 AM	1.328472222	2
SAUDI TABUK	9/30/2009 4:50 PM	10/3/2009 6:58 PM	3.088888889	3
NEW ORLEANS EXPRESS	9/30/2009 10:40 AM	10/1/2009 6:17 AM	0.817361111	1
CAP SAN LORENZO	9/29/2009 6:15 PM	10/1/2009 1:15 AM	1.291666667	2
S/L EAGLE	9/29/2009 6:30 AM	9/30/2009 12:05 PM	1.232638889	1
MAERSK ROTTERDAM	9/29/2009 5:19 AM	9/30/2009 7:25 AM	1.0875	1
WESTFALIA EXPRESS	9/29/2009 1:18 AM	9/30/2009 8:00 AM	1.279166667	1
ST LOUIS EPXRESS	9/28/2009 7:35 PM	9/30/2009 5:15 PM	1.902777778	2
:ALDI:IA	9/28/2009 4:00 PM	9/29/2009 7:20 AM	0.638888889	1
BARCELONA EXPRESS	9/28/2009 5:53 AM	9/29/2009 1:16 AM	0.807638889	1
ZIM CANADA	9/23/2009 6:26 PM	9/24/2009 5:40 PM	0.968055556	1
MAERSK IDAHO	9/23/2009 12:45 PM	9/24/2009 6:00 PM	1.21875	1
S/L RACER	9/22/2009 6:40 AM	9/23/2009 8:03 AM	1.057638889	1
PHILADELPHIA EXPRESS	9/22/2009 5:20 AM	9/23/2009 5:38 PM	1.5125	1
HERO	9/22/2009 4:58 AM	9/22/2009 8:11 PM	0.634027778	0
CAP SAN RAPHAEL	9/21/2009 6:30 PM	9/23/2009 1:35 AM	1.295138889	2
FREEMANTLE EXPRESS	9/21/2009 12:45 PM	9/22/2009 12:10 AM	0.475694444	1
BALKAN	9/21/2009 6:32 AM	9/22/2009 10:50 PM	1.679166667	1
SAXONIA EXPRESS	9/20/2009 7:02 PM	9/22/2009 1:00 AM	1.248611111	2
GENOA EXPRESS	9/17/2009 7:30 PM	9/19/2009 4:08 AM	1.359722222	2
HORIZON DISCO:ERY	9/17/2009 6:27 AM	9/19/2009 12:03 AM	1.733333333	2
ZIM JAMAICA	9/16/2009 12:20 PM	9/17/2009 7:30 PM	1.298611111	1
MAERSK DOUALA	9/16/2009 12:15 PM	9/17/2009 6:50 PM	1.274305556	1
SYDNEY EXPRESS	9/15/2009 5:40 PM	9/16/2009 1:45 AM	0.336805556	1
S/L CHAMPION	9/15/2009 6:00 AM	9/16/2009 5:25 AM	0.975694444	1
SANTOS EXPRESS	9/14/2009 9:55 PM	9/16/2009 8:55 AM	1.458333333	2

YORKTOWN EXPRESS	9/14/2009 9:35 PM	9/16/2009 5:52 PM	1.845138889	2
COPENHAGEN EXPRESS	9/14/2009 7:05 PM	9/16/2009 6:15 AM	1.465277778	2
MAERSK ROUBAIX	9/14/2009 6:07 AM	9/15/2009 7:40 PM	1.564583333	1
CAP SAN AUGUSTIN	9/14/2009 5:30 AM	9/15/2009 12:55 PM	1.309027778	1
ZIM CANADA	9/10/2009 10:52 AM	9/12/2009 10:00 AM	1.963888889	2
MADRID EXPRESS	9/9/2009 7:52 PM	9/10/2009 1:30 PM	0.734722222	1
MAERSK KENTUCKY	9/9/2009 12:50 PM	9/10/2009 7:41 PM	1.285416667	1
CSA: LONQUIMAY	9/9/2009 4:50 AM	9/10/2009 1:30 AM	0.861111111	1
S/L MERCURY	9/8/2009 6:20 AM	9/9/2009 5:42 AM	0.973611111	1
AURETTE A	9/8/2009 5:20 AM	9/9/2009 9:20 AM	1.166666667	1
CHARLESTON EXPRESS	9/7/2009 10:15 PM	9/9/2009 5:24 PM	1.797916667	2
ALTAMIRA EXPRESS	9/7/2009 7:24 PM	9/9/2009 12:13 AM	1.200694444	2
SAUDI DIRIYAH	9/7/2009 11:36 AM	9/9/2009 7:31 PM	2.329861111	2
CAP SAN ANTONIO	9/7/2009 8:45 PM	9/9/2009 7:15 AM	1.4375	2
:ALDI:IA	9/6/2009 1:10 PM	9/6/2009 11:59 PM	0.450694444	0
CAP SAN MARCO	9/2/2009 7:29 PM	9/4/2009 12:27 AM	1.206944444	2
MAERSK DRUMMOND	9/2/2009 2:40 PM	9/3/2009 11:49 PM	1.38125	1
ZIM JAMAICA	9/2/2009 1:55 PM	9/3/2009 1:55 PM	1	1
HORIZON DISCO:ERY	9/2/2009 6:57 AM	9/4/2009 11:19 PM	2.681944444	2
FREMANTLE EXPRESS	9/1/2009 8:30 AM	9/2/2009 12:17 AM	0.657638889	1
S/L METEOR	9/1/2009 6:20 AM	9/2/2009 12:27 PM	1.254861111	1
ROME EXPRESS	9/1/2009 5:27 AM	9/2/2009 12:06 PM	1.277083333	1
LI:ORNO EXPRESS	8/31/2009 11:05 PM	9/1/2009 7:02 PM	0.83125	1
WASHINGTON EXPRESS	8/31/2009 5:50 PM	9/2/2009 2:40 PM	1.868055556	2
DO:ER STRAIT	8/31/2009 6:13 AM	9/1/2009 11:36 PM	1.724305556	1
HOLSATIA EXPRESS	8/30/2009 9:35 PM	8/31/2009 7:12 PM	0.900694444	0
LONGA:I	8/29/2009 9:15 AM	8/30/2009 7:33 AM	0.929166667	1
ZIM CANADA	8/26/2009 6:25 PM	8/27/2009 5:03 PM	0.943055556	1
MAERSK WYOMING	8/26/2009 11:50 AM	8/27/2009 11:50 PM	1.5	1
S/L EAGLE	8/25/2009 6:31 AM	8/26/2009 6:30 AM	0.999305556	1
GOTHENBURG EXPRESS	8/24/2009 11:30 PM	8/25/2009 9:01 PM	0.896527778	1
SYDNEY EXPRESS	8/24/2009 7:47 PM	8/25/2009 8:30 PM	1.029861111	1
ST LOUIS EXPRESS	8/24/2009 7:27 PM	8/26/2009 8:30 PM	2.04375	2
CAP SAN NICOLAS	8/24/2009 5:26 PM	8/26/2009 12:30 AM	1.294444444	2
HS SCOTT	8/24/2009 9:35 AM	8/24/2009 8:13 PM	0.443055556	0
PETKUM	8/24/2009 6:47 AM	8/25/2009 11:55 PM	1.713888889	1
:ERACRUZ EXPRESS	8/21/2009 1:50 AM	8/22/2009 5:25 AM	1.149305556	1
HORIZON DISCO:ERY	8/20/2009 6:08 AM	8/22/2009 1:06 AM	1.790277778	2
ZIM JAMAICA	8/19/2009 6:07 PM	8/20/2009 6:50 PM	1.029861111	1
MAERSK DHAKA	8/19/2009 11:45 AM	8/20/2009 12:40 PM	1.038194444	1

S/L RACER	8/18/2009 7:15 AM	8/19/2009 6:50 AM	0.982638889	1
MAERSK ROUBAIX	8/18/2009 5:30 AM	8/18/2009 11:33 PM	0.752083333	0
PHILADEPHIA EXPRESS	8/18/2009 5:30 AM	8/19/2009 3:08 PM	1.401388889	1
NEW ORLEANS EXPRESS	8/18/2009 5:30 AM	8/19/2009 5:11 AM	0.986805556	1
CAP HENRI	8/18/2009 4:30 AM	8/19/2009 1:13 PM	1.363194444	1
:ALDI:IA	8/17/2009 10:45 AM	8/17/2009 10:15 PM	0.479166667	0
RIO DE JANEIRO EXPRESS	8/16/2009 10:40 PM	8/18/2009 2:05 PM	1.642361111	2
BARCELONA EXPRESS	8/13/2009 7:00 AM	8/14/2009 5:25 AM	0.934027778	1
ZIM CANADA	8/12/2009 6:30 PM	8/13/2009 7:00 PM	1.020833333	1
MAERSK WISCONSIN	8/12/2009 12:35 PM	8/13/2009 7:45 PM	1.298611111	1
CAP SAN LORENZO	8/11/2009 7:00 PM	8/12/2009 6:55 PM	0.996527778	1
S/L CHAMPION	8/11/2009 6:15 AM	8/12/2009 7:35 AM	1.055555556	1
YORKTOWN EXPRESS	8/11/2009 4:11 AM	8/12/2009 6:10 PM	1.582638889	1
AURETTE A	8/10/2009 10:50 PM	8/11/2009 10:20 PM	0.979166667	1
HERO	8/10/2009 9:25 PM	8/11/2009 7:15 PM	0.909722222	1
FREMANTLE EXPRESS	8/10/2009 5:15 PM	8/11/2009 12:21 PM	0.795833333	1
CCNI ROTTERDAM	8/10/2009 4:55 AM	8/10/2009 8:15 PM	0.638888889	0
WESTFALIA EXPRESS	8/9/2009 7:33 PM	8/11/2009 1:25 AM	1.244444444	2
HORIZON DISCO:ERY	8/6/2009 9:16 AM	8/8/2009 12:13 AM	1.622916667	2
ZIM JAMAICA	8/5/2009 5:41 PM	8/6/2009 8:00 PM	1.096527778	1
CAP SAN RAPHAEL	8/5/2009 5:40 PM	8/6/2009 1:30 AM	0.326388889	1
MAERSK DRISCOLL	8/5/2009 2:00 PM	8/6/2009 7:47 PM	1.240972222	1
COPENHAGEN EXPRESS	8/5/2009 3:30 AM	8/5/2009 5:16 PM	0.573611111	0
S/L MERCURY	8/4/2009 5:58 AM	8/5/2009 6:55 AM	1.039583333	1
CSA: :ENEZUELA	8/3/2009 11:00 PM	8/5/2009 12:57 AM	1.08125	2
CHARLESTON EXPRESS	8/3/2009 9:40 PM	8/5/2009 5:25 PM	1.822916667	2
GENOA EXPRESS	8/3/2009 8:57 PM	8/5/2009 1:00 AM	1.16875	2
SYDNEY EXPRESS	8/3/2009 8:47 AM	8/3/2009 8:20 PM	0.48125	0
DO:ER STRAIT	8/3/2009 6:10 AM	8/4/2009 11:17 PM	1.713194444	1
SAUDI HOFUF	8/2/2009 9:15 PM	8/4/2009 2:58 PM	1.738194444	2
SAXONIA EXPRESS	8/2/2009 5:30 PM	8/3/2009 5:26 PM	0.997222222	1
ZIM CANADA	7/29/2009 6:58 PM	7/30/2009 6:00 PM	0.959722222	1
MAERSK UTAH	7/29/2009 3:55 PM	7/31/2009 11:15 AM	1.805555556	2
S/L METEOR	7/28/2009 5:53 AM	7/29/2009 11:05 AM	1.216666667	1
ALTAMIRA EXPRESS	7/28/2009 3:50 AM	7/29/2009 9:50 PM	1.75	1
CAP SAN AGUSTIN	7/28/2009 2:50 AM	7/29/2009 8:20 AM	1.229166667	1
WASHINGTON EXPRESS	7/27/2009 11:00 PM	7/29/2009 2:15 PM	1.635416667	2
:ALDI:IA	7/27/2009 9:25 AM	7/28/2009 2:02 AM	0.692361111	1
RICKMER RICKMERS	7/27/2009 7:07 AM	7/28/2009 6:27 AM	0.972222222	1
PETKUM	7/27/2009 6:10 AM	7/28/2009 8:15 PM	1.586805556	1

SANTOS EXPRESS	7/26/2009 6:00 PM	7/27/2009 6:00 PM	1	1
MADRID EXPRESS	7/26/2009 5:25 PM	7/27/2009 6:50 PM	1.059027778	1
HORIZON DISCO:ERY	7/23/2009 6:42 AM	7/25/2009 12:05 AM	1.724305556	2
ZIM JAMAICA	7/22/2009 6:25 PM	7/23/2009 7:25 PM	1.041666667	1
MAERSK DUNEDIN	7/22/2009 12:05 PM	7/23/2009 6:07 PM	1.251388889	1
S/L EAGLE	7/21/2009 5:40 AM	7/22/2009 10:05 AM	1.184027778	1
LI:ORNO EXPRESS	7/21/2009 4:30 AM	7/22/2009 12:14 AM	0.822222222	1
CAP SAN ANTONIO	7/21/2009 4:00 AM	7/22/2009 8:22 PM	1.681944444	1
ST LOUIS EXPRESS	7/20/2009 10:50 PM	7/22/2009 6:35 PM	1.822916667	2
MAERSK ROUBIAX	7/20/2009 8:15 AM	7/22/2009 6:26 PM	2.424305556	2
CCNI ROTTERDAN	7/20/2009 5:00 AM	7/21/2009 2:15 AM	0.885416667	1
FREEMANTLE EXPRESS	7/20/2009 4:10 AM	7/20/2009 7:20 PM	0.631944444	0
LIBRA MEXICO	7/19/2009 7:27 PM	7/21/2009 1:10 AM	1.238194444	2
ROME EXPRESS	7/16/2009 7:55 AM	7/17/2009 7:15 PM	1.472222222	1
ZIM CANADA	7/15/2009 6:34 PM	7/16/2009 7:57 PM	1.057638889	1
MAERSK IDAHO	7/15/2009 12:45 PM	7/16/2009 6:35 PM	1.243055556	1
HOLSATIA EXPRESS	7/14/2009 4:47 PM	7/17/2009 1:30 AM	2.363194444	3
SAUDI ABHA	7/14/2009 7:30 AM	7/15/2009 6:26 PM	1.455555556	1
S/L RACER	7/14/2009 7:00 AM	7/15/2009 7:15 AM	1.010416667	1
PHILADELPHIA EXPRESS	7/14/2009 5:30 AM	7/15/2009 6:43 PM	1.550694444	1
GOTHENBURG EXPRESS	7/14/2009 4:30 AM	7/15/2009 6:20 AM	1.076388889	1
AURETTE A	7/13/2009 6:15 PM	7/14/2009 7:27 PM	1.05	1
SYDNEY EXPRESS	7/13/2009 1:45 PM	7/14/2009 2:09 AM	0.516666667	1
CAP POLONIO	7/13/2009 1:26 PM	7/14/2009 1:30 PM	1.002777778	1
CSA: :ENEZUELA	7/12/2009 6:12 PM	7/14/2009 12:54 AM	1.279166667	2
HORIZON DISCO:ERY	7/9/2009 6:30 AM	7/11/2009 12:20 AM	1.743055556	2
MAERSK DOUALA	7/9/2009 5:30 AM	7/10/2009 8:25 AM	1.121527778	1
ZIM JAMAICA	7/9/2009 1:10 AM	7/9/2009 6:55 PM	0.739583333	0
CAP SAN MARCO	7/8/2009 7:10 PM	7/10/2009 2:00 AM	1.284722222	2
:ERACRUZ EXPRESS	7/8/2009 11:55 AM	7/9/2009 7:15 PM	1.305555556	1
YORKTOWN EXPRESS	7/7/2009 6:39 PM	7/8/2009 9:21 PM	1.1125	1
RICKMER RICKMERS	7/7/2009 8:30 AM	7/8/2009 2:30 AM	0.75	1
S/L CHAMPION	7/7/2009 5:37 AM	7/8/2009 8:30 AM	1.120138889	1
NEW ORLEANS EXPRESS	7/6/2009 7:45 PM	7/7/2009 7:15 PM	0.979166667	1
DO:ER STRAIT	7/6/2009 11:35 AM	7/9/2009 2:12 PM	3.109027778	3
:ALDI:IA	7/6/2009 6:20 AM	7/6/2009 5:45 PM	0.475694444	0
LONGA:I	7/6/2009 12:50 AM	7/8/2009 1:25 AM	2.024305556	2
ZIM CANADA	7/1/2009 6:45 PM	7/2/2009 7:21 PM	1.025	1
MAERSK KENTUCKY	7/1/2009 12:30 PM	7/2/2009 8:07 PM	1.317361111	1
S/L MERCURY	6/30/2009 7:00 AM	7/1/2009 6:40 AM	0.986111111	1

CHARLESTON EXPRESS	6/30/2009 6:00 AM	7/1/2009 6:10 PM	1.506944444	1
HERO	6/30/2009 5:02 AM	6/30/2009 8:18 PM	0.636111111	0
CCNI ROTTERDAM	6/29/2009 11:33 PM	7/1/2009 1:45 AM	1.091666667	2
PETKUM	6/29/2009 6:10 PM	6/30/2009 9:26 PM	1.136111111	1
FREMANTLE EXPRESS	6/29/2009 7:35 AM	6/30/2009 1:11 AM	0.733333333	1
BARCELONA EXPRESS	6/29/2009 6:25 AM	6/30/2009 1:57 AM	0.813888889	1
RIO DE JANEIRO EXPRESS	6/28/2009 7:25 PM	6/30/2009 8:58 PM	2.064583333	2
HORIZON DISCO:ERY	6/25/2009 6:05 AM	6/26/2009 11:50 PM	1.739583333	1
ZIM JAMAICA	6/24/2009 7:20 PM	6/25/2009 7:01 PM	0.986805556	1
MAERSK DURBAN	6/24/2009 11:55 AM	6/25/2009 11:05 PM	1.465277778	1
CAP PALMAS	6/24/2009 2:00 AM	6/25/2009 6:05 AM	1.170138889	1
COPENHAGEN EXPRESS	6/23/2009 4:30 PM	6/24/2009 7:40 AM	0.631944444	1
SYDNEY EXPRESS	6/23/2009 12:05 PM	6/23/2009 8:25 PM	0.347222222	0
S/L METEOR	6/23/2009 6:45 AM	6/24/2009 6:50 AM	1.003472222	1
WASHINGTON EXPRESS	6/23/2009 12:01 AM	6/24/2009 1:25 PM	1.558333333	1
MAERSK ROUBAIX	6/22/2009 5:10 AM	6/25/2009 9:15 PM	3.670138889	3
CSA: :ENEZUELA	6/21/2009 8:00 PM	6/23/2009 7:00 AM	1.458333333	2
WESTFALIA EXPRESS	6/21/2009 1:35 PM	6/22/2009 7:45 PM	1.256944444	1
SAUDI TABUK	6/21/2009 8:35 AM	6/23/2009 2:00 PM	2.225694444	2
GENOA EXPRESS	6/20/2009 4:20 AM	6/21/2009 1:24 AM	0.877777778	1
ZIM CANADA	6/18/2009 1:11 AM	6/19/2009 3:02 AM	1.077083333	1
MAERSK WYOMING	6/17/2009 2:30 PM	6/18/2009 8:55 PM	1.267361111	1
RICKMER RICKMERS	6/16/2009 10:20 PM	6/17/2009 6:54 PM	0.856944444	1
CAP BYRON	6/16/2009 7:05 AM	6/17/2009 2:14 AM	0.797916667	1
S/L EAGLE	6/16/2009 6:00 AM	6/17/2009 6:35 AM	1.024305556	1
EMS TRADER	6/16/2009 4:15 AM	6/16/2009 6:07 PM	0.577777778	0
ST LOUIS EXPRESS	6/15/2009 9:05 PM	6/17/2009 6:16 PM	1.882638889	2
AURETTE A	6/15/2009 5:40 PM	6/16/2009 6:20 PM	1.027777778	1
:ALDI:IA	6/15/2009 12:50 PM	6/16/2009 1:09 AM	0.513194444	1
SAXONIA EXPRESS	6/15/2009 12:05 AM	6/16/2009 2:32 AM	1.102083333	1
MADRID EXPRESS	6/11/2009 7:35 AM	6/12/2009 3:50 PM	1.34375	1
HORIZON DISCO:ERY	6/11/2009 5:43 AM	6/13/2009 12:18 AM	1.774305556	2
MAERSK DA:AO	6/10/2009 4:41 PM	6/12/2009 7:45 AM	1.627777778	2
CAP TRAFALGAR	6/10/2009 4:42 AM	6/10/2009 9:15 PM	0.689583333	0
FREMANTLE EXPRESS	6/9/2009 6:53 AM	6/10/2009 12:09 AM	0.719444444	1
LI:ORNO EXPRESS	6/9/2009 4:18 AM	6/9/2009 8:32 PM	0.676388889	0
PHILADELPHIA EXPRESS	6/9/2009 3:55 AM	6/10/2009 5:54 PM	1.582638889	1
S/L RACER	6/9/2009 12:35 AM	6/10/2009 2:16 PM	1.570138889	1
DO:ER STRAIT	6/8/2009 6:20 PM	6/9/2009 6:30 PM	1.006944444	1
CCNI ROTTERDAM	6/8/2009 4:40 AM	6/9/2009 1:36 AM	0.872222222	1

SANTOS EXPRESS	6/7/2009 7:20 PM	6/9/2009 12:25 AM	1.211805556	2
GALLIA	6/4/2009 2:18 PM	6/5/2009 5:20 PM	1.126388889	1
ZIM CANADA	6/3/2009 10:50 PM	6/4/2009 9:55 PM	0.961805556	1
MAERSK WISCONSIN	6/3/2009 11:20 AM	6/4/2009 7:35 PM	1.34375	1
LIBRA MEXICO	6/3/2009 5:05 AM	6/4/2009 1:00 AM	0.829861111	1
SYDNEY EXPRESS	6/2/2009 9:25 AM	6/3/2009 1:03 AM	0.651388889	1
S/L CHAMPION	6/2/2009 6:50 AM	6/3/2009 6:15 AM	0.975694444	1
GOTHENBURG EXPRESS	6/2/2009 5:15 AM	6/2/2009 6:18 PM	0.54375	0
YORKTOWN EXPRESS	6/1/2009 10:45 PM	6/3/2009 1:25 PM	1.611111111	2
ALIOTH	6/1/2009 8:10 PM	6/2/2009 7:55 PM	0.989583333	1
ROME EXPRESS	5/31/2009 8:30 PM	6/2/2009 7:14 AM	1.447222222	2
CSA: :ENEZUELA	5/31/2009 8:20 PM	6/2/2009 3:05 AM	1.28125	2
HORIZON DISCO:ERY	5/28/2009 5:00 AM	5/30/2009 12:05 AM	1.795138889	2
ZIM JAMAICA	5/28/2009 5:00 AM	6/4/2009 12:14 AM	6.801388889	6
CAP POLONIO	5/27/2009 3:20 PM	5/28/2009 1:00 PM	0.902777778	1
MAERSK DRISCOLL	5/27/2009 10:30 AM	5/29/2009 12:20 AM	1.576388889	2
RICKMER RICKMERS	5/27/2009 8:45 AM	5/27/2009 11:20 PM	0.607638889	0
S/L MERCURY	5/26/2009 7:20 AM	5/27/2009 5:42 AM	0.931944444	1
SAUDI DIRIYAH	5/26/2009 1:40 AM	5/27/2009 11:20 PM	1.902777778	1
CHARLESTON EXPRESS	5/25/2009 8:00 PM	5/27/2009 6:10 PM	1.923611111	2
ALTAMIRA EXPRESS	5/25/2009 7:30 PM	5/26/2009 8:25 PM	1.038194444	1
MAERSK ROUBIAX	5/25/2009 7:00 PM	5/26/2009 10:27 PM	1.14375	1
:ERACRUZ EXPRESS	5/24/2009 11:10 PM	5/26/2009 6:55 PM	1.822916667	2
:ALDI:IA	5/24/2009 10:00 PM	5/25/2009 1:10 PM	0.631944444	1
HOLSATIA EXPRESS	5/24/2009 2:18 PM	5/25/2009 1:50 PM	0.980555556	1
NEW ORLEANS EXPRESS	5/23/2009 6:35 AM	5/23/2009 11:30 PM	0.704861111	0
ZIM CANADA	5/21/2009 6:30 AM	5/22/2009 12:15 AM	0.739583333	1
MAERSK UTAH	5/20/2009 1:00 PM	5/21/2009 8:00 PM	1.291666667	1
S/L METEOR	5/19/2009 8:30 AM	5/21/2009 6:35 AM	1.920138889	2
ANNABELLE SCHULTE	5/19/2009 5:46 AM	5/20/2009 5:27 AM	0.986805556	1
FREMANTLE EXPRESS	5/19/2009 2:07 AM	5/19/2009 6:47 PM	0.694444444	0
WASHINGTON EXPRESS	5/18/2009 6:56 PM	5/20/2009 6:30 AM	1.481944444	2
AURETTE A	5/18/2009 4:50 PM	5/19/2009 4:21 PM	0.979861111	1
CCNI ROTTERDAM	5/18/2009 4:50 AM	5/19/2009 8:00 AM	1.131944444	1
LONGA:I	5/18/2009 12:30 AM	5/19/2009 2:53 AM	1.099305556	1
BARCELONA EXPRESS	5/14/2009 9:40 AM	5/15/2009 6:30 PM	1.368055556	1
HORIZON DISCO:ERY	5/14/2009 5:50 AM	5/16/2009 12:06 AM	1.761111111	2
ZIM JAMAICA	5/13/2009 5:01 PM	5/14/2009 5:10 PM	1.00625	1
MAERSK DUNEDIN	5/13/2009 12:08 PM	5/14/2009 6:53 PM	1.28125	1
S/L EAGLE	5/12/2009 8:00 AM	5/13/2009 9:00 AM	1.041666667	1

COPENHAGEN EXPRESS	5/12/2009 7:06 AM	5/13/2009 6:17 AM	0.965972222	1
CAP PALMAS	5/12/2009 5:27 AM	5/13/2009 3:00 AM	0.897916667	1
DO:ER STRAIT	5/12/2009 12:47 AM	5/13/2009 6:59 AM	1.258333333	1
ST LOUIS EXPRESS	5/11/2009 9:43 PM	5/13/2009 5:11 PM	1.811111111	2
SYDNEY EXPRESS	5/11/2009 5:45 AM	5/11/2009 8:53 PM	0.630555556	0
CSA: :ENEZUELA	5/10/2009 9:30 PM	5/12/2009 12:37 AM	1.129861111	2
RIO DE JANEIRO EXPRESS	5/10/2009 8:30 PM	5/12/2009 1:16 AM	1.198611111	2
MAERSK IDAHO	5/7/2009 12:15 PM	5/8/2009 2:00 PM	1.072916667	1
ZIM CANADA	5/6/2009 6:25 PM	5/9/2009 5:00 AM	2.440972222	3
RICKMER RICKMERS	5/6/2009 6:15 AM	5/7/2009 7:30 AM	1.052083333	1
ADELAIDE EXPRESS	5/6/2009 5:57 AM	5/7/2009 7:35 AM	1.068055556	1
SANTA CRISTINA	5/5/2009 11:58 PM	5/6/2009 8:02 PM	0.836111111	1
S/L RACER	5/5/2009 7:08 AM	5/6/2009 6:20 AM	0.966666667	1
PHILADELPHIA EXPRESS	5/4/2009 9:20 PM	5/6/2009 6:18 PM	1.873611111	2
ALIOTH	5/4/2009 5:15 PM	5/5/2009 8:20 PM	1.128472222	1
SAUDI HOFUF	5/4/2009 5:05 AM	5/5/2009 5:58 PM	1.536805556	1
WESTFALIA EXPRESS	5/3/2009 10:50 PM	5/5/2009 12:30 AM	1.069444444	2
:ALDI:IA	5/3/2009 9:40 PM	5/4/2009 2:06 PM	0.684722222	1
HORIZON DISCO:ERY	4/30/2009 6:00 AM	5/2/2009 12:37 AM	1.775694444	2
MADRID EXPRESS	4/29/2009 9:44 PM	4/30/2009 11:41 PM	1.08125	1
ZIM JAMAICA	4/29/2009 1:20 PM	4/30/2009 7:22 PM	1.251388889	1
MAERSK DOUALA	4/29/2009 12:15 PM	5/1/2009 12:04 AM	1.492361111	2
CAP TRAFALGAR	4/29/2009 3:50 AM	4/30/2009 4:45 AM	1.038194444	1
LI:ORNO EXPRESS	4/28/2009 6:10 PM	4/29/2009 12:05 PM	0.746527778	1
S/L CHAMPION	4/28/2009 6:20 AM	4/29/2009 6:10 AM	0.993055556	1
FREEMANTLE EXPRESSS	4/27/2009 11:05 PM	4/28/2009 6:24 PM	0.804861111	1
YORKTOWN EXPRESS	4/27/2009 10:40 PM	4/29/2009 6:13 PM	1.814583333	2
MAERSK ROUBIAX	4/27/2009 6:40 PM	4/28/2009 8:06 PM	1.059722222	1
CCNI ROTTERDAM	4/27/2009 5:25 AM	4/28/2009 6:02 AM	1.025694444	1
SAXONIA EXPRESS	4/26/2009 9:35 PM	4/28/2009 1:23 AM	1.158333333	2
MAERSK KENTUCKY	4/23/2009 1:20 PM	4/24/2009 5:05 PM	1.15625	1
GOTHENBURG EXPRESS	4/22/2009 8:51 PM	4/23/2009 6:12 PM	0.889583333	1
ZIM CANADA	4/22/2009 7:11 PM	4/24/2009 1:13 AM	1.251388889	2
SYDNEY EXPRESS	4/22/2009 7:05 AM	4/22/2009 6:22 PM	0.470138889	0
CHARLESTON EXPRESS	4/21/2009 10:55 AM	4/22/2009 7:11 PM	1.344444444	1
S/L MERCURY	4/21/2009 6:25 AM	4/22/2009 6:40 AM	1.010416667	1
GALLIA	4/21/2009 3:28 AM	4/21/2009 10:38 PM	0.798611111	0
AURETTE A	4/20/2009 6:43 PM	4/21/2009 9:00 PM	1.095138889	1
CSA: :ENEZUELA	4/20/2009 2:08 AM	4/21/2009 1:55 AM	0.990972222	1
SANTOS EXPRESS	4/19/2009 9:00 PM	4/21/2009 1:00 AM	1.166666667	2

SAUDI ABHA	4/19/2009 2:35 PM	4/21/2009 9:52 PM	2.303472222	2
ROME EXPRESS	4/18/2009 2:00 PM	4/19/2009 2:08 PM	1.005555556	1
HORIZON DISCO:ERY	4/16/2009 6:30 AM	4/19/2009 8:35 AM	3.086805556	3
NORTH SEA	4/15/2009 5:30 PM	4/16/2009 5:06 PM	0.983333333	1
MAERSK DURBAN	4/15/2009 12:30 PM	4/16/2009 7:00 PM	1.270833333	1
ALTAMIRA EXPRESS	4/14/2009 6:20 AM	4/15/2009 12:15 AM	0.746527778	1
ALIANCA GA:EA	4/14/2009 5:52 AM	4/15/2009 1:58 AM	0.8375	1
WASHINTON EXPRESS	4/13/2009 7:54 PM	4/15/2009 3:13 PM	1.804861111	2
:ALDI:IA	4/13/2009 7:00 PM	4/14/2009 1:44 AM	0.280555556	1
DO:ER STRAIT	4/13/2009 6:44 PM	4/14/2009 7:46 PM	1.043055556	1
LIBRA ECUADOR	4/13/2009 4:20 PM	4/14/2009 6:55 PM	1.107638889	1
LIBRA MEXICO	4/12/2009 9:45 PM	4/14/2009 12:35 AM	1.118055556	2
:ERACRUZ EXPRESS	04/10/09 13:10	4/11/2009 7:25 AM	0.760416667	1
MAERSK WYOMING	04/09/09 12:23	4/10/2009 9:00 PM	1.359027778	1
MARLENE S	04/08/09 18:12	4/9/2009 6:53 AM	0.528472222	1
ZIM CANADA	04/08/09 17:38	4/9/2009 7:57 PM	1.096527778	1
S/L EAGLE	04/07/09 17:27	4/8/2009 6:09 PM	1.029166667	1
NEW ORLEANS EXPRESS	04/07/09 10:33	4/8/2009 6:13 AM	0.819444444	1
ST LOUIS EXPRESS	04/07/09 04:50	4/8/2009 2:15 PM	1.392361111	1
RICKMER RICKMERS	04/06/09 20:45	4/7/2009 2:45 PM	0.75	1
CAP BIZERTA	04/06/09 18:30	4/7/2009 7:15 PM	1.03125	1
ALIOTH	04/06/09 17:15	4/7/2009 5:55 PM	1.027777778	1
CCNI ROTTERDAM	04/06/09 06:50	4/7/2009 6:05 AM	0.96875	1
HOLSATIA EXPRESS	4/5/2009 10:05 PM	4/7/2009 1:00 AM	1.121527778	2
HORIZON DISCO:ERY	4/2/2009 6:10 AM	4/4/2009 12:18 AM	1.755555556	2
NORTH SEA	4/1/2009 6:37 PM	4/2/2009 7:00 PM	1.015972222	1
CAP PALMAS	4/1/2009 3:15 PM	4/2/2009 12:00 PM	0.864583333	1
MAERSK DA:AO	4/1/2009 12:20 PM	4/2/2009 8:10 PM	1.326388889	1
COPENHAGEN EXPRESS	4/1/2009 2:30 AM	4/2/2009 5:30 AM	1.125	1
LONGA:I	3/31/2009 2:55 PM	4/1/2009 9:04 AM	0.75625	1
S/L PERFORMANCE	3/31/2009 1:40 PM	4/1/2009 7:10 AM	0.729166667	1
BARCELONA EXPRESS	3/31/2009 11:50 AM	4/1/2009 8:33 AM	0.863194444	1
MAERSK ROUBAIX	3/31/2009 6:20 AM	4/1/2009 12:10 AM	0.743055556	1
PHILADELPHIA EXPRESS	3/30/2009 11:35 PM	4/1/2009 2:47 PM	1.633333333	1
CSA: :ENEZUELA	3/30/2009 4:50 PM	3/31/2009 12:50 PM	0.833333333	0
SYDNEY EXPRESS	3/30/2009 3:20 PM	3/31/2009 8:15 AM	0.704861111	0
BUXFA:OURITE	3/28/2009 5:20 PM	3/29/2009 11:15 AM	0.746527778	1
HERO	3/27/2009 8:45 AM	4/5/2009 3:10 PM	9.267361111	8
MAERSK WISCONSIN	3/25/2009 6:40 PM	3/27/2009 5:30 AM	1.451388889	2
ZIM CANADA	3/25/2009 6:03 PM	3/26/2009 7:15 PM	1.05	1

TURIN EXPRESS	3/25/2009 4:10 AM	3/25/2009 7:32 PM	0.640277778	0
SAUDI TABUK	3/24/2009 10:30 AM	3/26/2009 12:02 AM	1.563888889	2
S/L CHAMPION	3/24/2009 6:50 AM	3/25/2009 8:12 AM	1.056944444	1
CAP ORTEGAL	3/24/2009 6:05 AM	3/25/2009 2:18 AM	0.842361111	1
AURETTE A	3/24/2009 1:08 AM	3/25/2009 7:20 AM	1.258333333	1
YORKTOWN EXPRESS	3/23/2009 10:06 PM	3/25/2009 1:45 PM	1.652083333	2
RIO DE JANEIRO EXPRESS	3/22/2009 9:30 PM	3/24/2009 8:00 AM	1.4375	2
LIBRA ECUADOR	3/22/2009 8:15 PM	3/24/2009 1:43 AM	1.227777778	2
ADELAIDE EXPRESS	3/19/2009 8:25 PM	3/20/2009 11:56 PM	1.146527778	1
CAP TRAFALGAR	3/18/2009 7:03 PM	3/19/2009 5:20 PM	0.928472222	1
NORTH SEA	3/18/2009 4:45 PM	3/19/2009 4:10 PM	0.975694444	1
MARLENE S	3/18/2009 12:45 PM	3/19/2009 1:00 AM	0.510416667	1
MAERSK DRISCOLL	3/18/2009 11:35 AM	3/19/2009 6:59 PM	1.308333333	1
HORIZON DISCO:ERY	3/18/2009 5:32 AM	3/20/2009 8:30 PM	2.623611111	2
S/L MERCURY	3/17/2009 7:40 AM	3/18/2009 9:55 PM	1.59375	1
LI:ORNO EXPRESS	3/16/2009 11:50 PM	3/17/2009 8:05 PM	0.84375	1
CHALESTON EXPRESS	3/16/2009 9:30 PM	3/18/2009 7:11 PM	1.903472222	2
DO:ER STRAIT	3/16/2009 6:01 PM	3/18/2009 1:16 AM	1.302083333	2
CCNI ROTTERDAM	3/16/2009 7:20 AM	3/17/2009 8:10 AM	1.034722222	1
WESTFALIA EXPRESS	3/16/2009 5:35 AM	3/17/2009 6:00 AM	1.017361111	1
:ALDI:IA	3/13/2009 5:50 AM	3/13/2009 8:15 PM	0.600694444	0
GENOA EXPRESS	3/13/2009 2:40 AM	3/13/2009 11:46 PM	0.879166667	0
ZIM CANADA	3/12/2009 6:10 AM	3/13/2009 12:30 AM	0.763888889	1
S/L METEOR	3/11/2009 11:14 AM	3/13/2009 6:37 AM	1.807638889	2
GOTHENBURG EXPRESS	3/10/2009 5:01 AM	3/11/2009 12:10 AM	0.797916667	1
MAERSK UTAH	3/10/2009 4:20 AM	3/11/2009 6:18 AM	1.081944444	1
WASHINGTON EXPRESS	3/9/2009 11:30 PM	3/11/2009 6:05 PM	1.774305556	2
ALIOTH	3/9/2009 7:50 PM	3/11/2009 2:10 AM	1.263888889	2
SYDNEY EXPRESS	3/9/2009 6:50 PM	3/10/2009 2:18 PM	0.811111111	1
CSA: :ENEZUELA	3/9/2009 11:00 AM	3/10/2009 8:18 AM	0.8875	1
SAXONIA EXPRESS	3/8/2009 9:30 PM	3/10/2009 2:51 AM	1.222916667	2
HORIZON DISCO:ERY	3/5/2009 5:27 AM	3/6/2009 10:35 PM	1.713888889	1
SAUDI DIRIYAH	3/5/2009 4:14 AM	3/6/2009 4:09 PM	1.496527778	1
ROME EXPRESS	3/4/2009 5:02 PM	3/5/2009 10:37 AM	0.732638889	1
MAERSK DUNEDIN	3/4/2009 1:10 PM	3/6/2009 1:08 AM	1.498611111	2
ALTAMIRA EXPRESS	3/4/2009 7:23 AM	3/4/2009 9:12 PM	0.575694444	0
CARIBBEAN EXPRESS	3/4/2009 8:20 PM	3/5/2009 11:59 PM	1.152083333	1
ALIANCA GA:EA	3/3/2009 10:10 PM	3/4/2009 11:08 PM	1.040277778	1
TURIN EXPRESS	3/3/2009 6:03 PM	3/4/2009 1:28 AM	0.309027778	1
S/L EAGLE	3/3/2009 7:25 AM	3/4/2009 7:20 AM	0.996527778	1

MAERSK ROUBAIX	3/3/2009 1:15 AM	3/4/2009 4:10 AM	1.121527778	1
ST LOUIS EXPRESS	3/2/2009 9:19 PM	3/4/2009 5:32 PM	1.842361111	2
LIBRA ECUADOR	3/2/2009 7:14 AM	3/4/2009 2:56 AM	1.820833333	2
SANTOS EXPRESS	3/1/2009 2:10 PM	3/2/2009 1:13 PM	0.960416667	1
GOSPORT MAERSK	2/25/2009 12:25 PM	2/26/2009 11:59 PM	1.481944444	1
ZIM JAMAICA	2/25/2009 9:50 AM	2/26/2009 6:30 PM	1.361111111	1
MADRID EXPRESS	2/25/2009 9:30 AM	2/26/2009 7:42 AM	0.925	1
CCNI ROTTERDAM	2/25/2009 8:00 AM	2/26/2009 12:15 PM	1.177083333	1
CAP BIZERTA	2/25/2009 5:32 AM	2/26/2009 1:00 AM	0.811111111	1
CONTI SINGA	2/24/2009 1:50 PM	2/25/2009 9:30 AM	0.819444444	1
MARLENE S	2/24/2009 8:25 AM	2/24/2009 6:48 PM	0.432638889	0
S/L PERFORMANCE	2/24/2009 7:20 AM	2/25/2009 6:08 AM	0.95	1
AURETTE A	2/24/2009 1:30 AM	2/25/2009 1:13 AM	0.988194444	1
LIBRA MEXICO	2/23/2009 12:10 AM	2/23/2009 11:50 PM	0.986111111	0
PHILADELPHIA EXPRESS	2/22/2009 8:37 PM	2/26/2009 2:10 PM	3.73125	4
COPENHAGEN EXPRESS	2/19/2009 4:40 PM	2/20/2009 7:40 AM	0.625	1
HORIZON DISCO:ERY	2/19/2009 5:50 AM	2/21/2009 12:13 AM	1.765972222	2
S/L QUALITY	2/17/2009 4:53 PM	2/19/2009 8:08 PM	2.135416667	2
S/L CHAMPION	2/17/2009 12:05 PM	2/18/2009 1:10 PM	1.045138889	1
ZIM CANADA	2/17/2009 5:43 AM	2/19/2009 5:20 AM	1.984027778	2
YORKTOWN EXPRESS	2/17/2009 3:00 AM	2/18/2009 5:22 PM	1.598611111	1
DO:ER STRAIT	2/16/2009 5:23 PM	2/17/2009 8:05 PM	1.1125	1
PLUTO	2/16/2009 9:30 AM	2/16/2009 9:18 PM	0.491666667	0
CSA: :ENEZUELA	2/16/2009 9:10 AM	2/17/2009 8:30 AM	0.972222222	1
CAP POLONIO	2/16/2009 9:00 AM	2/16/2009 11:45 PM	0.614583333	0
HOLSATIA EXPRESS	2/15/2009 8:54 PM	2/17/2009 12:30 AM	1.15	2
S/L MOTI:ATOR	2/13/2009 8:15 AM	2/13/2009 7:10 PM	0.454861111	0
BARCELONA EXPRESS	2/13/2009 12:45 AM	2/14/2009 10:10 AM	1.392361111	1
GLOSGOW MAERSK	2/11/2009 7:09 PM	2/13/2009 6:30 AM	1.472916667	2
CAP ORTEGAL	2/11/2009 6:02 PM	2/12/2009 8:00 AM	0.581944444	1
SAUDI HOFUF	2/11/2009 4:50 PM	2/13/2009 4:36 AM	1.490277778	2
CHARLESTON EXPRESS	2/10/2009 6:10 PM	2/12/2009 12:10 AM	1.25	2
NEW ORLEANS EXPRESS	2/10/2009 5:08 PM	2/11/2009 6:35 PM	1.060416667	1
ALIOTH	2/9/2009 10:42 PM	2/10/2009 11:55 PM	1.050694444	1
TURIN EXPRESS	2/9/2009 5:53 PM	2/10/2009 9:10 AM	0.636805556	1
LONGA:I	2/8/2009 6:47 PM	2/10/2009 6:00 AM	1.467361111	2
:EREACRUZ EXPRESS	2/7/2009 7:55 AM	2/8/2009 6:00 AM	0.920138889	1
CARRIBEAN SEA	2/6/2009 5:40 AM	2/7/2009 11:00 AM	1.222222222	1
HERO	2/5/2009 10:15 PM	2/6/2009 1:05 PM	0.618055556	1
CCNI ROTTERDAM	2/5/2009 6:30 PM	2/6/2009 6:00 PM	0.979166667	1

HORIZON DISCO:ERY	2/5/2009 5:12 AM	2/6/2009 11:00 PM	1.741666667	1
S/L ACHIE:ER	2/4/2009 8:15 PM	2/5/2009 8:10 PM	0.996527778	1
MAERSK UTAH	2/3/2009 2:22 PM	2/4/2009 5:45 PM	1.140972222	1
CAP TRAFALGAR	2/3/2009 8:10 AM	2/3/2009 11:33 PM	0.640972222	0
MAERSK ROUBAIX	2/2/2009 10:04 PM	2/3/2009 6:00 PM	0.830555556	1
WASHINGTON EXPRESS	2/2/2009 9:17 PM	2/4/2009 3:55 PM	1.776388889	2
MARLENE S	2/2/2009 4:35 AM	2/2/2009 6:54 PM	0.596527778	0
ROI DE JANEIRO EXPRESS	2/1/2009 10:40 PM	2/2/2009 7:18 PM	0.859722222	1
LIBRA ECUADOR	2/1/2009 7:07 PM	2/2/2009 8:37 PM	1.0625	1
GOTHENBURG EXPRESS	1/28/2009 6:30 PM	1/29/2009 6:06 PM	0.983333333	1
S/L FLORIDA	1/28/2009 5:13 PM	1/30/2009 12:25 AM	1.3	2
ZIM CANADA	1/28/2009 4:31 PM	1/29/2009 6:06 PM	1.065972222	1
AURETTE A	1/28/2009 4:25 AM	1/29/2009 1:05 AM	0.861111111	1
ALIANCA SHANGHAI	1/27/2009 9:50 PM	1/28/2009 7:00 PM	0.881944444	1
S/L EAGLE	1/27/2009 4:47 PM	1/28/2009 2:40 PM	0.911805556	1
ST LOUIS EXPRESS	1/27/2009 3:14 PM	1/28/2009 6:15 PM	1.125694444	1
WESTFALIA EXPRESS	1/26/2009 1:30 AM	1/27/2009 8:50 AM	1.305555556	1
PLUTO	1/25/2009 10:23 PM	1/26/2009 10:05 PM	0.9875	1
SAUDI ABHA	1/25/2009 6:37 PM	1/27/2009 12:05 AM	1.227777778	2
HORIZON DISCO:ERY	1/21/2009 10:33 PM	1/24/2009 12:06 AM	2.064583333	3
S/L ATLANTIC	1/21/2009 3:35 PM	1/22/2009 1:25 PM	0.909722222	1
PHILADELPHIA EXPRESS	1/21/2009 8:40 AM	1/22/2009 6:10 AM	0.895833333	1
S/L PERFORMANCE	1/20/2009 11:56 PM	1/21/2009 7:08 PM	0.8	1
TURIN EXPRESS	1/20/2009 6:13 PM	1/21/2009 7:25 AM	0.55	1
ALTAMIRA EXPRESS	1/20/2009 1:57 PM	1/21/2009 10:28 AM	0.854861111	1
DO:ER STRAIT	1/20/2009 12:20 PM	1/22/2009 10:06 AM	1.906944444	2
ALIANCA GA:EA	1/20/2009 4:35 AM	1/21/2009 1:08 AM	0.85625	1
SAXONIA EXPRESS	1/19/2009 6:20 AM	1/20/2009 12:01 AM	0.736805556	1
CSA: :ENEZUELA	1/18/2009 11:15 PM	1/19/2009 7:33 PM	0.845833333	1
ROME EXPRESS	1/18/2009 7:11 AM	1/19/2009 12:10 AM	0.707638889	1
S/L CHAMPION	1/15/2009 6:17 PM	1/16/2009 4:30 PM	0.925694444	1
CONTI EMDEN	1/14/2009 5:41 PM	1/15/2009 5:58 PM	1.011805556	1
ALIOTH	1/14/2009 2:50 AM	1/14/2009 6:00 PM	0.631944444	0
MARLENE S	1/13/2009 7:21 PM	1/14/2009 5:45 PM	0.933333333	1
YORKTOWN EXPRESS	1/13/2009 12:24 PM	1/14/2009 7:15 PM	1.285416667	1
LI:ORNO EXPRESS	1/13/2009 10:08 AM	1/13/2009 8:28 PM	0.430555556	0
S/L COMMITMENT	1/13/2009 7:14 AM	1/14/2009 7:07 AM	0.995138889	1
CCNI ROTTERDAM	1/12/2009 7:43 AM	1/12/2009 5:54 PM	0.424305556	0
SANTOS EXPRESS	1/11/2009 7:16 PM	1/12/2009 7:00 PM	0.988888889	1
SAUDI TABUK	1/10/2009 7:47 PM	1/12/2009 5:46 PM	1.915972222	2

HORIZON DISCO:ERY	1/9/2009 7:25 AM	1/10/2009 12:30 PM	1.211805556	1
CAP POLONIO	1/9/2009 6:18 AM	1/9/2009 11:00 PM	0.695833333	0
MAERSK ROUBAIX	1/8/2009 6:20 AM	1/8/2009 4:55 PM	0.440972222	0
ZIM XIAMEN	1/7/2009 6:57 AM	1/8/2009 1:30 PM	1.272916667	1
CHARLESTON EXPRESS	1/6/2009 11:10 AM	1/8/2009 12:18 AM	1.547222222	2
S/L MOTI:ATOR	1/6/2009 7:20 AM	1/7/2009 1:15 PM	1.246527778	1
MADRID EXPRESS	1/6/2009 6:20 AM	1/8/2009 7:06 PM	2.531944444	2
BONN EXPRESS	1/5/2009 8:03 PM	1/7/2009 7:35 AM	1.480555556	2
PLUTO	1/5/2009 3:50 AM	1/5/2009 6:47 PM	0.622916667	0
LIBRA MEXICO	1/5/2009 1:10 AM	1/6/2009 8:37 PM	1.810416667	1
S/L QUALITY	1/3/2009 1:05 PM	1/5/2009 1:10 AM	1.503472222	2
CSA: :ENEZUELA	1/1/2009 6:50 PM	1/2/2009 7:05 PM	1.010416667	1
S/L PRIDE	1/1/2009 9:55 AM	1/2/2009 11:35 AM	1.069444444	1
TURIN EXPRESS	12/31/2008 7:33 PM	1/1/2009 3:00 AM	0.310416667	1
AURETTE A	12/30/2008 9:00 PM	12/31/2008 5:00 PM	0.833333333	0
BARCELONA EXPRESS	12/30/2008 8:10 PM	12/31/2008 1:37 PM	0.727083333	0
WASHINGTON EXPRESS	12/30/2008 4:40 AM	12/31/2008 8:10 PM	1.645833333	0
NEW ORLEANS EXPRESS	12/29/2008 10:19 PM	12/30/2008 9:10 PM	0.952083333	1
HOLSATIA EXPRESS	12/28/2008 11:40 PM	12/29/2008 7:03 PM	0.807638889	1
E.R.DURBAN	12/28/2008 2:25 PM	12/29/2008 3:20 AM	0.538194444	1
MAERSK MONTREAL	12/28/2008 8:32 AM	12/29/2008 3:00 PM	1.269444444	1
LONGA:I	12/28/2008 3:15 AM	12/29/2008 12:55 AM	0.902777778	1
ZIM LI:ORNO	12/27/2008 8:16 PM	12/28/2008 8:16 PM	1	1
MARLENE S	12/25/2008 12:22 AM	12/26/2008 5:19 PM	1.70625	1
HORIZON CHALLENGER	12/24/2008 7:02 PM	12/27/2008 12:40 PM	2.734722222	3
CAP TRAFALGAR	12/24/2008 1:00 PM	12/27/2008 9:25 AM	2.850694444	3
:ERACRUZ EXP	12/24/2008 11:30 AM	12/27/2008 11:30 AM	3	3
HERO	12/24/2008 8:15 AM	12/27/2008 10:25 AM	3.090277778	3
S/L FLORIDA	12/24/2008 7:10 AM	12/27/2008 2:15 PM	3.295138889	3
ST. LOUIS EXP	12/23/2008 5:06 PM	12/24/2008 5:02 PM	0.997222222	1
ALIOTH	12/22/2008 2:33 PM	12/26/2008 7:01 AM	3.686111111	4
CAP DOMINGO	12/21/2008 9:23 PM	12/22/2008 8:03 PM	0.944444444	1
S/L ACHIE:ER	12/21/2008 5:57 PM	12/23/2008 1:35 AM	1.318055556	2
ZIM YOKOHAMA	12/21/2008 1:15 PM	12/22/2008 3:50 PM	1.107638889	1
MAERSK ROUBAIX	12/21/2008 9:55 AM	12/22/2008 1:10 AM	0.635416667	1
S/L ATLANTIC	12/16/2008 1:35 PM	12/17/2008 1:10 PM	0.982638889	1
HEIDELBERG EXPRESS	12/16/2008 10:00 AM	12/17/2008 11:30 AM	1.0625	1
CSA: :ENEZUELA	12/16/2008 1:30 AM	12/17/2008 9:45 AM	1.34375	1
PHILADELPHIA EXPRESS	12/15/08 22:57	12/19/2008 1:20 PM	3.599305556	4
PLUTO	12/15/08 07:50	12/15/2008 9:27 PM	0.567361111	0

WESTFALIA EXPRESS	12/14/08 20:40	12/15/2008 10:30 PM	1.076388889	1
SAUDI DIRIYAH	12/14/08 18:30	12/17/2008 9:30 AM	2.625	3
GENOA EXPRESS	12/13/08 10:00	12/14/2008 9:25 AM	0.975694444	1
S/L EAGLE	12/13/08 04:48	12/15/2008 12:10 AM	1.806944444	2
ALIANCA SHANGHAI	12/11/08 06:55	12/13/2008 12:29 AM	1.731944444	2
E.R.DURBAN	12/10/08 16:53	12/11/2008 5:05 AM	0.508333333	1
YORKTOWN EXPRESS	12/10/08 15:20	12/11/2008 5:20 PM	1.083333333	1
PEARL RI:ER I	12/10/08 06:30	12/12/2008 7:25 AM	2.038194444	2
AURETTE A	12/10/08 05:10	12/11/2008 3:39 PM	1.436805556	1
HORIZON CHALLENGER	12/09/08 23:40	12/13/2008 12:18 AM	3.026388889	4
S/L COMMITMENT	12/09/08 12:25	12/10/2008 4:26 PM	1.167361111	1
ALTAMIRA EXPRESS	12/09/08 09:45	12/10/2008 1:30 AM	0.65625	1
SAXONIA EXPRESS	12/08/08 11:00	12/9/2008 6:53 AM	0.828472222	1
S/L PERFORMANCE	12/06/08 06:55	12/8/2008 12:20 AM	1.725694444	2
MARLENE S	12/04/08 14:30	12/5/2008 4:43 AM	0.592361111	1
ROME EXPRESS	12/04/08 00:40	12/5/2008 1:26 AM	1.031944444	1
ZIM SHEKOU	12/03/08 14:11	12/4/2008 3:15 PM	1.044444444	1
ALIOTH	12/03/08 00:20	12/3/2008 6:53 PM	0.772916667	0
S/L MOTI:ATOR	12/02/08 07:00	12/3/2008 7:15 AM	1.010416667	1
CHARLESTON EXPRESS	12/02/08 00:55	12/3/2008 8:05 PM	1.798611111	1
LI:ORNO EXPRESS	12/01/08 19:09	12/3/2008 1:01 AM	1.244444444	2
MAERSK MADRID	12/01/08 07:50	12/1/2008 10:45 PM	0.621527778	0
ALIANCA GA:EA	12/01/08 04:50	12/2/2008 10:20 AM	1.229166667	1
SANTOS EXPRESS	11/30/08 22:55	12/1/2008 10:08 PM	0.967361111	1
LIBRA MEXICO	11/29/08 18:12	11/30/2008 7:00 AM	0.533333333	1
CSA: :ENEZUELA	11/29/08 16:04	11/30/2008 7:00 AM	0.622222222	1
S/L CHAMPION	11/29/08 07:45	12/1/2008 12:15 AM	1.6875	2
MAERSK ROUBAIX	11/26/08 06:07	11/26/2008 7:42 PM	0.565972222	0
S/L PRIDE	11/25/08 11:05	11/26/2008 12:23 PM	1.054166667	1
HORIZON CHALLENGER	11/25/08 05:45	11/29/2008 12:01 AM	3.761111111	4
BONN EXPRESS	11/25/08 01:10	11/26/2008 12:33 AM	0.974305556	1
WASHINGTON EXPRESS	11/24/08 19:47	11/26/2008 6:00 PM	1.925694444	2
PLUTO	11/24/08 17:40	11/25/2008 6:45 AM	0.545138889	1
MADRID EXPRESS	11/24/08 17:23	11/25/2008 8:27 PM	1.127777778	1
E.R.DURBAN	11/23/08 03:14	11/23/2008 6:40 PM	0.643055556	0
HOLSATIA EXPRESS	11/22/08 19:48	11/23/2008 9:37 AM	0.575694444	1
SAUDI HOFUF	11/21/08 06:00	11/23/2008 7:17 PM	2.553472222	2
NEW ORLEANS EXPRESS	11/20/08 19:21	11/21/2008 11:40 AM	0.679861111	1
NORDWINTER	11/19/08 07:15	11/19/2008 8:05 PM	0.534722222	0
AURETTE A	11/18/08 21:10	11/20/2008 12:20 AM	1.131944444	2

S/L FLORIDA	11/18/08 13:58	11/19/2008 1:00 PM	0.959722222	1
ST LOUIS EXPRESS	11/17/08 20:30	11/19/2008 4:05 PM	1.815972222	2
LONGA:I	11/16/08 14:00	11/17/2008 3:00 PM	1.041666667	1
S/L QUALITY	11/15/08 08:30	11/16/2008 12:11 AM	0.653472222	1
BARCELONA EXPRESS	11/15/08 06:23	11/16/2008 4:08 AM	0.90625	1
CSA: :ENEZUELA	11/14/08 16:05	11/15/2008 4:20 PM	1.010416667	1
MARLENE S	11/13/08 01:05	11/14/2008 2:55 AM	1.076388889	1
ALIOTH	11/12/08 05:48	11/12/2008 10:53 PM	0.711805556	0
CARIBBEAN SEA	11/11/08 23:26	11/13/2008 5:00 AM	1.231944444	2
S/L ATLANTIC	11/11/08 18:39	11/12/2008 7:05 PM	1.018055556	1
PHILADELPHIA EXPRESS	11/10/08 18:10	11/12/2008 6:30 PM	2.013888889	2
HERO	11/10/08 13:45	11/12/2008 8:01 AM	1.761111111	2
HORIZON CHALLENGER	11/10/08 05:35	11/15/2008 2:17 AM	4.8625	5
CAP ORTEGAL	11/08/08 05:50	11/9/2008 3:21 AM	0.896527778	1
MAERSK MONTREAL	11/07/08 19:20	11/9/2008 8:16 AM	1.538888889	2
:ERACRUZ EXPRESS	11/07/08 18:00	11/8/2008 12:55 PM	0.788194444	1
E.R.DURBAN	11/06/08 22:16	11/7/2008 7:00 PM	0.863888889	1
MAERSK ROUBAIX	11/5/2008 6:15 AM	11/6/2008 1:10 AM	0.788194444	1
WESTFALIA EXP	11/05/08 05:45	11/5/2008 9:36 PM	0.660416667	0
TURIN EXPRESS	11/05/08 04:18	11/5/2008 2:22 PM	0.419444444	0
S/L COMMITMENT	11/04/08 11:55	11/5/2008 10:33 PM	1.443055556	1
CONTI EMDEN	11/04/08 00:45	11/5/2008 2:19 AM	1.065277778	1
HEIDELBER EXP	11/03/08 21:30	11/4/2008 2:53 AM	0.224305556	1
YORK TOWN EXP	11/03/08 20:45	11/5/2008 6:38 PM	1.911805556	2
ZIM KOAHSIUNG	11/26/08 00:20	11/27/2008 1:20 AM	1.041666667	1
SAUDI ABHA	11/03/08 12:23	11/5/2008 4:53 PM	2.1875	2
CAP TRAFALGAR	11/01/08 23:12	11/2/2008 11:05 PM	0.995138889	1
S/L ACHIE:ER	10/31/08 15:35	11/2/2008 6:15 PM	2.111111111	2
LIBRA ECUADOR	10/30/08 19:00	10/31/2008 8:08 PM	1.047222222	0
GENOA EXPRESS	10/29/08 17:30	10/30/2008 8:03 PM	1.10625	1
ALTAMIRA EXPRESS	10/29/08 16:08	10/30/2008 7:13 PM	1.128472222	1
SAXONIA EXPRESS	10/29/08 11:45	10/30/2008 7:07 AM	0.806944444	1
NORTH SEA	10/29/2008 5:28 AM	10/29/2008 9:18 PM	0.659722222	0
PLUTO	10/28/08 23:56	10/29/2008 4:08 PM	0.675	1
AURETTE A	10/28/08 22:20	10/29/2008 6:26 PM	0.8375	1
S/L MOTI:ATOR	10/28/08 07:55	10/29/2008 2:16 PM	1.264583333	1
HORIZON CHALLENGER	10/28/08 06:00	11/1/2008 12:15 AM	3.760416667	3
CHARLESTON EXPRESS	10/27/08 21:45	10/29/2008 1:05 PM	1.638888889	2
S/L EAGLE	10/25/08 06:00	10/27/2008 1:05 AM	1.795138889	2
CSA: :ENEZUELA	10/24/08 03:26	10/24/2008 7:05 PM	0.652083333	0

MARLENE S	10/23/08 10:13	10/24/2008 3:39 AM	0.726388889	1
ALIOTH	10/23/08 04:00	10/23/2008 6:48 PM	0.616666667	0
SANTOS EXPRESS	10/22/08 17:23	10/23/2008 11:35 PM	1.258333333	1
JAPAN SEA	10/22/08 04:57	10/23/2008 6:05 AM	1.047222222	1
WASHINGTON EXPRESS	10/21/08 20:07	10/23/2008 5:23 AM	1.386111111	2
S/L PRIDE	10/21/08 10:35	10/22/2008 12:15 PM	1.069444444	1
LI:ORNO EXPRESS	10/21/08 04:05	10/22/2008 12:14 AM	0.839583333	1
ROME EXPRESS	10/20/08 19:15	10/29/2008 9:05 AM	8.576388889	9
SAUDI TABUK	10/18/08 21:30	10/22/2008 5:20 AM	3.326388889	4
S/L PERFORMANCE	10/18/08 06:50	10/19/2008 6:15 PM	1.475694444	1
CAP DOMINGO	10/18/08 01:35	10/19/2008 4:12 AM	1.109027778	1
LIRBA MEXICO	10/16/08 18:36	10/17/2008 2:20 PM	0.822222222	1
ST CERGUE	10/15/08 06:55	10/16/2008 5:30 AM	0.940972222	1
MAERSK ROUBAIX	10/14/08 23:41	10/16/2008 1:10 AM	1.061805556	2
S/L FLORIDA	10/14/08 15:53	10/15/2008 6:59 PM	1.129166667	1
ST LOUIS EXPRESS	10/14/08 06:30	10/15/2008 6:03 PM	1.48125	1
HORIZON CHALLENGER	10/14/08 05:30	10/18/2008 1:47 AM	3.845138889	4
BONN EXPRESS	10/13/08 22:45	10/14/2008 8:00 PM	0.885416667	1
MIZAR	10/13/08 16:00	10/14/2008 1:28 AM	0.394444444	1
TURIN EXPRESS	10/13/08 10:42	10/14/2008 12:10 AM	0.561111111	1
E.R.DURBAN	10/12/08 21:58	10/13/2008 7:00 PM	0.876388889	1
MADRID EXPRESS	10/11/08 17:09	10/12/2008 12:05 PM	0.788888889	1
S/L CHAMPION	10/11/08 07:35	10/12/2008 7:05 PM	1.479166667	1
LIBRA ECUADOR	10/11/08 06:00	10/12/2008 1:54 AM	0.829166667	1
HOLSATIA EXPRESS	10/08/08 18:25	10/9/2008 1:06 PM	0.778472222	1
ZIM CANADA	10/08/08 05:40	10/9/2008 1:56 AM	0.844444444	1
AURETTE A	10/07/08 22:21	10/8/2008 11:47 PM	1.059722222	1
S/L ATLANTIC	10/07/08 10:25	10/8/2008 12:50 PM	1.100694444	1
PHILADELPHIA EXPRESS	10/07/08 04:20	10/8/2008 3:00 PM	1.444444444	1
NEW ORLEANS EXPRESS	10/06/08 19:00	10/8/2008 1:40 AM	1.277777778	2
PLUTO	10/06/08 06:58	10/6/2008 3:15 PM	0.345138889	0
GUANABARA	10/06/08 03:55	10/7/2008 2:10 AM	0.927083333	1
ALIANCA GA:EA	10/05/08 04:05	10/6/2008 2:08 AM	0.91875	1
MAERSK MADRID	10/04/08 07:15	10/6/2008 1:25 AM	1.756944444	2
LONGA:I	10/02/08 05:07	10/3/2008 2:15 AM	0.880555556	1
ALIOTH	10/01/08 16:46	10/2/2008 7:20 AM	0.606944444	1
MARLENE S	10/01/08 12:50	10/1/2008 5:20 PM	0.1875	0
CIFIC	10/01/08 11:00	10/2/2008 2:05 AM	0.628472222	1
HERO	09/30/08 08:15	10/1/2008 8:05 AM	0.993055556	1
S/L COMMITMENT	09/30/08 06:30	10/1/2008 9:25 AM	1.121527778	1

HORIZON CHALLENGER	09/30/08 05:50	10/4/2008 1:51 AM	3.834027778	4
CSA: :ENEZUELA	09/29/08 23:25	10/1/2008 1:55 AM	1.104166667	2
BARCELONA EXPRESS	09/28/08 18:30	9/29/2008 7:15 PM	1.03125	1
MAERSK DERBY	09/26/08 15:02	9/28/2008 4:25 AM	1.557638889	2
CAP POLONIO	09/26/08 05:40	9/26/2008 11:52 PM	0.758333333	0
MAERSK ROUBAIX	09/24/08 01:50	9/24/2008 6:48 PM	0.706944444	0
CAP BLANCO	09/23/08 23:04	9/24/2008 11:00 PM	0.997222222	1
HEIDELBERG EXPRESS	09/23/08 12:00	9/24/2008 7:27 AM	0.810416667	1
S/L MOTI:ATOR	09/23/08 10:40	9/24/2008 12:22 PM	1.070833333	1
WESTERDEICH	09/23/08 06:30	9/23/2008 7:05 PM	0.524305556	0
CHARLESTON EXPRESS	09/22/08 22:00	9/24/2008 6:48 PM	1.866666667	2
E.R.DURBAN	09/22/08 16:00	9/23/2008 5:14 AM	0.551388889	1
:ERACRUZ EXPRESS	09/21/08 07:00	9/22/2008 6:02 AM	0.959722222	1
MAERSK MONTREAL	09/20/08 14:51	9/21/2008 4:47 PM	1.080555556	1
SAXONIA EXPRESS	09/20/08 10:50	9/21/2008 7:31 AM	0.861805556	1
HORIZON CHALLENGER	9/19/2008 6:11 PM	9/20/2008 3:15 PM	0.877777778	1
SAUDI DIRIYAH	9/18/2008 11:35 AM	9/21/2008 5:15 PM	3.236111111	3
TURIN EXPRESS	9/17/2008 9:33 PM	9/19/2008 12:09 PM	1.608333333	2
S/L ACHIE:ER	9/17/2008 9:07 PM	9/20/2008 6:40 AM	2.397916667	3
S/L PRIDE	9/17/2008 8:20 PM	9/19/2008 1:00 PM	1.694444444	2
WASHINGTON EXPRESS	9/17/2008 6:15 PM	9/20/2008 7:30 AM	2.552083333	3
NORDWINTER	9/10/2008 11:31 PM	9/11/2008 8:08 PM	0.859027778	1
ALIOTH	9/10/2008 10:35 PM	9/11/2008 6:01 PM	0.809722222	1
SANTOS EXPRESS	9/10/2008 8:50 AM	9/11/2008 7:05 AM	0.927083333	1
ROME EXPRESS	9/9/2008 8:11 PM	9/10/2008 2:55 PM	0.780555556	1
LI:ORNO EXPRESS	09/08/08 22:25	9/9/2008 1:10 PM	0.614583333	1
ST LOUIS EXPRESS	09/08/08 21:05	9/10/2008 5:05 AM	1.333333333	2
CAP TRAFALGAR	09/08/08 15:05	9/9/2008 8:35 AM	0.729166667	1
S/L FLORIDA	09/08/08 13:03	9/9/2008 8:09 PM	1.295833333	1
S/L ATLANTIC	09/04/08 20:38	9/6/2008 12:23 AM	1.15625	2
CARIBBEAN SEA	09/04/08 01:30	9/4/2008 8:09 PM	0.777083333	0
LIBRA ECUADOR	09/03/08 21:15	9/5/2008 10:23 AM	1.547222222	2
LIBRA MEXICO	09/03/08 18:20	9/4/2008 8:18 PM	1.081944444	1
HORIZON CHALLENGER	09/02/08 22:45	9/6/2008 2:05 AM	3.138888889	4
PHILADELPHIA EXPRESS	09/02/08 19:20	9/3/2008 8:01 PM	1.028472222	1
WESTFALIA EXPRESS	09/24/08 10:22	9/25/2008 8:02 AM	0.902777778	1
YORKTOWN EXPRESS	09/30/08 01:50	10/1/2008 5:20 PM	1.645833333	1
ZIM KOASHIUNG	09/24/08 05:25	9/25/2008 4:55 AM	0.979166667	1
BONN EXPRESS	09/02/08 17:25	9/3/2008 7:23 PM	1.081944444	1
MAERSK ROUBAIX	09/02/08 14:30	9/4/2008 11:55 PM	2.392361111	2

CSA: :ENEZUELA	09/02/08 12:35	9/3/2008 9:00 AM	0.850694444	1
SAUDI HOFUF	09/02/08 09:45	9/6/2008 1:00 PM	4.135416667	4
ALIANCA SHANGHAI	8/30/2008 7:18 AM	8/30/2008 11:11 PM	0.661805556	0
AEGEAN SEA	8/30/2008 5:45 AM	8/31/2008 7:10 AM	1.059027778	0
MAERSK DULLES	8/30/2008 1:21 AM	8/31/2008 7:55 AM	1.273611111	0
MADRID EXPRESS	8/27/2008 5:40 PM	8/28/2008 12:07 PM	0.76875	1
AURETTE A	8/27/2008 2:46 AM	8/27/2008 7:00 PM	0.676388889	0
HOLSATIA EXPRESS	8/26/2008 8:45 PM	8/28/2008 12:08 AM	1.140972222	2
TURIN EXPRESS	8/26/2008 4:20 PM	8/27/2008 11:40 AM	0.805555556	1
NEW ORLEANS EXPRESS	08/26/08 14:05	8/27/2008 7:05 PM	1.208333333	1
YORKTOWN EXPRESS	08/26/08 05:59	8/27/2008 3:25 PM	1.393055556	1
MAERSK MANDRAKI	08/25/08 15:40	8/26/2008 11:04 PM	1.308333333	1
CAP DOMINGO	08/25/08 05:25	8/26/2008 4:00 PM	1.440972222	1
E.R. DURBAN	08/24/08 16:00	8/25/2008 1:38 PM	0.901388889	1
S/L CHAMPION	08/23/08 06:40	8/24/2008 7:30 PM	1.534722222	1
LIBRA J	08/22/08 16:39	8/23/2008 6:10 AM	0.563194444	1
MARLENE S	08/21/08 21:10	8/22/2008 9:35 AM	0.517361111	1
LONGA:I	08/21/08 05:40	8/22/2008 10:10 AM	1.1875	1
NORTH SEA	08/20/08 04:28	8/20/2008 10:00 PM	0.730555556	0
S/L MOTI:ATOR	08/19/08 07:30	8/20/2008 6:18 PM	1.45	1
HORIZON CHALLENGER	08/19/08 05:35	8/23/2008 12:53 AM	3.804166667	4
CHARLESTON EXPRESS	08/18/08 21:55	8/20/2008 5:10 PM	1.802083333	2
HERO	08/18/08 20:30	8/20/2008 1:02 AM	1.188888889	2
ALIANCA GA:EA	08/16/08 11:26	8/17/2008 8:00 PM	1.356944444	1
MAERSK MADRID	08/16/08 07:40	8/17/2008 7:25 PM	1.489583333	1
BARCELONA EXPRESS	08/16/08 06:20	8/16/2008 11:50 PM	0.729166667	0
MAERSK ROUBIAX	08/13/08 17:10	8/14/2008 6:05 AM	0.538194444	1
WASHINGTON EXPRESS	08/13/08 08:25	8/14/2008 6:53 PM	1.436111111	1
WESTERDEICH	08/12/08 23:18	8/14/2008 12:55 AM	1.067361111	2
JAPAN SEA	08/12/08 18:20	8/13/2008 6:45 PM	1.017361111	1
S/L PRIDE	08/12/08 15:30	8/13/2008 8:06 PM	1.191666667	1
HEIDELBERG EXPRESS	08/11/08 23:50	8/12/2008 11:54 PM	1.002777778	1
WESTFALIA EXPRESS	08/11/08 07:35	8/12/2008 6:30 AM	0.954861111	1
CAP POLONIO	08/10/08 06:45	8/11/2008 12:15 AM	0.729166667	1
S/L QUALITY	08/09/08 05:45	8/11/2008 1:10 AM	1.809027778	2
CSA: :ENEZUELA	08/08/08 19:50	8/10/2008 1:05 AM	1.21875	2
HORIZON CHALLENGER	08/08/08 06:02	8/9/2008 1:00 AM	0.790277778	1
SAUDI ABHA	08/07/08 19:30	8/12/2008 2:30 AM	4.291666667	5
AURETTE A	8/6/2008 11:00 PM	8/7/2008 11:40 PM	1.027777778	1
ST CERGUE	8/6/2008 5:32 PM	8/7/2008 9:15 PM	1.154861111	1

ALTAMIRA EXPRESS	8/6/2008 4:30 PM	8/7/2008 8:40 PM	1.173611111	1
SAXONIA EXPRESS	8/6/2008 11:10 AM	8/7/2008 1:15 PM	1.086805556	1
ST LOUIS EXPRESS	8/6/2008 4:15 AM	8/8/2008 1:08 AM	1.870138889	2
S/L FLORIDA	8/6/2008 2:30 AM	8/8/2008 12:17 AM	1.907638889	2
TURIN EXPRESS	8/4/2008 5:15 AM	8/4/2008 1:29 PM	0.343055556	0
CAP BLANCO	8/4/2008 4:55 AM	8/6/2008 9:15 AM	2.180555556	2
:ERACRUZ EXPRESS	8/3/2008 5:40 PM	8/4/2008 2:19 PM	0.860416667	1
MAERSK MONTREAL	8/1/2008 10:00 PM	8/4/2008 1:20 AM	2.138888889	3
E.R. DURBAN	7/31/2008 4:17 PM	8/2/2008 6:12 AM	1.579861111	2
ZIM CANADA	7/30/2008 4:55 AM	7/31/2008 1:17 PM	1.348611111	0
SANTOS EXPRESS	7/30/2008 4:25 AM	7/31/2008 2:15 AM	0.909722222	0
S/L ATLANTIC	7/29/2008 2:45 PM	7/30/2008 9:09 PM	1.266666667	1
MARLENE S	7/29/2008 8:40 AM	7/29/2008 8:57 PM	0.511805556	0
PHILADELPHIA EXPRESS	7/28/2008 11:25 PM	7/30/2008 11:18 PM	1.995138889	2
LI:ORNO EXPRESS	7/28/2008 7:45 PM	7/30/2008 1:25 AM	1.236111111	2
CAP FINISTERRE	7/27/2008 4:30 PM	7/28/2008 4:27 PM	0.997916667	1
GENOA EXPRESS	7/27/2008 11:52 AM	7/28/2008 7:05 AM	0.800694444	1
S/L ACHIE:ER	7/26/2008 6:54 AM	7/28/2008 6:05 AM	1.965972222	2
SIERRA EXPRESS	7/25/2008 10:03 AM	7/26/2008 1:00 AM	0.622916667	1
SAUDI TABUK	7/24/2008 11:15 PM	7/30/2008 3:05 PM	5.659722222	6
LIBRA MEXICO	7/24/2008 8:25 PM	7/26/2008 9:40 AM	1.552083333	2
MAERSK ROUBIAX	7/23/2008 6:44 AM	7/24/2008 6:06 PM	1.473611111	1
CIFIC	7/23/2008 5:17 AM	7/24/2008 12:00 PM	1.279861111	1
YORKTOWN EXPRESS	7/22/2008 9:43 PM	7/24/2008 1:25 PM	1.654166667	2
BONN EXPRESS	7/22/2008 9:35 AM	7/25/2008 2:23 PM	3.2	3
HORIZON CHALLENGER	7/22/2008 6:25 AM	7/26/2008 1:00 PM	4.274305556	4
MAERSK MANDRAKI	7/22/2007 7:35 AM	7/25/2007 2:47 PM	3.3	3
ROME EXPRESS	7/21/2008 3:55 PM	7/22/2008 2:19 PM	0.933333333	1
CAP TRAFALGAR	7/20/2008 7:40 PM	7/21/2008 8:55 PM	1.052083333	1
CSA: :ENEZUELA	7/19/2008 8:50 PM	7/20/2008 11:59 PM	1.13125	1
GUANABARA	7/18/2008 11:30 AM	7/19/2008 7:08 AM	0.818055556	1
S/L EAGLE	7/18/2008 6:55 AM	7/20/2008 6:05 PM	2.465277778	2
WESTERDIECH	7/17/2008 6:30 PM	7/18/2008 5:55 PM	0.975694444	1
AURETTE A	7/15/2008 11:27 PM	7/16/2008 11:50 PM	1.015972222	1
HOLSATIA EXPRESS	7/14/2008 10:35 PM	7/16/2008 1:22 AM	1.115972222	2
NEW ORLEANS EXPRESS	7/14/2008 8:45 PM	7/16/2008 4:30 PM	1.822916667	2
CHARLESTON EXPRESS	7/14/2008 12:30 PM	7/17/2008 12:25 AM	2.496527778	3
S/L MOTI:ATOR	7/14/2008 11:55 AM	7/16/2008 12:55 PM	2.041666667	2
CSA: COLOMBIA	7/14/2008 3:20 AM	7/14/2008 7:00 PM	0.652777778	0
S/L INTEGRITY	7/12/2008 6:50 AM	7/14/2008 1:05 AM	1.760416667	2

LONGA:I	7/11/2008 7:57 PM	7/14/2008 10:15 AM	2.595833333	3
LIBRA J	7/10/2008 9:35 AM	7/11/2008 12:14 AM	0.610416667	1
MADRID EXPRESS	7/9/2008 8:43 PM	7/11/2008 1:00 AM	1.178472222	2
ZIM KOREA	7/9/2008 5:34 PM	7/11/2008 7:10 AM	1.566666667	2
S/L PRIDE	7/9/2008 10:20 AM	7/10/2008 2:00 PM	1.152777778	1
MARLENE S	7/9/2008 4:16 AM	7/9/2008 10:53 PM	0.775694444	0
HERO	7/8/2008 8:12 AM	7/9/2008 11:30 AM	1.1375	1
WASHINGTON EXPRESS	7/8/2008 7:00 AM	7/9/2008 5:07 PM	1.421527778	1
HORIZON CHALLENGER	7/8/2008 5:47 AM	7/12/2008 12:06 AM	3.763194444	4
S/L CHAMPION	7/5/2008 5:50 AM	7/7/2008 12:20 AM	1.770833333	2
CAP DOMINGO	7/5/2008 4:52 AM	7/5/2008 11:56 PM	0.794444444	0
CCNI :ERACRUZ	7/3/2008 11:54 PM	7/4/2008 9:55 AM	0.417361111	1
SIERRA EXPRESS	7/2/2008 6:10 PM	7/3/2008 8:10 AM	0.583333333	1
BARCELONA EXPRESS	7/2/2008 4:00 PM	7/3/2008 6:05 PM	1.086805556	1
EMIRATES SPRING	7/2/2008 3:50 AM	7/3/2008 4:29 AM	1.027083333	1
MAERSK ROUBIAX	7/1/2008 8:49 PM	7/3/2008 1:00 AM	1.174305556	2
S/L PERFORMANCE	7/1/2008 8:49 PM	7/3/2008 1:20 AM	1.188194444	2
HEIDELBERG EXPRESS	7/1/2008 12:05 PM	7/2/2008 12:11 PM	1.004166667	1
ST LOUIS EXPRESS	7/1/2008 1:57 AM	7/2/2008 5:31 PM	1.648611111	1
WESTFALIA EXPRESS	6/30/2008 7:00 PM	7/1/2008 6:50 PM	0.993055556	1
		Avg Days at Port	**1.175497262**	
		Max Days at Port	**9.267361111**	
		Min Days at Port	**0.145138889**	

Table A.2. Barbours Cut vessel arrivals and departures per day

ARRIVALS		**DEPARTURES**	
8/7/2008	1	7/1/2008	1
8/8/2008	2	1/1/2009	1
8/9/2008	1	1/1/2011	3
8/10/2008	1	1/10/2009	1
8/11/2008	2	1/11/2010	2
8/12/2008	3	1/11/2011	3
8/13/2008	2	1/12/2009	3
8/16/2008	3	1/12/2010	1
8/18/2008	2	1/12/2011	1
8/19/2008	2	1/13/2009	1
8/20/2008	1	1/13/2010	3
8/21/2008	2	1/13/2011	3
8/22/2008	1	1/14/2009	4

8/23/2008	1	1/14/2011	1
8/24/2008	1	1/15/2009	1
8/25/2008	2	1/15/2010	2
8/26/2008	2	1/16/2009	1
9/2/2008	6	1/16/2010	2
9/3/2008	2	1/16/2011	1
9/4/2008	2	1/17/2011	2
9/8/2008	4	1/18/2010	2
9/20/2008	2	1/18/2011	2
9/21/2008	1	1/19/2009	2
9/22/2008	2	1/19/2010	2
9/23/2008	4	1/2/2009	2
9/24/2008	3	1/2/2010	1
9/26/2008	2	1/2/2010	1
9/28/2008	1	1/20/2009	1
9/29/2008	1	1/20/2011	5
9/30/2008	4	1/21/2009	4
10/1/2008	3	1/21/2010	5
10/2/2008	1	1/21/2011	1
10/4/2008	1	1/22/2009	3
10/5/2008	1	1/22/2010	1
10/6/2008	3	1/22/2011	1
10/7/2008	3	1/23/2010	2
10/8/2008	2	1/23/2011	1
10/11/2008	3	1/24/2009	1
10/12/2008	1	1/25/2010	1
10/13/2008	3	1/25/2011	4
10/14/2008	4	1/26/2009	1
10/15/2008	1	1/26/2010	4
10/16/2008	1	1/26/2011	2
10/18/2008	3	1/27/2009	2
10/20/2008	1	1/27/2010	2
10/21/2008	3	1/27/2011	1
10/22/2008	2	1/28/2009	3
10/23/2008	2	1/28/2010	2
10/24/2008	1	1/29/2009	3
10/25/2008	1	1/29/2010	1
10/27/2008	1	1/30/2009	1
10/28/2008	4	1/30/2010	2
10/29/2008	3	1/31/2010	1

10/30/2008	1	1/4/2010	1
10/31/2008	1	1/4/2011	1
11/1/2008	1	1/5/2009	2
11/3/2008	3	1/5/2010	1
11/4/2008	2	1/5/2011	1
11/5/2008	2	1/6/2009	1
11/6/2008	1	1/6/2010	3
11/7/2008	2	1/6/2011	1
11/8/2008	1	1/7/2009	2
11/10/2008	3	1/7/2010	1
11/11/2008	2	1/7/2011	2
11/12/2008	1	1/8/2009	4
11/13/2008	1	1/8/2010	5
11/14/2008	1	1/8/2011	2
11/15/2008	2	1/9/2009	1
11/16/2008	1	1/9/2011	1
11/17/2008	1	10/1/2008	5
11/18/2008	2	10/1/2009	3
11/19/2008	1	10/11/2010	3
11/20/2008	1	10/12/2008	3
11/21/2008	1	10/12/2009	2
11/22/2008	1	10/12/2010	1
11/23/2008	1	10/13/2008	1
11/24/2008	3	10/13/2009	1
11/25/2008	3	10/13/2010	4
11/26/2008	2	10/14/2008	3
11/29/2008	3	10/14/2009	3
11/30/2008	1	10/15/2008	2
12/1/2008	3	10/15/2009	1
12/2/2008	2	10/15/2010	2
12/3/2008	2	10/16/2008	2
12/4/2008	2	10/16/2009	3
12/6/2008	1	10/17/2008	1
12/8/2008	1	10/17/2009	1
12/9/2008	3	10/17/2010	1
12/10/2008	4	10/18/2008	1
12/11/2008	1	10/18/2010	2
12/13/2008	2	10/19/2008	2
12/14/2008	2	10/19/2009	1
12/15/2008	2	10/19/2010	2

4/6/2009	4	10/2/2008	2
4/7/2009	3	10/2/2009	3
4/8/2009	2	10/20/2009	2
4/9/2009	1	10/20/2010	2
4/10/2009	1	10/21/2009	3
10/19/2010	3	10/21/2010	1
10/20/2010	1	10/22/2008	3
10/21/2010	1	10/22/2009	3
10/22/2010	1	10/22/2010	2
10/24/2010	1	10/23/2008	4
10/25/2010	3	10/23/2009	1
10/26/2010	1	10/23/2010	1
10/27/2010	4	10/24/2008	2
10/28/2010	2	10/25/2009	1
10/31/2010	2	10/25/2010	1
11/1/2010	1	10/26/2009	2
11/2/2010	3	10/26/2010	3
11/3/2010	1	10/27/2008	1
11/4/2010	2	10/27/2009	2
11/7/2010	2	10/27/2010	1
11/8/2010	3	10/28/2009	3
11/9/2010	1	10/28/2010	4
11/10/2010	4	10/29/2008	6
11/11/2010	3	10/29/2009	1
11/14/2010	2	10/29/2010	2
11/15/2010	3	10/3/2008	1
11/16/2010	1	10/3/2009	1
11/17/2010	2	10/30/2008	3
11/18/2010	3	10/30/2009	3
11/21/2010	1	10/31/2008	1
11/22/2010	4	10/4/2008	1
11/23/2010	1	10/4/2010	2
11/24/2010	3	10/5/2010	4
11/26/2010	1	10/6/2008	3
11/28/2010	1	10/6/2009	4
11/29/2010	3	10/6/2010	3
11/30/2010	1	10/7/2008	1
12/1/2010	1	10/7/2009	3
12/2/2010	3	10/8/2008	4
12/4/2010	1	10/8/2009	3

12/5/2010	3	10/8/2010	2
12/6/2010	3	10/9/2008	2
12/8/2010	1	11/1/2008	1
12/9/2010	1	11/1/2010	3
12/10/2010	1	11/10/2009	2
12/12/2010	2	11/10/2010	3
12/13/2010	2	11/11/2009	3
12/14/2010	2	11/11/2010	4
12/15/2010	3	11/12/2008	4
1/1/2009	2	11/12/2009	1
1/1/2010	2	11/12/2010	1
1/1/2011	1	11/13/2008	1
1/10/2009	1	11/13/2009	4
1/10/2010	1	11/13/2010	1
1/10/2011	3	11/14/2008	1
1/11/2009	1	11/14/2009	1
1/11/2010	2	11/15/2008	2
1/11/2011	2	11/15/2010	2
1/12/2009	1	11/16/2008	2
1/12/2010	2	11/16/2010	1
1/12/2011	2	11/17/2008	1
1/13/2009	4	11/17/2009	2
1/13/2010	1	11/17/2010	4
1/13/2011	1	11/18/2009	4
1/14/2009	2	11/18/2010	1
1/14/2010	2	11/19/2008	3
1/15/2009	1	11/19/2009	2
1/15/2010	2	11/19/2010	3
1/16/2011	4	11/2/2008	2
1/17/2010	2	11/2/2009	2
1/17/2011	2	11/20/2008	1
1/18/2009	2	11/20/2009	1
1/18/2010	2	11/21/2008	1
1/18/2011	1	11/21/2009	1
1/19/2009	1	11/22/2010	1
1/19/2010	5	11/23/2008	3
1/19/2011	1	11/23/2009	1
1/20/2009	5	11/23/2010	3
1/20/2011	3	11/24/2009	2
1/21/2009	3	11/24/2010	2

1/21/2010	2	11/25/2008	2
1/21/2011	1	11/25/2009	4
1/22/2010	2	11/25/2010	2
1/23/2011	4	11/26/2008	4
1/24/2010	1	11/26/2009	3
1/24/2011	1	11/26/2010	1
1/25/2009	2	11/27/2008	1
1/25/2010	3	11/27/2010	1
1/25/2011	1	11/29/2008	1
1/26/2009	1	11/29/2010	1
1/26/2010	2	11/3/2009	2
1/26/2011	2	11/3/2010	3
1/27/2009	3	11/30/2008	2
1/27/2010	1	11/30/2009	3
1/28/2009	4	11/30/2010	2
1/28/2010	3	11/4/2008	1
1/29/2010	1	11/4/2009	2
1/3/2009	1	11/4/2010	3
1/3/2011	2	11/5/2008	6
1/30/2010	2	11/5/2009	1
1/4/2010	3	11/6/2008	1
1/5/2009	3	11/6/2009	2
1/5/2010	2	11/7/2008	1
1/6/2009	3	11/7/2009	1
1/6/2010	1	11/8/2008	1
1/6/2011	3	11/8/2010	3
1/7/2009	1	11/9/2008	2
1/7/2010	5	11/9/2010	1
1/8/2009	1	12/1/2008	3
1/8/2011	3	12/1/2009	2
1/9/2009	2	12/1/2010	3
10/1/2009	2	12/10/2008	2
10/1/2010	1	12/10/2009	4
10/10/2010	2	12/10/2010	3
10/11/2010	3	12/11/2008	3
10/12/2009	5	12/11/2009	1
10/12/2010	3	12/11/2010	1
10/13/2009	1	12/12/2008	1
10/13/2010	1	12/12/2009	2
10/14/2009	3	12/13/2008	2

10/15/2009	2	12/13/2010	4
10/15/2010	1	12/14/2008	1
10/16/2010	1	12/14/2010	1
10/17/2010	2	12/15/2008	3
10/18/2010	2	12/15/2009	1
10/19/2009	4	12/15/2010	3
10/20/2009	3	12/16/2010	3
10/21/2009	3	12/17/2008	4
10/23/2009	1	12/17/2009	6
10/26/2009	6	12/18/2009	3
10/28/2009	3	12/19/2008	1
10/29/2008	1	12/19/2009	2
10/29/2009	2	12/2/2008	1
10/3/2010	2	12/2/2010	1
10/4/2009	1	12/20/2010	1
10/4/2010	4	12/21/2010	1
10/5/2009	3	12/22/2008	3
10/5/2010	2	12/22/2009	1
10/6/2009	3	12/23/2008	1
10/7/2009	2	12/23/2009	3
10/7/2010	1	12/23/2010	2
10/8/2009	1	12/24/2008	1
10/8/2010	1	12/24/2009	3
11/10/2009	2	12/24/2010	4
11/11/2009	3	12/25/2009	1
11/12/2009	2	12/26/2008	2
11/13/2009	1	12/26/2010	2
11/15/2009	1	12/27/2008	5
11/16/2009	2	12/27/2009	3
11/17/2009	3	12/27/2010	4
11/18/2009	2	12/28/2008	1
11/19/2009	1	12/28/2009	1
11/2/2009	5	12/28/2010	1
11/20/2009	1	12/29/2008	4
11/22/2009	1	12/29/2009	1
11/23/2009	3	12/29/2010	1
11/24/2009	2	12/3/2008	4
11/25/2009	4	12/3/2009	1
11/29/2009	3	12/3/2010	2
11/3/2009	1	12/30/2008	1

11/30/2009	1	12/30/2009	2
11/4/2009	2	12/30/2010	4
11/5/2008	1	12/31/2008	3
11/5/2009	1	12/31/2009	3
11/6/2009	1	12/31/2010	1
11/9/2009	3	12/4/2008	1
12/1/2009	2	12/4/2009	3
12/10/2009	2	12/5/2008	2
12/10/2010	1	12/5/2010	1
12/11/2009	1	12/6/2010	2
12/15/2009	1	12/7/2010	2
12/16/2008	3	12/8/2008	1
12/16/2009	5	12/8/2009	2
12/16/2010	2	12/8/2010	2
12/17/2009	4	12/9/2008	1
12/18/2009	1	12/9/2009	1
12/19/2010	1	12/9/2010	1
12/2/2009	3	2/10/2009	3
12/20/2009	1	2/10/2010	3
12/21/2008	4	2/11/2009	1
12/21/2010	3	2/11/2010	2
12/22/2008	1	2/12/2009	2
12/22/2009	4	2/13/2009	3
12/23/2008	1	2/14/2009	1
12/23/2009	2	2/16/2009	2
12/23/2010	5	2/16/2010	2
12/24/2008	5	2/17/2009	3
12/24/2009	1	2/17/2010	2
12/24/2010	1	2/18/2009	2
12/25/2008	1	2/18/2010	3
12/25/2009	2	2/19/2009	2
12/26/2009	1	2/19/2010	3
12/26/2010	3	2/2/2009	3
12/27/2008	1	2/2/2010	2
12/27/2009	1	2/20/2009	1
12/27/2010	2	2/20/2010	1
12/28/2008	4	2/21/2009	1
12/28/2009	1	2/22/2010	1
12/28/2010	2	2/23/2009	1
12/29/2008	1	2/23/2010	3

12/29/2009	1	2/24/2009	1
12/29/2010	5	2/24/2010	3
12/3/2009	1	2/25/2009	3
12/30/2008	3	2/25/2010	2
12/30/2009	4	2/26/2009	6
12/31/2008	1	2/26/2010	1
12/31/2010	1	2/3/2009	2
12/7/2009	2	2/3/2010	5
12/8/2009	5	2/4/2009	2
12/9/2010	1	2/4/2010	2
2/1/2009	2	2/5/2009	1
2/1/2010	4	2/5/2010	2
2/10/2009	2	2/6/2009	3
2/10/2010	1	2/7/2009	1
2/11/2009	3	2/8/2009	1
2/11/2010	1	2/9/2010	5
2/13/2009	2	3/10/2009	3
2/15/2009	1	3/10/2010	2
2/15/2010	4	3/11/2009	4
2/16/2009	4	3/11/2010	1
2/17/2009	4	3/13/2009	4
2/17/2010	3	3/13/2010	4
2/18/2010	4	3/15/2010	1
2/19/2009	2	3/16/2010	3
2/2/2009	3	3/17/2009	3
2/2/2010	2	3/17/2010	1
2/20/2010	1	3/18/2009	3
2/22/2009	1	3/18/2010	2
2/22/2010	4	3/19/2009	4
2/23/2009	1	3/19/2010	1
2/23/2010	2	3/2/2009	1
2/24/2009	4	3/2/2010	3
2/24/2010	2	3/20/2009	2
2/25/2009	5	3/20/2010	2
2/25/2010	1	3/21/2010	1
2/28/2010	2	3/23/2010	2
2/3/2009	2	3/24/2009	2
2/3/2010	2	3/24/2010	4
2/4/2009	1	3/25/2009	5
2/4/2010	1	3/25/2010	2

2/5/2009	3	3/26/2009	2
2/5/2010	1	3/26/2010	1
2/6/2009	1	3/27/2009	1
2/7/2009	1	3/27/2010	1
2/7/2010	1	3/28/2010	1
2/8/2009	1	3/29/2009	1
2/8/2010	5	3/3/2010	4
2/9/2009	2	3/30/2010	4
2/9/2010	2	3/31/2009	2
3/1/2009	1	3/31/2010	4
3/1/2010	1	3/4/2009	7
3/10/2009	2	3/4/2010	2
3/10/2010	1	3/5/2009	2
3/11/2009	1	3/5/2010	2
3/12/2009	1	3/6/2009	3
3/12/2010	3	3/9/2010	3
3/13/2009	2	4/1/2009	5
3/14/2010	1	4/1/2010	1
3/15/2010	3	4/10/2009	1
3/16/2009	5	4/10/2010	2
3/16/2010	1	4/11/2009	1
3/17/2009	1	4/12/2010	2
3/17/2010	1	4/13/2010	1
3/18/2009	5	4/14/2009	4
3/18/2010	3	4/14/2010	4
3/19/2009	1	4/15/2009	3
3/19/2010	1	4/15/2010	1
3/2/2009	2	4/16/2009	2
3/2/2010	3	4/16/2010	3
3/20/2010	1	4/19/2009	2
3/21/2010	1	4/2/2009	4
3/22/2009	2	4/2/2010	1
3/22/2010	1	4/20/2010	3
3/23/2009	1	4/21/2009	5
3/23/2010	4	4/21/2010	5
3/24/2009	4	4/22/2009	3
3/24/2010	2	4/22/2010	1
3/25/2009	3	4/23/2009	1
3/25/2010	2	4/23/2010	1
3/26/2010	1	4/24/2009	2

3/27/2009	1	4/26/2010	1
3/28/2009	1	4/27/2010	1
3/28/2010	1	4/28/2009	4
3/29/2010	3	4/28/2010	4
3/3/2009	4	4/29/2009	3
3/3/2010	3	4/29/2010	2
3/30/2009	3	4/30/2009	3
3/30/2010	3	4/4/2009	1
3/31/2009	4	4/5/2009	1
3/31/2010	1	4/6/2010	3
3/4/2009	4	4/7/2009	5
3/4/2010	2	4/7/2010	3
3/5/2009	2	4/8/2009	3
3/7/2010	1	4/8/2010	2
3/8/2009	1	4/9/2009	2
3/8/2010	2	5/1/2009	1
3/9/2009	4	5/1/2010	1
3/9/2010	3	5/10/2010	1
4/1/2009	4	5/11/2009	1
4/1/2010	2	5/11/2010	3
4/11/2010	1	5/12/2009	2
4/12/2009	1	5/12/2010	3
4/12/2010	2	5/13/2009	5
4/13/2009	4	5/13/2010	1
4/13/2010	4	5/14/2009	2
4/14/2009	2	5/14/2010	2
4/14/2010	3	5/15/2009	1
4/15/2009	2	5/15/2010	1
4/15/2010	1	5/16/2009	1
4/16/2009	1	5/17/2010	2
4/18/2009	1	5/18/2010	2
4/18/2010	1	5/19/2009	4
4/19/2009	2	5/19/2010	1
4/19/2010	3	5/2/2009	1
4/2/2009	1	5/20/2009	2
4/20/2009	2	5/20/2010	1
4/20/2010	3	5/21/2009	2
4/21/2009	3	5/21/2010	2
4/21/2010	2	5/22/2009	1
4/22/2009	3	5/22/2010	1

4/22/2010	1	5/23/2009	1
4/23/2009	1	5/23/2010	1
4/25/2010	1	5/24/2010	2
4/26/2009	1	5/25/2009	2
4/26/2010	1	5/25/2010	1
4/27/2009	4	5/26/2009	3
4/27/2010	3	5/26/2010	3
4/28/2009	2	5/27/2009	4
4/28/2010	4	5/27/2010	1
4/29/2009	4	5/28/2009	1
4/30/2009	1	5/28/2010	2
4/5/2009	1	5/29/2009	1
4/5/2010	3	5/29/2010	1
4/6/2010	4	5/3/2010	1
4/7/2010	2	5/30/2009	1
4/9/2010	1	5/31/2010	2
5/10/2009	2	5/4/2009	1
5/10/2010	2	5/4/2010	2
5/11/2009	2	5/5/2009	3
5/11/2010	4	5/5/2010	5
5/12/2009	4	5/6/2009	3
5/12/2010	2	5/6/2010	1
5/13/2009	2	5/7/2009	2
5/13/2010	1	5/8/2009	1
5/14/2009	2	5/8/2010	1
5/14/2010	1	5/9/2009	1
5/16/2010	1	6/1/2010	1
5/17/2010	3	6/10/2009	4
5/18/2009	4	6/10/2010	2
5/18/2010	1	6/12/2009	2
5/19/2009	3	6/12/2010	1
5/19/2010	2	6/13/2009	1
5/2/2010	1	6/13/2010	1
5/20/2009	1	6/15/2010	3
5/20/2010	1	6/16/2009	4
5/21/2009	1	6/16/2010	5
5/21/2010	2	6/17/2009	4
5/23/2009	1	6/18/2009	1
5/23/2010	1	6/18/2010	2
5/24/2009	3	6/19/2009	1

5/24/2010	3	6/19/2010	1
5/25/2009	3	6/2/2009	4
5/25/2010	2	6/2/2010	4
5/26/2009	2	6/21/2009	1
5/26/2010	2	6/21/2010	2
5/27/2009	3	6/22/2009	1
5/27/2010	1	6/22/2010	2
5/28/2009	2	6/23/2009	3
5/29/2010	1	6/23/2010	4
5/3/2009	2	6/24/2009	3
5/3/2010	2	6/24/2010	1
5/30/2010	1	6/25/2009	4
5/31/2009	2	6/25/2010	1
5/31/2010	3	6/26/2009	1
5/4/2009	3	6/26/2010	1
5/4/2010	4	6/28/2010	1
5/5/2009	2	6/29/2010	3
5/5/2010	2	6/3/2009	3
5/6/2009	3	6/3/2010	2
5/6/2010	1	6/30/2009	5
5/7/2009	1	6/30/2010	2
5/9/2010	1	6/4/2009	1
6/1/2009	2	6/4/2009	3
6/1/2010	3	6/5/2009	1
6/10/2009	2	6/6/2010	1
6/10/2010	1	6/7/2010	2
6/11/2009	2	6/8/2010	2
6/11/2010	2	6/9/2009	4
6/13/2010	3	6/9/2010	3
6/14/2010	1	7/1/2009	3
6/15/2009	4	7/1/2010	4
6/15/2010	3	7/10/2008	1
6/16/2009	4	7/10/2009	2
6/16/2010	1	7/10/2010	1
6/17/2009	1	7/11/2008	3
6/17/2010	1	7/11/2009	1
6/18/2009	1	7/12/2008	1
6/18/2010	2	7/12/2010	1
6/2/2009	3	7/13/2010	1
6/2/2010	2	7/14/2008	3

6/20/2009	1	7/14/2009	4
6/20/2010	1	7/14/2010	3
6/21/2009	3	7/15/2009	4
6/21/2010	4	7/16/2008	4
6/22/2009	1	7/16/2009	2
6/22/2010	3	7/17/2008	1
6/23/2009	4	7/17/2009	2
6/23/2010	1	7/18/2008	1
6/24/2009	3	7/18/2010	1
6/24/2010	1	7/19/2008	1
6/25/2009	1	7/19/2010	1
6/25/2010	1	7/2/2008	2
6/27/2010	2	7/2/2009	2
6/28/2009	1	7/20/2008	2
6/28/2010	4	7/20/2009	1
6/29/2009	4	7/20/2010	2
6/29/2010	3	7/21/2008	1
6/3/2009	3	7/21/2009	2
6/3/2010	1	7/21/2010	4
6/30/2008	1	7/22/2008	1
6/30/2009	3	7/22/2009	5
6/30/2010	1	7/22/2010	2
6/4/2009	1	7/23/2009	2
6/6/2010	2	7/23/2010	1
6/7/2009	1	7/24/2008	3
6/7/2010	2	7/24/2010	1
6/8/2009	2	7/25/2007	1
6/8/2010	3	7/25/2008	1
6/9/2009	4	7/25/2009	1
6/9/2010	1	7/26/2008	3
7/1/2008	4	7/27/2009	2
7/1/2009	2	7/27/2010	4
7/1/2010	1	7/28/2008	3
7/10/2008	1	7/28/2009	3
7/11/2008	1	7/28/2010	3
7/11/2010	1	7/29/2008	1
7/12/2008	1	7/29/2009	4
7/12/2009	1	7/29/2010	2
7/12/2010	1	7/3/2008	5
7/13/2009	3	7/3/2010	1

7/13/2010	3	7/30/2008	4
7/14/2008	5	7/30/2009	1
7/14/2009	5	7/31/2008	2
7/15/2008	1	7/31/2009	1
7/15/2009	2	7/4/2008	1
7/16/2009	1	7/4/2010	1
7/16/2010	1	7/5/2008	1
7/17/2008	1	7/5/2010	1
7/18/2008	2	7/6/2009	1
7/18/2010	1	7/6/2010	2
7/19/2008	1	7/7/2008	1
7/19/2009	1	7/7/2009	1
7/19/2010	4	7/7/2010	3
7/2/2008	3	7/8/2009	4
7/20/2008	1	7/8/2010	1
7/20/2009	4	7/9/2008	3
7/20/2010	2	7/9/2009	3
7/21/2008	1	7/9/2010	1
7/21/2009	3	8/10/2008	1
7/21/2010	1	8/10/2009	1
7/22/2007	1	8/10/2010	3
7/22/2008	3	8/11/2008	2
7/22/2009	2	8/11/2009	4
7/22/2010	2	8/11/2010	3
7/23/2008	2	8/12/2008	3
7/23/2009	1	8/12/2009	3
7/23/2010	1	8/12/2010	1
7/24/2008	2	8/13/2008	2
7/25/2008	1	8/13/2009	2
7/26/2008	1	8/13/2010	2
7/26/2009	2	8/14/2008	3
7/26/2010	4	8/14/2009	1
7/27/2008	2	8/16/2008	1
7/27/2009	4	8/16/2010	1
7/27/2010	3	8/17/2008	2
7/28/2008	2	8/17/2009	1
7/28/2009	3	8/17/2010	3
7/28/2010	1	8/18/2009	2
7/29/2008	2	8/18/2010	5
7/29/2009	2	8/19/2009	4

7/29/2010	1	8/2/2008	1
7/3/2008	1	8/2/2010	2
7/3/2010	1	8/20/2008	4
7/30/2008	2	8/20/2009	2
7/31/2008	1	8/20/2010	2
7/4/2010	1	8/21/2010	2
7/5/2008	2	8/22/2008	2
7/5/2010	2	8/22/2009	2
7/6/2009	4	8/23/2008	2
7/6/2010	3	8/23/2010	2
7/7/2009	3	8/24/2008	1
7/7/2010	2	8/24/2009	1
7/8/2008	3	8/24/2010	2
7/8/2009	2	8/25/2008	1
7/9/2008	4	8/25/2009	3
7/9/2009	3	8/25/2010	4
7/9/2010	1	8/26/2008	2
8/1/2008	1	8/26/2009	3
8/1/2010	2	8/26/2010	2
8/10/2009	4	8/27/2008	4
8/10/2010	2	8/27/2009	2
8/11/2009	3	8/27/2010	1
8/11/2010	1	8/28/2008	2
8/12/2009	2	8/3/2009	2
8/12/2010	2	8/3/2010	3
8/13/2009	1	8/30/2008	1
8/15/2010	2	8/30/2009	1
8/16/2009	1	8/31/2008	2
8/16/2010	3	8/31/2009	1
8/17/2009	1	8/31/2010	2
8/17/2010	4	8/4/2008	3
8/18/2009	5	8/4/2009	2
8/19/2009	2	8/4/2010	4
8/19/2010	1	8/5/2009	5
8/2/2009	2	8/5/2010	1
8/2/2010	4	8/6/2008	1
8/20/2009	1	8/6/2009	3
8/20/2010	3	8/6/2010	1
8/21/2009	1	8/7/2008	4
8/22/2010	1	8/8/2008	2

8/23/2010	4	8/8/2009	1
8/24/2009	6	8/9/2008	1
8/24/2010	4	8/9/2010	2
8/25/2009	1	9/1/2009	2
8/26/2008	2	9/1/2010	3
8/26/2009	2	9/10/2008	2
8/26/2010	1	9/10/2009	3
8/27/2008	2	9/10/2010	3
8/27/2010	1	9/11/2008	3
8/29/2009	1	9/12/2009	1
8/3/2008	1	9/13/2010	2
8/3/2009	5	9/14/2010	3
8/3/2010	3	9/15/2009	2
8/30/2008	3	9/15/2010	2
8/30/2009	1	9/16/2009	5
8/30/2010	3	9/16/2010	3
8/31/2009	3	9/17/2009	2
8/31/2010	2	9/19/2008	2
8/4/2008	2	9/19/2009	2
8/4/2009	1	9/19/2010	1
8/4/2010	1	9/2/2009	4
8/5/2009	4	9/2/2010	2
8/5/2010	1	9/20/2008	3
8/6/2008	6	9/20/2010	2
8/6/2009	1	9/21/2008	3
8/8/2010	3	9/21/2010	1
8/9/2009	1	9/22/2008	1
8/9/2010	3	9/22/2009	4
9/1/2009	3	9/22/2010	3
9/1/2010	1	9/23/2008	2
9/10/2008	3	9/23/2009	3
9/10/2009	1	9/23/2010	2
9/10/2010	1	9/24/2008	5
9/12/2010	2	9/24/2009	2
9/13/2010	4	9/25/2008	2
9/14/2009	5	9/25/2010	1
9/14/2010	1	9/26/2008	1
9/15/2009	2	9/26/2010	1
9/15/2010	1	9/27/2010	2
9/16/2009	2	9/28/2008	1

9/16/2010	2	9/28/2010	1
9/17/2008	4	9/29/2008	1
9/17/2009	2	9/29/2009	2
9/17/2010	1	9/29/2010	5
9/18/2008	1	9/3/2008	3
9/19/2008	1	9/3/2009	2
9/19/2010	2	9/3/2010	1
9/2/2009	4	9/30/2009	4
9/2/2010	2	9/30/2010	3
9/20/2009	1	9/4/2008	3
9/21/2009	3	9/4/2009	2
9/21/2010	4	9/4/2010	1
9/22/2009	3	9/5/2008	1
9/22/2010	1	9/6/2008	3
9/23/2009	2	9/6/2009	1
9/23/2010	1	9/6/2010	1
9/24/2010	1	9/7/2010	1
9/25/2010	1	9/8/2010	4
9/26/2010	1	9/9/2008	3
9/27/2010	4	9/9/2009	6
9/28/2009	3	9/9/2010	1
9/28/2010	3	**Total Departures**	**1451**
9/29/2009	4	**Avg Departures/Day**	**2.152818991**
9/29/2010	2	**Max Departures/Day**	**7**
9/3/2010	1	**Min Departures/Day**	**0**
9/30/2009	4		
9/30/2010	1		
9/4/2010	1		
9/5/2010	1		
9/6/2009	1		
9/6/2010	2		
9/7/2009	4		
9/7/2010	2		
9/8/2009	2		
9/8/2010	1		
9/9/2008	1		
9/9/2009	3		
9/9/2010	2		
Total Arrivals	**1451**		
Avg Arrivals/Day	**2.099855282**		

Max Arrivals/Day	**6**
Min Arrivals/Day	**0**

Bayport Terminal Vessel Schedule

Table A.3. Bayport vessel arrivals, departures, and average time spent at the port

VESSEL NAME	DATE / TIME ARRIVED	DATE / TIME DEPARTED	ACTUAL DAYS	DAYS
BOX VOYAGER 511	1/25/2011 7:25 AM	1/25/2011 7:15 PM	0.493055556	0
MSC MICHAELA 504	1/25/2011 5:35 AM	1/26/2011 1:00 AM	0.809027778	1
VILLE D AQUARIUS 501	1/24/2011 7:50 AM	1/25/2011 1:50 AM	0.75	1
WEHR ELBE 507	1/23/2011 8:15 AM	1/24/2011 1:50 AM	0.732638889	1
MSC NATAL 508	1/21/2011 4:35 AM	1/22/2011 1:05 AM	0.854166667	1
HS HUMBOLDT 505	1/20/2011 2:10 PM	1/21/2011 5:32 PM	1.140277778	1
MSC CHALLENGER 503	1/19/2011 5:30 PM	1/20/2011 8:20 AM	0.618055556	1
MSC ALESSIA 504	1/19/2011 3:10 PM	1/20/2011 1:00 PM	0.909722222	1
DAHLIA 511	1/17/2011 5:00 AM	1/17/2011 7:00 PM	0.583333333	0
CONTI SHANGHAI 503	1/15/2011 10:37 PM	1/17/2011 2:05 AM	1.144444444	2
CMA CGM AUCKLAND 507	1/15/2011 5:10 AM	1/15/2011 8:11 PM	0.625694444	0
MSC MELISSA 504	1/15/2011 12:15 AM	1/15/2011 6:15 PM	0.75	0
MSC JORDAN 503	1/14/2011 5:14 PM	1/15/2011 10:02 AM	0.7	1
CMA CGM NEW JERSEY 501	1/14/2011 6:00 AM	1/15/2011 1:25 AM	0.809027778	1
MSC NATAL 508	1/13/2011 8:36 AM	1/14/2011 5:48 PM	1.383333333	1
CAPE MAYOR 511	1/11/2011 2:45 PM	1/12/2011 2:00 AM	0.46875	1
BONAVIA 507	1/10/2011 6:50 PM	1/11/2011 11:00 AM	0.673611111	1
MSC POH LIN 505	1/10/2011 4:45 AM	1/14/2011 2:05 PM	4.388888889	4
MSC ATLANTIC 503	1/7/2011 12:20 PM	1/8/2011 9:40 AM	0.888888889	1
CAP YORK 505	1/7/2011 2:35 AM	1/8/2011 1:30 AM	0.954861111	1
MSC LORETTA 504	1/6/2011 11:05 AM	01/07/11 17:58	1.286805556	1
CMA CGM WHITE SHARK 501	1/6/2011 8:30 AM	1/7/2011 3:00 AM	0.770833333	1
MSC NATAL 508	1/4/2011 1:53 PM	1/5/2011 6:45 PM	1.202777778	1
WEHR ELBE	1/3/2011 7:00 PM	1/4/2011 10:20 AM	0.638888889	1
BOX TRADER 511	1/1/2011 4:50 AM	1/2/2011 8:05 AM	1.135416667	1
MSC JORDAN 503	1/1/2011 2:45 AM	1/2/2011 12:35 AM	0.909722222	1
MTC 0135 BARGE	10/19/2009 12:55 AM	10/19/2009 9:50 AM	0.371527778	0
MSC BENEDETTA 505	10/18/2009 1:29 AM	10/19/2009 12:02 AM	0.939583333	1
STADT GERA 507	10/16/2009 3:10 AM	10/16/2009 7:10 PM	0.666666667	0
MSC ILONA 504	10/15/2009 4:42 AM	10/16/2009 5:10 AM	1.019444444	1
CMA-CGM WHITE SHARK 501	10/14/2009 12:50 PM	10/15/2009 2:00 PM	1.048611111	1
MSC NATAL 503	10/14/2009 12:30 AM	10/15/2009 12:04 AM	0.981944444	1
MSC SWEDEN 505	10/12/2009 6:25 PM	10/13/2009 7:00 PM	1.024305556	1
ALGOL 507	10/10/2009 11:34 PM	10/11/2009 1:40 PM	0.5875	1
CMA-CGM CHATEAU D'IF 501	10/10/2009 5:50 PM	10/11/2009 11:50 AM	0.75	1
MSC BELEM 503	10/10/2009 3:50 AM	10/11/2009 6:10 PM	1.597222222	1

MSC BALI 506	10/7/2009 11:29 PM	10/9/2009 12:03 AM	1.023611111	2
OCTAVIA 504	10/7/2009 6:28 AM	10/7/2009 11:59 PM	0.729861111	0
CMA-CGM LOTUS 502	10/6/2009 8:15 PM	10/7/2009 8:00 PM	0.989583333	1
MSC DARTFORD 505	10/6/2009 12:30 AM	10/7/2009 2:09 AM	1.06875	1
AMAZON RIVER 507	10/2/2009 3:58 PM	10/3/2009 3:50 AM	0.494444444	1
CMA-CGM VIRGINIA 501	10/2/2009 4:48 AM	10/2/2009 8:10 PM	0.640277778	0
CSCL PANAMA 502	10/1/2009 5:20 PM	10/2/2009 1:48 PM	0.852777778	1
MSC CARACAS 503	9/30/2009 8:30 PM	10/2/2009 12:20 AM	1.159722222	2
CMA-CGM GEORGIA 501	9/30/2009 12:09 PM	10/1/2009 1:00 PM	1.035416667	1
MSC SOCOTRA 504	9/29/2009 1:45 PM	9/30/2009 2:14 PM	1.020138889	1
MSC POH LIN 505	9/27/2009 4:40 PM	9/28/2009 8:20 PM	1.152777778	1
CMA-CGM SIERRA 507	9/26/2009 3:35 PM	9/27/2009 4:38 AM	0.54375	1
MSC NICOLE 503	9/26/2009 11:50 AM	9/27/2009 4:25 AM	0.690972222	1
		Avg Days at Port	**0.939002268**	
		Max Days at Port	**4.388888889**	
		Min Days at Port	**0.371527778**	

Table A.4. Bayport vessel arrivals and departures per day

ARRIVALS		DEPARTURES	
1/1/2011	2	01/07/11	1
1/10/2011	2	1/11/2011	1
1/11/2011	1	1/12/2011	1
1/13/2011	1	1/14/2011	2
1/14/2011	2	1/15/2011	4
1/15/2011	3	1/17/2011	2
1/17/2011	1	1/2/2011	2
1/19/2011	2	1/20/2011	2
1/20/2011	1	1/21/2011	1
1/21/2011	1	1/22/2011	1
1/23/2011	1	1/24/2011	1
1/24/2011	1	1/25/2011	2
1/25/2011	2	1/26/2011	1
1/3/2011	1	1/4/2011	1
1/4/2011	1	1/5/2011	1
1/6/2011	2	1/7/2011	1
1/7/2011	2	1/8/2011	2
10/1/2009	1	10/1/2009	1
10/10/2009	3	10/11/2009	3
10/12/2009	1	10/13/2009	1
10/14/2009	2	10/15/2009	2
10/15/2009	1	10/16/2009	2

10/16/2009	1	10/19/2009	2
10/18/2009	1	10/2/2009	3
10/19/2009	1	10/3/2009	1
10/2/2009	2	10/7/2009	3
10/6/2009	2	10/9/2009	1
10/7/2009	2	9/27/2009	2
9/26/2009	2	9/28/2009	1
9/27/2009	1	9/30/2009	1
9/29/2009	1	**Total Departures**	**49**
9/30/2009	2	**Avg Departures/Day**	**1.633333**
Total Arrivals	**49**	**Max Departures/Day**	**4**
Avg Arrivals/Day	**1.53125**	**Min Departures/Day**	**0**
Max Arrivals/Day	**3**		
Min Arrivals/Day	**0**		

APPENDIX B

List of Experiments

Table B.1. Experimental cases and parameter variation combinations

EXPERIMENT	ARRIVAL	RESOURCES	TRAFFIC FLOW	EVACUEES
21A1	Normal	As Needed	Inbound: WHISKEY Outbound: ZULU	100%
21B1	Normal	As Needed	Inbound: X-RAY Outbound: ZULU	100%
21C1	Normal	As Needed	Inbound: YANKEE Outbound: ZULU	100%
21D1	Normal	As Needed	Inbound: ZULU Outbound: ZULU	100%
21E1	Normal	As Needed	Inbound: WHISKEY Outbound: YANKEE	100%
21F1	Normal	As Needed	Inbound: X-RAY Outbound: YANKEE	100%
21G1	Normal	As Needed	Inbound: YANKEE Outbound: YANKEE	100%
21H1	Normal	As Needed	Inbound: ZULU Outbound: YANKEE	100%
21I1	Normal	As Needed	Inbound: WHISKEY Outbound: X-RAY	100%
21J1	Normal	As Needed	Inbound: X-RAY Outbound: X-RAY	100%
21K1	Normal	As Needed	Inbound: YANKEE Outbound: X-RAY	100%
21L1	Normal	As Needed	Inbound: ZULU Outbound: X-RAY	100%
21M1	Normal	As Needed	Inbound: WHISKEY Outbound: WHISKEY	100%
21N1	Normal	As Needed	Inbound: X-RAY Outbound: WHISKEY	100%
21O1	Normal	As Needed	Inbound: YANKEE Outbound: WHISKEY	100%
21P1	Normal	As Needed	Inbound: ZULU Outbound: WHISKEY	100%
21A2	Normal	As Needed	Inbound: WHISKEY Outbound: ZULU	85%
21B2	Normal	As Needed	Inbound: X-RAY Outbound: ZULU	85%
21C2	Normal	As Needed	Inbound: YANKEE Outbound: ZULU	85%
21D2	Normal	As Needed	Inbound: ZULU Outbound: ZULU	85%
21E2	Normal	As Needed	Inbound: WHISKEY Outbound: YANKEE	85%
21F2	Normal	As Needed	Inbound: X-RAY Outbound: YANKEE	85%

21G2	Normal	As Needed	Inbound: YANKEE Outbound: YANKEE	85%
21H2	Normal	As Needed	Inbound: ZULU Outbound: YANKEE	85%
21I2	Normal	As Needed	Inbound: WHISKEY Outbound: X-RAY	85%
21J2	Normal	As Needed	Inbound: X-RAY Outbound: X-RAY	85%
21K2	Normal	As Needed	Inbound: YANKEE Outbound: X-RAY	85%
21L2	Normal	As Needed	Inbound: ZULU Outbound: X-RAY	85%
21M2	Normal	As Needed	Inbound: WHISKEY Outbound: WHISKEY	85%
21N2	Normal	As Needed	Inbound: X-RAY Outbound: WHISKEY	85%
21O2	Normal	As Needed	Inbound: YANKEE Outbound: WHISKEY	85%
21P2	Normal	As Needed	Inbound: ZULU Outbound: WHISKEY	85%
21A3	Normal	As Needed	Inbound: WHISKEY Outbound: ZULU	70%
21B3	Normal	As Needed	Inbound: X-RAY Outbound: ZULU	70%
21C3	Normal	As Needed	Inbound: YANKEE Outbound: ZULU	70%
21D3	Normal	As Needed	Inbound: ZULU Outbound: ZULU	70%
21E3	Normal	As Needed	Inbound: WHISKEY Outbound: YANKEE	70%
21F3	Normal	As Needed	Inbound: X-RAY Outbound: YANKEE	70%
21G3	Normal	As Needed	Inbound: YANKEE Outbound: YANKEE	70%
21H3	Normal	As Needed	Inbound: ZULU Outbound: YANKEE	70%
21I3	Normal	As Needed	Inbound: WHISKEY Outbound: X-RAY	70%
21J3	Normal	As Needed	Inbound: X-RAY Outbound: X-RAY	70%
21K3	Normal	As Needed	Inbound: YANKEE Outbound: X-RAY	70%
21L3	Normal	As Needed	Inbound: ZULU Outbound: X-RAY	70%
21M3	Normal	As Needed	Inbound: WHISKEY Outbound: WHISKEY	70%
21N3	Normal	As Needed	Inbound: X-RAY Outbound: WHISKEY	70%
21O3	Normal	As Needed	Inbound: YANKEE Outbound: WHISKEY	70%
21P3	Normal	As Needed	Inbound: ZULU Outbound: WHISKEY	70%
22A1	Normal	25% Reductions starting at WHISKEY	Inbound: WHISKEY Outbound: ZULU	100%

22B1	Normal	25% Reductions starting at WHISKEY	Inbound: X-RAY Outbound: ZULU	100%
22C1	Normal	25% Reductions starting at WHISKEY	Inbound: YANKEE Outbound: ZULU	100%
22D1	Normal	25% Reductions starting at WHISKEY	Inbound: ZULU Outbound: ZULU	100%
22E1	Normal	25% Reductions starting at WHISKEY	Inbound: WHISKEY Outbound: YANKEE	100%
22F1	Normal	25% Reductions starting at WHISKEY	Inbound: X-RAY Outbound: YANKEE	100%
22G1	Normal	25% Reductions starting at WHISKEY	Inbound: YANKEE Outbound: YANKEE	100%
22H1	Normal	25% Reductions starting at WHISKEY	Inbound: ZULU Outbound: YANKEE	100%
22I1	Normal	25% Reductions starting at WHISKEY	Inbound: WHISKEY Outbound: X-RAY	100%
22J1	Normal	25% Reductions starting at WHISKEY	Inbound: X-RAY Outbound: X-RAY	100%
22K1	Normal	25% Reductions starting at WHISKEY	Inbound: YANKEE Outbound: X-RAY	100%
22L1	Normal	25% Reductions starting at WHISKEY	Inbound: ZULU Outbound: X-RAY	100%
22M1	Normal	25% Reductions starting at WHISKEY	Inbound: WHISKEY Outbound: WHISKEY	100%
22N1	Normal	25% Reductions starting at WHISKEY	Inbound: X-RAY Outbound: WHISKEY	100%
22O1	Normal	25% Reductions starting at WHISKEY	Inbound: YANKEE Outbound: WHISKEY	100%
22P1	Normal	25% Reductions starting at WHISKEY	Inbound: ZULU Outbound: WHISKEY	100%
22A2	Normal	25% Reductions starting at WHISKEY	Inbound: WHISKEY Outbound: ZULU	85%
22B2	Normal	25% Reductions starting at WHISKEY	Inbound: X-RAY Outbound: ZULU	85%
22C2	Normal	25% Reductions starting at WHISKEY	Inbound: YANKEE Outbound: ZULU	85%
22D2	Normal	25% Reductions starting at WHISKEY	Inbound: ZULU Outbound: ZULU	85%
22E2	Normal	25% Reductions starting at WHISKEY	Inbound: WHISKEY Outbound: YANKEE	85%
22F2	Normal	25% Reductions starting at WHISKEY	Inbound: X-RAY Outbound: YANKEE	85%
22G2	Normal	25% Reductions starting at WHISKEY	Inbound: YANKEE Outbound: YANKEE	85%
22H2	Normal	25% Reductions starting at WHISKEY	Inbound: ZULU Outbound: YANKEE	85%
22I2	Normal	25% Reductions starting at WHISKEY	Inbound: WHISKEY Outbound: X-RAY	85%
22J2	Normal	25% Reductions starting at WHISKEY	Inbound: X-RAY Outbound: X-RAY	85%
22K2	Normal	25% Reductions starting at WHISKEY	Inbound: YANKEE Outbound: X-RAY	85%
22L2	Normal	25% Reductions starting at WHISKEY	Inbound: ZULU Outbound: X-RAY	85%

22M2	Normal	25% Reductions starting at WHISKEY	Inbound: WHISKEY Outbound: WHISKEY	85%
22N2	Normal	25% Reductions starting at WHISKEY	Inbound: X-RAY Outbound: WHISKEY	85%
22O2	Normal	25% Reductions starting at WHISKEY	Inbound: YANKEE Outbound: WHISKEY	85%
22P2	Normal	25% Reductions starting at WHISKEY	Inbound: ZULU Outbound: WHISKEY	85%
22A3	Normal	25% Reductions starting at WHISKEY	Inbound: WHISKEY Outbound: ZULU	70%
22B3	Normal	25% Reductions starting at WHISKEY	Inbound: X-RAY Outbound: ZULU	70%
22C3	Normal	25% Reductions starting at WHISKEY	Inbound: YANKEE Outbound: ZULU	70%
22D3	Normal	25% Reductions starting at WHISKEY	Inbound: ZULU Outbound: ZULU	70%
22E3	Normal	25% Reductions starting at WHISKEY	Inbound: WHISKEY Outbound: YANKEE	70%
22F3	Normal	25% Reductions starting at WHISKEY	Inbound: X-RAY Outbound: YANKEE	70%
22G3	Normal	25% Reductions starting at WHISKEY	Inbound: YANKEE Outbound: YANKEE	70%
22H3	Normal	25% Reductions starting at WHISKEY	Inbound: ZULU Outbound: YANKEE	70%
22I3	Normal	25% Reductions starting at WHISKEY	Inbound: WHISKEY Outbound: X-RAY	70%
22J3	Normal	25% Reductions starting at WHISKEY	Inbound: X-RAY Outbound: X-RAY	70%
22K3	Normal	25% Reductions starting at WHISKEY	Inbound: YANKEE Outbound: X-RAY	70%
22L3	Normal	25% Reductions starting at WHISKEY	Inbound: ZULU Outbound: X-RAY	70%
22M3	Normal	25% Reductions starting at WHISKEY	Inbound: WHISKEY Outbound: WHISKEY	70%
22N3	Normal	25% Reductions starting at WHISKEY	Inbound: X-RAY Outbound: WHISKEY	70%
22O3	Normal	25% Reductions starting at WHISKEY	Inbound: YANKEE Outbound: WHISKEY	70%
22P3	Normal	25% Reductions starting at WHISKEY	Inbound: ZULU Outbound: WHISKEY	70%
23A1	Normal	25% Reductions starting at X-RAY	Inbound: WHISKEY Outbound: ZULU	100%
23B1	Normal	25% Reductions starting at X-RAY	Inbound: X-RAY Outbound: ZULU	100%
23C1	Normal	25% Reductions starting at X-RAY	Inbound: YANKEE Outbound: ZULU	100%
23D1	Normal	25% Reductions starting at X-RAY	Inbound: ZULU Outbound: ZULU	100%
23E1	Normal	25% Reductions starting at X-RAY	Inbound: WHISKEY Outbound: YANKEE	100%
23F1	Normal	25% Reductions starting at X-RAY	Inbound: X-RAY Outbound: YANKEE	100%
23G1	Normal	25% Reductions starting at X-RAY	Inbound: YANKEE Outbound: YANKEE	100%

23H1	Normal	25% Reductions starting at X-RAY	Inbound: ZULU Outbound: YANKEE	100%
23I1	Normal	25% Reductions starting at X-RAY	Inbound: WHISKEY Outbound: X-RAY	100%
23J1	Normal	25% Reductions starting at X-RAY	Inbound: X-RAY Outbound: X-RAY	100%
23K1	Normal	25% Reductions starting at X-RAY	Inbound: YANKEE Outbound: X-RAY	100%
23L1	Normal	25% Reductions starting at X-RAY	Inbound: ZULU Outbound: X-RAY	100%
23M1	Normal	25% Reductions starting at X-RAY	Inbound: WHISKEY Outbound: WHISKEY	100%
23N1	Normal	25% Reductions starting at X-RAY	Inbound: X-RAY Outbound: WHISKEY	100%
23O1	Normal	25% Reductions starting at X-RAY	Inbound: YANKEE Outbound: WHISKEY	100%
23P1	Normal	25% Reductions starting at X-RAY	Inbound: ZULU Outbound: WHISKEY	100%
23A2	Normal	25% Reductions starting at X-RAY	Inbound: WHISKEY Outbound: ZULU	85%
23B2	Normal	25% Reductions starting at X-RAY	Inbound: X-RAY Outbound: ZULU	85%
23C2	Normal	25% Reductions starting at X-RAY	Inbound: YANKEE Outbound: ZULU	85%
23D2	Normal	25% Reductions starting at X-RAY	Inbound: ZULU Outbound: ZULU	85%
23E2	Normal	25% Reductions starting at X-RAY	Inbound: WHISKEY Outbound: YANKEE	85%
23F2	Normal	25% Reductions starting at X-RAY	Inbound: X-RAY Outbound: YANKEE	85%
23G2	Normal	25% Reductions starting at X-RAY	Inbound: YANKEE Outbound: YANKEE	85%
23H2	Normal	25% Reductions starting at X-RAY	Inbound: ZULU Outbound: YANKEE	85%
23I2	Normal	25% Reductions starting at X-RAY	Inbound: WHISKEY Outbound: X-RAY	85%
23J2	Normal	25% Reductions starting at X-RAY	Inbound: X-RAY Outbound: X-RAY	85%
23K2	Normal	25% Reductions starting at X-RAY	Inbound: YANKEE Outbound: X-RAY	85%
23L2	Normal	25% Reductions starting at X-RAY	Inbound: ZULU Outbound: X-RAY	85%
23M2	Normal	25% Reductions starting at X-RAY	Inbound: WHISKEY Outbound: WHISKEY	85%
23N2	Normal	25% Reductions starting at X-RAY	Inbound: X-RAY Outbound: WHISKEY	85%
23O2	Normal	25% Reductions starting at X-RAY	Inbound: YANKEE Outbound: WHISKEY	85%
23P2	Normal	25% Reductions starting at X-RAY	Inbound: ZULU Outbound: WHISKEY	85%
23A3	Normal	25% Reductions starting at X-RAY	Inbound: WHISKEY Outbound: ZULU	70%
23B3	Normal	25% Reductions starting at X-RAY	Inbound: X-RAY Outbound: ZULU	70%

23C3	Normal	25% Reductions starting at X-RAY	Inbound: YANKEE Outbound: ZULU	70%
23D3	Normal	25% Reductions starting at X-RAY	Inbound: ZULU Outbound: ZULU	70%
23E3	Normal	25% Reductions starting at X-RAY	Inbound: WHISKEY Outbound: YANKEE	70%
23F3	Normal	25% Reductions starting at X-RAY	Inbound: X-RAY Outbound: YANKEE	70%
23G3	Normal	25% Reductions starting at X-RAY	Inbound: YANKEE Outbound: YANKEE	70%
23H3	Normal	25% Reductions starting at X-RAY	Inbound: ZULU Outbound: YANKEE	70%
23I3	Normal	25% Reductions starting at X-RAY	Inbound: WHISKEY Outbound: X-RAY	70%
23J3	Normal	25% Reductions starting at X-RAY	Inbound: X-RAY Outbound: X-RAY	70%
23K3	Normal	25% Reductions starting at X-RAY	Inbound: YANKEE Outbound: X-RAY	70%
23L3	Normal	25% Reductions starting at X-RAY	Inbound: ZULU Outbound: X-RAY	70%
23M3	Normal	25% Reductions starting at X-RAY	Inbound: WHISKEY Outbound: WHISKEY	70%
23N3	Normal	25% Reductions starting at X-RAY	Inbound: X-RAY Outbound: WHISKEY	70%
23O3	Normal	25% Reductions starting at X-RAY	Inbound: YANKEE Outbound: WHISKEY	70%
23P3	Normal	25% Reductions starting at X-RAY	Inbound: ZULU Outbound: WHISKEY	70%
24A1	Normal	25% Reductions starting at YANKEE	Inbound: WHISKEY Outbound: ZULU	100%
24B1	Normal	25% Reductions starting at YANKEE	Inbound: X-RAY Outbound: ZULU	100%
24C1	Normal	25% Reductions starting at YANKEE	Inbound: YANKEE Outbound: ZULU	100%
24D1	Normal	25% Reductions starting at YANKEE	Inbound: ZULU Outbound: ZULU	100%
24E1	Normal	25% Reductions starting at YANKEE	Inbound: WHISKEY Outbound: YANKEE	100%
24F1	Normal	25% Reductions starting at YANKEE	Inbound: X-RAY Outbound: YANKEE	100%
24G1	Normal	25% Reductions starting at YANKEE	Inbound: YANKEE Outbound: YANKEE	100%
24H1	Normal	25% Reductions starting at YANKEE	Inbound: ZULU Outbound: YANKEE	100%
24I1	Normal	25% Reductions starting at YANKEE	Inbound: WHISKEY Outbound: X-RAY	100%
24J1	Normal	25% Reductions starting at YANKEE	Inbound: X-RAY Outbound: X-RAY	100%
24K1	Normal	25% Reductions starting at YANKEE	Inbound: YANKEE Outbound: X-RAY	100%
24L1	Normal	25% Reductions starting at YANKEE	Inbound: ZULU Outbound: X-RAY	100%
24M1	Normal	25% Reductions starting at YANKEE	Inbound: WHISKEY Outbound: WHISKEY	100%

24N1	Normal	25% Reductions starting at YANKEE	Inbound: X-RAY Outbound: WHISKEY	100%
24O1	Normal	25% Reductions starting at YANKEE	Inbound: YANKEE Outbound: WHISKEY	100%
24P1	Normal	25% Reductions starting at YANKEE	Inbound: ZULU Outbound: WHISKEY	100%
24A2	Normal	25% Reductions starting at YANKEE	Inbound: WHISKEY Outbound: ZULU	85%
24B2	Normal	25% Reductions starting at YANKEE	Inbound: X-RAY Outbound: ZULU	85%
24C2	Normal	25% Reductions starting at YANKEE	Inbound: YANKEE Outbound: ZULU	85%
24D2	Normal	25% Reductions starting at YANKEE	Inbound: ZULU Outbound: ZULU	85%
24E2	Normal	25% Reductions starting at YANKEE	Inbound: WHISKEY Outbound: YANKEE	85%
24F2	Normal	25% Reductions starting at YANKEE	Inbound: X-RAY Outbound: YANKEE	85%
24G2	Normal	25% Reductions starting at YANKEE	Inbound: YANKEE Outbound: YANKEE	85%
24H2	Normal	25% Reductions starting at YANKEE	Inbound: ZULU Outbound: YANKEE	85%
24I2	Normal	25% Reductions starting at YANKEE	Inbound: WHISKEY Outbound: X-RAY	85%
24J2	Normal	25% Reductions starting at YANKEE	Inbound: X-RAY Outbound: X-RAY	85%
24K2	Normal	25% Reductions starting at YANKEE	Inbound: YANKEE Outbound: X-RAY	85%
24L2	Normal	25% Reductions starting at YANKEE	Inbound: ZULU Outbound: X-RAY	85%
24M2	Normal	25% Reductions starting at YANKEE	Inbound: WHISKEY Outbound: WHISKEY	85%
24N2	Normal	25% Reductions starting at YANKEE	Inbound: X-RAY Outbound: WHISKEY	85%
24O2	Normal	25% Reductions starting at YANKEE	Inbound: YANKEE Outbound: WHISKEY	85%
24P2	Normal	25% Reductions starting at YANKEE	Inbound: ZULU Outbound: WHISKEY	85%
24A3	Normal	25% Reductions starting at YANKEE	Inbound: WHISKEY Outbound: ZULU	70%
24B3	Normal	25% Reductions starting at YANKEE	Inbound: X-RAY Outbound: ZULU	70%
24C3	Normal	25% Reductions starting at YANKEE	Inbound: YANKEE Outbound: ZULU	70%
24D3	Normal	25% Reductions starting at YANKEE	Inbound: ZULU Outbound: ZULU	70%
24E3	Normal	25% Reductions starting at YANKEE	Inbound: WHISKEY Outbound: YANKEE	70%
24F3	Normal	25% Reductions starting at YANKEE	Inbound: X-RAY Outbound: YANKEE	70%
24G3	Normal	25% Reductions starting at YANKEE	Inbound: YANKEE Outbound: YANKEE	70%
24H3	Normal	25% Reductions starting at YANKEE	Inbound: ZULU Outbound: YANKEE	70%

24I3	Normal	25% Reductions starting at YANKEE	Inbound: WHISKEY Outbound: X-RAY	70%
24J3	Normal	25% Reductions starting at YANKEE	Inbound: X-RAY Outbound: X-RAY	70%
24K3	Normal	25% Reductions starting at YANKEE	Inbound: YANKEE Outbound: X-RAY	70%
24L3	Normal	25% Reductions starting at YANKEE	Inbound: ZULU Outbound: X-RAY	70%
24M3	Normal	25% Reductions starting at YANKEE	Inbound: WHISKEY Outbound: WHISKEY	70%
24N3	Normal	25% Reductions starting at YANKEE	Inbound: X-RAY Outbound: WHISKEY	70%
24O3	Normal	25% Reductions starting at YANKEE	Inbound: YANKEE Outbound: WHISKEY	70%
24P3	Normal	25% Reductions starting at YANKEE	Inbound: ZULU Outbound: WHISKEY	70%
25A1	Normal	25% Reductions starting at ZULU	Inbound: WHISKEY Outbound: ZULU	100%
25B1	Normal	25% Reductions starting at ZULU	Inbound: X-RAY Outbound: ZULU	100%
25C1	Normal	25% Reductions starting at ZULU	Inbound: YANKEE Outbound: ZULU	100%
25D1	Normal	25% Reductions starting at ZULU	Inbound: ZULU Outbound: ZULU	100%
25E1	Normal	25% Reductions starting at ZULU	Inbound: WHISKEY Outbound: YANKEE	100%
25F1	Normal	25% Reductions starting at ZULU	Inbound: X-RAY Outbound: YANKEE	100%
25G1	Normal	25% Reductions starting at ZULU	Inbound: YANKEE Outbound: YANKEE	100%
25H1	Normal	25% Reductions starting at ZULU	Inbound: ZULU Outbound: YANKEE	100%
25I1	Normal	25% Reductions starting at ZULU	Inbound: WHISKEY Outbound: X-RAY	100%
25J1	Normal	25% Reductions starting at ZULU	Inbound: X-RAY Outbound: X-RAY	100%
25K1	Normal	25% Reductions starting at ZULU	Inbound: YANKEE Outbound: X-RAY	100%
25L1	Normal	25% Reductions starting at ZULU	Inbound: ZULU Outbound: X-RAY	100%
25M1	Normal	25% Reductions starting at ZULU	Inbound: WHISKEY Outbound: WHISKEY	100%
25N1	Normal	25% Reductions starting at ZULU	Inbound: X-RAY Outbound: WHISKEY	100%
25O1	Normal	25% Reductions starting at ZULU	Inbound: YANKEE Outbound: WHISKEY	100%
25P1	Normal	25% Reductions starting at ZULU	Inbound: ZULU Outbound: WHISKEY	100%
25A2	Normal	25% Reductions starting at ZULU	Inbound: WHISKEY Outbound: ZULU	85%
25B2	Normal	25% Reductions starting at ZULU	Inbound: X-RAY Outbound: ZULU	85%
25C2	Normal	25% Reductions starting at ZULU	Inbound: YANKEE Outbound: ZULU	85%

25D2	Normal	25% Reductions starting at ZULU	Inbound: ZULU Outbound: ZULU	85%
25E2	Normal	25% Reductions starting at ZULU	Inbound: WHISKEY Outbound: YANKEE	85%
25F2	Normal	25% Reductions starting at ZULU	Inbound: X-RAY Outbound: YANKEE	85%
25G2	Normal	25% Reductions starting at ZULU	Inbound: YANKEE Outbound: YANKEE	85%
25H2	Normal	25% Reductions starting at ZULU	Inbound: ZULU Outbound: YANKEE	85%
25I2	Normal	25% Reductions starting at ZULU	Inbound: WHISKEY Outbound: X-RAY	85%
25J2	Normal	25% Reductions starting at ZULU	Inbound: X-RAY Outbound: X-RAY	85%
25K2	Normal	25% Reductions starting at ZULU	Inbound: YANKEE Outbound: X-RAY	85%
25L2	Normal	25% Reductions starting at ZULU	Inbound: ZULU Outbound: X-RAY	85%
25M2	Normal	25% Reductions starting at ZULU	Inbound: WHISKEY Outbound: WHISKEY	85%
25N2	Normal	25% Reductions starting at ZULU	Inbound: X-RAY Outbound: WHISKEY	85%
25O2	Normal	25% Reductions starting at ZULU	Inbound: YANKEE Outbound: WHISKEY	85%
25P2	Normal	25% Reductions starting at ZULU	Inbound: ZULU Outbound: WHISKEY	85%
25A3	Normal	25% Reductions starting at ZULU	Inbound: WHISKEY Outbound: ZULU	70%
25B3	Normal	25% Reductions starting at ZULU	Inbound: X-RAY Outbound: ZULU	70%
25C3	Normal	25% Reductions starting at ZULU	Inbound: YANKEE Outbound: ZULU	70%
25D3	Normal	25% Reductions starting at ZULU	Inbound: ZULU Outbound: ZULU	70%
25E3	Normal	25% Reductions starting at ZULU	Inbound: WHISKEY Outbound: YANKEE	70%
25F3	Normal	25% Reductions starting at ZULU	Inbound: X-RAY Outbound: YANKEE	70%
25G3	Normal	25% Reductions starting at ZULU	Inbound: YANKEE Outbound: YANKEE	70%
25H3	Normal	25% Reductions starting at ZULU	Inbound: ZULU Outbound: YANKEE	70%
25I3	Normal	25% Reductions starting at ZULU	Inbound: WHISKEY Outbound: X-RAY	70%
25J3	Normal	25% Reductions starting at ZULU	Inbound: X-RAY Outbound: X-RAY	70%
25K3	Normal	25% Reductions starting at ZULU	Inbound: YANKEE Outbound: X-RAY	70%
25L3	Normal	25% Reductions starting at ZULU	Inbound: ZULU Outbound: X-RAY	70%
25M3	Normal	25% Reductions starting at ZULU	Inbound: WHISKEY Outbound: WHISKEY	70%
25N3	Normal	25% Reductions starting at ZULU	Inbound: X-RAY Outbound: WHISKEY	70%

25O3	Normal	25% Reductions starting at ZULU	Inbound: YANKEE Outbound: WHISKEY	70%
25P3	Normal	25% Reductions starting at ZULU	Inbound: ZULU Outbound: WHISKEY	70%
11A1	20% Decrease	As Needed	Inbound: WHISKEY Outbound: ZULU	100%
11B1	20% Decrease	As Needed	Inbound: X-RAY Outbound: ZULU	100%
11C1	20% Decrease	As Needed	Inbound: YANKEE Outbound: ZULU	100%
11D1	20% Decrease	As Needed	Inbound: ZULU Outbound: ZULU	100%
11E1	20% Decrease	As Needed	Inbound: WHISKEY Outbound: YANKEE	100%
11F1	20% Decrease	As Needed	Inbound: X-RAY Outbound: YANKEE	100%
11G1	20% Decrease	As Needed	Inbound: YANKEE Outbound: YANKEE	100%
11H1	20% Decrease	As Needed	Inbound: ZULU Outbound: YANKEE	100%
11I1	20% Decrease	As Needed	Inbound: WHISKEY Outbound: X-RAY	100%
11J1	20% Decrease	As Needed	Inbound: X-RAY Outbound: X-RAY	100%
11K1	20% Decrease	As Needed	Inbound: YANKEE Outbound: X-RAY	100%
11L1	20% Decrease	As Needed	Inbound: ZULU Outbound: X-RAY	100%
11M1	20% Decrease	As Needed	Inbound: WHISKEY Outbound: WHISKEY	100%
11N1	20% Decrease	As Needed	Inbound: X-RAY Outbound: WHISKEY	100%
11O1	20% Decrease	As Needed	Inbound: YANKEE Outbound: WHISKEY	100%
11P1	20% Decrease	As Needed	Inbound: ZULU Outbound: WHISKEY	100%
11A2	20% Decrease	As Needed	Inbound: WHISKEY Outbound: ZULU	85%
11B2	20% Decrease	As Needed	Inbound: X-RAY Outbound: ZULU	85%
11C2	20% Decrease	As Needed	Inbound: YANKEE Outbound: ZULU	85%
11D2	20% Decrease	As Needed	Inbound: ZULU Outbound: ZULU	85%
11E2	20% Decrease	As Needed	Inbound: WHISKEY Outbound: YANKEE	85%
11F2	20% Decrease	As Needed	Inbound: X-RAY Outbound: YANKEE	85%
11G2	20% Decrease	As Needed	Inbound: YANKEE Outbound: YANKEE	85%
11H2	20% Decrease	As Needed	Inbound: ZULU Outbound: YANKEE	85%
11I2	20% Decrease	As Needed	Inbound: WHISKEY Outbound: X-RAY	85%

11J2	20% Decrease	As Needed	Inbound: X-RAY Outbound: X-RAY	85%
11K2	20% Decrease	As Needed	Inbound: YANKEE Outbound: X-RAY	85%
11L2	20% Decrease	As Needed	Inbound: ZULU Outbound: X-RAY	85%
11M2	20% Decrease	As Needed	Inbound: WHISKEY Outbound: WHISKEY	85%
11N2	20% Decrease	As Needed	Inbound: X-RAY Outbound: WHISKEY	85%
11O2	20% Decrease	As Needed	Inbound: YANKEE Outbound: WHISKEY	85%
11P2	20% Decrease	As Needed	Inbound: ZULU Outbound: WHISKEY	85%
11A3	20% Decrease	As Needed	Inbound: WHISKEY Outbound: ZULU	70%
11B3	20% Decrease	As Needed	Inbound: X-RAY Outbound: ZULU	70%
11C3	20% Decrease	As Needed	Inbound: YANKEE Outbound: ZULU	70%
11D3	20% Decrease	As Needed	Inbound: ZULU Outbound: ZULU	70%
11E3	20% Decrease	As Needed	Inbound: WHISKEY Outbound: YANKEE	70%
11F3	20% Decrease	As Needed	Inbound: X-RAY Outbound: YANKEE	70%
11G3	20% Decrease	As Needed	Inbound: YANKEE Outbound: YANKEE	70%
11H3	20% Decrease	As Needed	Inbound: ZULU Outbound: YANKEE	70%
11I3	20% Decrease	As Needed	Inbound: WHISKEY Outbound: X-RAY	70%
11J3	20% Decrease	As Needed	Inbound: X-RAY Outbound: X-RAY	70%
11K3	20% Decrease	As Needed	Inbound: YANKEE Outbound: X-RAY	70%
11L3	20% Decrease	As Needed	Inbound: ZULU Outbound: X-RAY	70%
11M3	20% Decrease	As Needed	Inbound: WHISKEY Outbound: WHISKEY	70%
11N3	20% Decrease	As Needed	Inbound: X-RAY Outbound: WHISKEY	70%
11O3	20% Decrease	As Needed	Inbound: YANKEE Outbound: WHISKEY	70%
11P3	20% Decrease	As Needed	Inbound: ZULU Outbound: WHISKEY	70%
12A1	20% Decrease	25% Reductions starting at WHISKEY	Inbound: WHISKEY Outbound: ZULU	100%
12B1	20% Decrease	25% Reductions starting at WHISKEY	Inbound: X-RAY Outbound: ZULU	100%
12C1	20% Decrease	25% Reductions starting at WHISKEY	Inbound: YANKEE Outbound: ZULU	100%
12D1	20% Decrease	25% Reductions starting at WHISKEY	Inbound: ZULU Outbound: ZULU	100%

12E1	20% Decrease	25% Reductions starting at WHISKEY	Inbound: WHISKEY Outbound: YANKEE	100%
12F1	20% Decrease	25% Reductions starting at WHISKEY	Inbound: X-RAY Outbound: YANKEE	100%
12G1	20% Decrease	25% Reductions starting at WHISKEY	Inbound: YANKEE Outbound: YANKEE	100%
12H1	20% Decrease	25% Reductions starting at WHISKEY	Inbound: ZULU Outbound: YANKEE	100%
12I1	20% Decrease	25% Reductions starting at WHISKEY	Inbound: WHISKEY Outbound: X-RAY	100%
12J1	20% Decrease	25% Reductions starting at WHISKEY	Inbound: X-RAY Outbound: X-RAY	100%
12K1	20% Decrease	25% Reductions starting at WHISKEY	Inbound: YANKEE Outbound: X-RAY	100%
12L1	20% Decrease	25% Reductions starting at WHISKEY	Inbound: ZULU Outbound: X-RAY	100%
12M1	20% Decrease	25% Reductions starting at WHISKEY	Inbound: WHISKEY Outbound: WHISKEY	100%
12N1	20% Decrease	25% Reductions starting at WHISKEY	Inbound: X-RAY Outbound: WHISKEY	100%
12O1	20% Decrease	25% Reductions starting at WHISKEY	Inbound: YANKEE Outbound: WHISKEY	100%
12P1	20% Decrease	25% Reductions starting at WHISKEY	Inbound: ZULU Outbound: WHISKEY	100%
12A2	20% Decrease	25% Reductions starting at WHISKEY	Inbound: WHISKEY Outbound: ZULU	85%
12B2	20% Decrease	25% Reductions starting at WHISKEY	Inbound: X-RAY Outbound: ZULU	85%
12C2	20% Decrease	25% Reductions starting at WHISKEY	Inbound: YANKEE Outbound: ZULU	85%
12D2	20% Decrease	25% Reductions starting at WHISKEY	Inbound: ZULU Outbound: ZULU	85%
12E2	20% Decrease	25% Reductions starting at WHISKEY	Inbound: WHISKEY Outbound: YANKEE	85%
12F2	20% Decrease	25% Reductions starting at WHISKEY	Inbound: X-RAY Outbound: YANKEE	85%
12G2	20% Decrease	25% Reductions starting at WHISKEY	Inbound: YANKEE Outbound: YANKEE	85%
12H2	20% Decrease	25% Reductions starting at WHISKEY	Inbound: ZULU Outbound: YANKEE	85%
12I2	20% Decrease	25% Reductions starting at WHISKEY	Inbound: WHISKEY Outbound: X-RAY	85%
12J2	20% Decrease	25% Reductions starting at WHISKEY	Inbound: X-RAY Outbound: X-RAY	85%
12K2	20% Decrease	25% Reductions starting at WHISKEY	Inbound: YANKEE Outbound: X-RAY	85%
12L2	20% Decrease	25% Reductions starting at WHISKEY	Inbound: ZULU Outbound: X-RAY	85%
12M2	20% Decrease	25% Reductions starting at WHISKEY	Inbound: WHISKEY Outbound: WHISKEY	85%
12N2	20% Decrease	25% Reductions starting at WHISKEY	Inbound: X-RAY Outbound: WHISKEY	85%
12O2	20% Decrease	25% Reductions starting at WHISKEY	Inbound: YANKEE Outbound: WHISKEY	85%

12P2	20% Decrease	25% Reductions starting at WHISKEY	Inbound: ZULU Outbound: WHISKEY	85%
12A3	20% Decrease	25% Reductions starting at WHISKEY	Inbound: WHISKEY Outbound: ZULU	70%
12B3	20% Decrease	25% Reductions starting at WHISKEY	Inbound: X-RAY Outbound: ZULU	70%
12C3	20% Decrease	25% Reductions starting at WHISKEY	Inbound: YANKEE Outbound: ZULU	70%
12D3	20% Decrease	25% Reductions starting at WHISKEY	Inbound: ZULU Outbound: ZULU	70%
12E3	20% Decrease	25% Reductions starting at WHISKEY	Inbound: WHISKEY Outbound: YANKEE	70%
12F3	20% Decrease	25% Reductions starting at WHISKEY	Inbound: X-RAY Outbound: YANKEE	70%
12G3	20% Decrease	25% Reductions starting at WHISKEY	Inbound: YANKEE Outbound: YANKEE	70%
12H3	20% Decrease	25% Reductions starting at WHISKEY	Inbound: ZULU Outbound: YANKEE	70%
12I3	20% Decrease	25% Reductions starting at WHISKEY	Inbound: WHISKEY Outbound: X-RAY	70%
12J3	20% Decrease	25% Reductions starting at WHISKEY	Inbound: X-RAY Outbound: X-RAY	70%
12K3	20% Decrease	25% Reductions starting at WHISKEY	Inbound: YANKEE Outbound: X-RAY	70%
12L3	20% Decrease	25% Reductions starting at WHISKEY	Inbound: ZULU Outbound: X-RAY	70%
12M3	20% Decrease	25% Reductions starting at WHISKEY	Inbound: WHISKEY Outbound: WHISKEY	70%
12N3	20% Decrease	25% Reductions starting at WHISKEY	Inbound: X-RAY Outbound: WHISKEY	70%
12O3	20% Decrease	25% Reductions starting at WHISKEY	Inbound: YANKEE Outbound: WHISKEY	70%
12P3	20% Decrease	25% Reductions starting at WHISKEY	Inbound: ZULU Outbound: WHISKEY	70%
13A1	20% Decrease	25% Reductions starting at X-RAY	Inbound: WHISKEY Outbound: ZULU	100%
13B1	20% Decrease	25% Reductions starting at X-RAY	Inbound: X-RAY Outbound: ZULU	100%
13C1	20% Decrease	25% Reductions starting at X-RAY	Inbound: YANKEE Outbound: ZULU	100%
13D1	20% Decrease	25% Reductions starting at X-RAY	Inbound: ZULU Outbound: ZULU	100%
13E1	20% Decrease	25% Reductions starting at X-RAY	Inbound: WHISKEY Outbound: YANKEE	100%
13F1	20% Decrease	25% Reductions starting at X-RAY	Inbound: X-RAY Outbound: YANKEE	100%
13G1	20% Decrease	25% Reductions starting at X-RAY	Inbound: YANKEE Outbound: YANKEE	100%
13H1	20% Decrease	25% Reductions starting at X-RAY	Inbound: ZULU Outbound: YANKEE	100%
13I1	20% Decrease	25% Reductions starting at X-RAY	Inbound: WHISKEY Outbound: X-RAY	100%
13J1	20% Decrease	25% Reductions starting at X-RAY	Inbound: X-RAY Outbound: X-RAY	100%

13K1	20% Decrease	25% Reductions starting at X-RAY	Inbound: YANKEE Outbound: X-RAY	100%
13L1	20% Decrease	25% Reductions starting at X-RAY	Inbound: ZULU Outbound: X-RAY	100%
13M1	20% Decrease	25% Reductions starting at X-RAY	Inbound: WHISKEY Outbound: WHISKEY	100%
13N1	20% Decrease	25% Reductions starting at X-RAY	Inbound: X-RAY Outbound: WHISKEY	100%
13O1	20% Decrease	25% Reductions starting at X-RAY	Inbound: YANKEE Outbound: WHISKEY	100%
13P1	20% Decrease	25% Reductions starting at X-RAY	Inbound: ZULU Outbound: WHISKEY	100%
13A2	20% Decrease	25% Reductions starting at X-RAY	Inbound: WHISKEY Outbound: ZULU	85%
13B2	20% Decrease	25% Reductions starting at X-RAY	Inbound: X-RAY Outbound: ZULU	85%
13C2	20% Decrease	25% Reductions starting at X-RAY	Inbound: YANKEE Outbound: ZULU	85%
13D2	20% Decrease	25% Reductions starting at X-RAY	Inbound: ZULU Outbound: ZULU	85%
13E2	20% Decrease	25% Reductions starting at X-RAY	Inbound: WHISKEY Outbound: YANKEE	85%
13F2	20% Decrease	25% Reductions starting at X-RAY	Inbound: X-RAY Outbound: YANKEE	85%
13G2	20% Decrease	25% Reductions starting at X-RAY	Inbound: YANKEE Outbound: YANKEE	85%
13H2	20% Decrease	25% Reductions starting at X-RAY	Inbound: ZULU Outbound: YANKEE	85%
13I2	20% Decrease	25% Reductions starting at X-RAY	Inbound: WHISKEY Outbound: X-RAY	85%
13J2	20% Decrease	25% Reductions starting at X-RAY	Inbound: X-RAY Outbound: X-RAY	85%
13K2	20% Decrease	25% Reductions starting at X-RAY	Inbound: YANKEE Outbound: X-RAY	85%
13L2	20% Decrease	25% Reductions starting at X-RAY	Inbound: ZULU Outbound: X-RAY	85%
13M2	20% Decrease	25% Reductions starting at X-RAY	Inbound: WHISKEY Outbound: WHISKEY	85%
13N2	20% Decrease	25% Reductions starting at X-RAY	Inbound: X-RAY Outbound: WHISKEY	85%
13O2	20% Decrease	25% Reductions starting at X-RAY	Inbound: YANKEE Outbound: WHISKEY	85%
13P2	20% Decrease	25% Reductions starting at X-RAY	Inbound: ZULU Outbound: WHISKEY	85%
13A3	20% Decrease	25% Reductions starting at X-RAY	Inbound: WHISKEY Outbound: ZULU	70%
13B3	20% Decrease	25% Reductions starting at X-RAY	Inbound: X-RAY Outbound: ZULU	70%
13C3	20% Decrease	25% Reductions starting at X-RAY	Inbound: YANKEE Outbound: ZULU	70%
13D3	20% Decrease	25% Reductions starting at X-RAY	Inbound: ZULU Outbound: ZULU	70%
13E3	20% Decrease	25% Reductions starting at X-RAY	Inbound: WHISKEY Outbound: YANKEE	70%

13F3	20% Decrease	25% Reductions starting at X-RAY	Inbound: X-RAY Outbound: YANKEE	70%
13G3	20% Decrease	25% Reductions starting at X-RAY	Inbound: YANKEE Outbound: YANKEE	70%
13H3	20% Decrease	25% Reductions starting at X-RAY	Inbound: ZULU Outbound: YANKEE	70%
13I3	20% Decrease	25% Reductions starting at X-RAY	Inbound: WHISKEY Outbound: X-RAY	70%
13J3	20% Decrease	25% Reductions starting at X-RAY	Inbound: X-RAY Outbound: X-RAY	70%
13K3	20% Decrease	25% Reductions starting at X-RAY	Inbound: YANKEE Outbound: X-RAY	70%
13L3	20% Decrease	25% Reductions starting at X-RAY	Inbound: ZULU Outbound: X-RAY	70%
13M3	20% Decrease	25% Reductions starting at X-RAY	Inbound: WHISKEY Outbound: WHISKEY	70%
13N3	20% Decrease	25% Reductions starting at X-RAY	Inbound: X-RAY Outbound: WHISKEY	70%
13O3	20% Decrease	25% Reductions starting at X-RAY	Inbound: YANKEE Outbound: WHISKEY	70%
13P3	20% Decrease	25% Reductions starting at X-RAY	Inbound: ZULU Outbound: WHISKEY	70%
14A1	20% Decrease	25% Reductions starting at YANKEE	Inbound: WHISKEY Outbound: ZULU	100%
14B1	20% Decrease	25% Reductions starting at YANKEE	Inbound: X-RAY Outbound: ZULU	100%
14C1	20% Decrease	25% Reductions starting at YANKEE	Inbound: YANKEE Outbound: ZULU	100%
14D1	20% Decrease	25% Reductions starting at YANKEE	Inbound: ZULU Outbound: ZULU	100%
14E1	20% Decrease	25% Reductions starting at YANKEE	Inbound: WHISKEY Outbound: YANKEE	100%
14F1	20% Decrease	25% Reductions starting at YANKEE	Inbound: X-RAY Outbound: YANKEE	100%
14G1	20% Decrease	25% Reductions starting at YANKEE	Inbound: YANKEE Outbound: YANKEE	100%
14H1	20% Decrease	25% Reductions starting at YANKEE	Inbound: ZULU Outbound: YANKEE	100%
14I1	20% Decrease	25% Reductions starting at YANKEE	Inbound: WHISKEY Outbound: X-RAY	100%
14J1	20% Decrease	25% Reductions starting at YANKEE	Inbound: X-RAY Outbound: X-RAY	100%
14K1	20% Decrease	25% Reductions starting at YANKEE	Inbound: YANKEE Outbound: X-RAY	100%
14L1	20% Decrease	25% Reductions starting at YANKEE	Inbound: ZULU Outbound: X-RAY	100%
14M1	20% Decrease	25% Reductions starting at YANKEE	Inbound: WHISKEY Outbound: WHISKEY	100%
14N1	20% Decrease	25% Reductions starting at YANKEE	Inbound: X-RAY Outbound: WHISKEY	100%
14O1	20% Decrease	25% Reductions starting at YANKEE	Inbound: YANKEE Outbound: WHISKEY	100%
14P1	20% Decrease	25% Reductions starting at YANKEE	Inbound: ZULU Outbound: WHISKEY	100%

14A2	20% Decrease	25% Reductions starting at YANKEE	Inbound: WHISKEY Outbound: ZULU	85%
14B2	20% Decrease	25% Reductions starting at YANKEE	Inbound: X-RAY Outbound: ZULU	85%
14C2	20% Decrease	25% Reductions starting at YANKEE	Inbound: YANKEE Outbound: ZULU	85%
14D2	20% Decrease	25% Reductions starting at YANKEE	Inbound: ZULU Outbound: ZULU	85%
14E2	20% Decrease	25% Reductions starting at YANKEE	Inbound: WHISKEY Outbound: YANKEE	85%
14F2	20% Decrease	25% Reductions starting at YANKEE	Inbound: X-RAY Outbound: YANKEE	85%
14G2	20% Decrease	25% Reductions starting at YANKEE	Inbound: YANKEE Outbound: YANKEE	85%
14H2	20% Decrease	25% Reductions starting at YANKEE	Inbound: ZULU Outbound: YANKEE	85%
14I2	20% Decrease	25% Reductions starting at YANKEE	Inbound: WHISKEY Outbound: X-RAY	85%
14J2	20% Decrease	25% Reductions starting at YANKEE	Inbound: X-RAY Outbound: X-RAY	85%
14K2	20% Decrease	25% Reductions starting at YANKEE	Inbound: YANKEE Outbound: X-RAY	85%
14L2	20% Decrease	25% Reductions starting at YANKEE	Inbound: ZULU Outbound: X-RAY	85%
14M2	20% Decrease	25% Reductions starting at YANKEE	Inbound: WHISKEY Outbound: WHISKEY	85%
14N2	20% Decrease	25% Reductions starting at YANKEE	Inbound: X-RAY Outbound: WHISKEY	85%
14O2	20% Decrease	25% Reductions starting at YANKEE	Inbound: YANKEE Outbound: WHISKEY	85%
14P2	20% Decrease	25% Reductions starting at YANKEE	Inbound: ZULU Outbound: WHISKEY	85%
14A3	20% Decrease	25% Reductions starting at YANKEE	Inbound: WHISKEY Outbound: ZULU	70%
14B3	20% Decrease	25% Reductions starting at YANKEE	Inbound: X-RAY Outbound: ZULU	70%
14C3	20% Decrease	25% Reductions starting at YANKEE	Inbound: YANKEE Outbound: ZULU	70%
14D3	20% Decrease	25% Reductions starting at YANKEE	Inbound: ZULU Outbound: ZULU	70%
14E3	20% Decrease	25% Reductions starting at YANKEE	Inbound: WHISKEY Outbound: YANKEE	70%
14F3	20% Decrease	25% Reductions starting at YANKEE	Inbound: X-RAY Outbound: YANKEE	70%
14G3	20% Decrease	25% Reductions starting at YANKEE	Inbound: YANKEE Outbound: YANKEE	70%
14H3	20% Decrease	25% Reductions starting at YANKEE	Inbound: ZULU Outbound: YANKEE	70%
14I3	20% Decrease	25% Reductions starting at YANKEE	Inbound: WHISKEY Outbound: X-RAY	70%
14J3	20% Decrease	25% Reductions starting at YANKEE	Inbound: X-RAY Outbound: X-RAY	70%
14K3	20% Decrease	25% Reductions starting at YANKEE	Inbound: YANKEE Outbound: X-RAY	70%

14L3	20% Decrease	25% Reductions starting at YANKEE	Inbound: ZULU Outbound: X-RAY	70%
14M3	20% Decrease	25% Reductions starting at YANKEE	Inbound: WHISKEY Outbound: WHISKEY	70%
14N3	20% Decrease	25% Reductions starting at YANKEE	Inbound: X-RAY Outbound: WHISKEY	70%
14O3	20% Decrease	25% Reductions starting at YANKEE	Inbound: YANKEE Outbound: WHISKEY	70%
14P3	20% Decrease	25% Reductions starting at YANKEE	Inbound: ZULU Outbound: WHISKEY	70%
15A1	20% Decrease	25% Reductions starting at ZULU	Inbound: WHISKEY Outbound: ZULU	100%
15B1	20% Decrease	25% Reductions starting at ZULU	Inbound: X-RAY Outbound: ZULU	100%
15C1	20% Decrease	25% Reductions starting at ZULU	Inbound: YANKEE Outbound: ZULU	100%
15D1	20% Decrease	25% Reductions starting at ZULU	Inbound: ZULU Outbound: ZULU	100%
15E1	20% Decrease	25% Reductions starting at ZULU	Inbound: WHISKEY Outbound: YANKEE	100%
15F1	20% Decrease	25% Reductions starting at ZULU	Inbound: X-RAY Outbound: YANKEE	100%
15G1	20% Decrease	25% Reductions starting at ZULU	Inbound: YANKEE Outbound: YANKEE	100%
15H1	20% Decrease	25% Reductions starting at ZULU	Inbound: ZULU Outbound: YANKEE	100%
15I1	20% Decrease	25% Reductions starting at ZULU	Inbound: WHISKEY Outbound: X-RAY	100%
15J1	20% Decrease	25% Reductions starting at ZULU	Inbound: X-RAY Outbound: X-RAY	100%
15K1	20% Decrease	25% Reductions starting at ZULU	Inbound: YANKEE Outbound: X-RAY	100%
15L1	20% Decrease	25% Reductions starting at ZULU	Inbound: ZULU Outbound: X-RAY	100%
15M1	20% Decrease	25% Reductions starting at ZULU	Inbound: WHISKEY Outbound: WHISKEY	100%
15N1	20% Decrease	25% Reductions starting at ZULU	Inbound: X-RAY Outbound: WHISKEY	100%
15O1	20% Decrease	25% Reductions starting at ZULU	Inbound: YANKEE Outbound: WHISKEY	100%
15P1	20% Decrease	25% Reductions starting at ZULU	Inbound: ZULU Outbound: WHISKEY	100%
15A2	20% Decrease	25% Reductions starting at ZULU	Inbound: WHISKEY Outbound: ZULU	85%
15B2	20% Decrease	25% Reductions starting at ZULU	Inbound: X-RAY Outbound: ZULU	85%
15C2	20% Decrease	25% Reductions starting at ZULU	Inbound: YANKEE Outbound: ZULU	85%
15D2	20% Decrease	25% Reductions starting at ZULU	Inbound: ZULU Outbound: ZULU	85%
15E2	20% Decrease	25% Reductions starting at ZULU	Inbound: WHISKEY Outbound: YANKEE	85%
15F2	20% Decrease	25% Reductions starting at ZULU	Inbound: X-RAY Outbound: YANKEE	85%

15G2	20% Decrease	25% Reductions starting at ZULU	Inbound: YANKEE Outbound: YANKEE	85%
15H2	20% Decrease	25% Reductions starting at ZULU	Inbound: ZULU Outbound: YANKEE	85%
15I2	20% Decrease	25% Reductions starting at ZULU	Inbound: WHISKEY Outbound: X-RAY	85%
15J2	20% Decrease	25% Reductions starting at ZULU	Inbound: X-RAY Outbound: X-RAY	85%
15K2	20% Decrease	25% Reductions starting at ZULU	Inbound: YANKEE Outbound: X-RAY	85%
15L2	20% Decrease	25% Reductions starting at ZULU	Inbound: ZULU Outbound: X-RAY	85%
15M2	20% Decrease	25% Reductions starting at ZULU	Inbound: WHISKEY Outbound: WHISKEY	85%
15N2	20% Decrease	25% Reductions starting at ZULU	Inbound: X-RAY Outbound: WHISKEY	85%
15O2	20% Decrease	25% Reductions starting at ZULU	Inbound: YANKEE Outbound: WHISKEY	85%
15P2	20% Decrease	25% Reductions starting at ZULU	Inbound: ZULU Outbound: WHISKEY	85%
15A3	20% Decrease	25% Reductions starting at ZULU	Inbound: WHISKEY Outbound: ZULU	70%
15B3	20% Decrease	25% Reductions starting at ZULU	Inbound: X-RAY Outbound: ZULU	70%
15C3	20% Decrease	25% Reductions starting at ZULU	Inbound: YANKEE Outbound: ZULU	70%
15D3	20% Decrease	25% Reductions starting at ZULU	Inbound: ZULU Outbound: ZULU	70%
15E3	20% Decrease	25% Reductions starting at ZULU	Inbound: WHISKEY Outbound: YANKEE	70%
15F3	20% Decrease	25% Reductions starting at ZULU	Inbound: X-RAY Outbound: YANKEE	70%
15G3	20% Decrease	25% Reductions starting at ZULU	Inbound: YANKEE Outbound: YANKEE	70%
15H3	20% Decrease	25% Reductions starting at ZULU	Inbound: ZULU Outbound: YANKEE	70%
15I3	20% Decrease	25% Reductions starting at ZULU	Inbound: WHISKEY Outbound: X-RAY	70%
15J3	20% Decrease	25% Reductions starting at ZULU	Inbound: X-RAY Outbound: X-RAY	70%
15K3	20% Decrease	25% Reductions starting at ZULU	Inbound: YANKEE Outbound: X-RAY	70%
15L3	20% Decrease	25% Reductions starting at ZULU	Inbound: ZULU Outbound: X-RAY	70%
15M3	20% Decrease	25% Reductions starting at ZULU	Inbound: WHISKEY Outbound: WHISKEY	70%
15N3	20% Decrease	25% Reductions starting at ZULU	Inbound: X-RAY Outbound: WHISKEY	70%
15O3	20% Decrease	25% Reductions starting at ZULU	Inbound: YANKEE Outbound: WHISKEY	70%
15P3	20% Decrease	25% Reductions starting at ZULU	Inbound: ZULU Outbound: WHISKEY	70%
31A1	20% Increase	As Needed	Inbound: WHISKEY Outbound: ZULU	100%

31B1	20% Increase	As Needed	Inbound: X-RAY Outbound: ZULU	100%
31C1	20% Increase	As Needed	Inbound: YANKEE Outbound: ZULU	100%
31D1	20% Increase	As Needed	Inbound: ZULU Outbound: ZULU	100%
31E1	20% Increase	As Needed	Inbound: WHISKEY Outbound: YANKEE	100%
31F1	20% Increase	As Needed	Inbound: X-RAY Outbound: YANKEE	100%
31G1	20% Increase	As Needed	Inbound: YANKEE Outbound: YANKEE	100%
31H1	20% Increase	As Needed	Inbound: ZULU Outbound: YANKEE	100%
31I1	20% Increase	As Needed	Inbound: WHISKEY Outbound: X-RAY	100%
31J1	20% Increase	As Needed	Inbound: X-RAY Outbound: X-RAY	100%
31K1	20% Increase	As Needed	Inbound: YANKEE Outbound: X-RAY	100%
31L1	20% Increase	As Needed	Inbound: ZULU Outbound: X-RAY	100%
31M1	20% Increase	As Needed	Inbound: WHISKEY Outbound: WHISKEY	100%
31N1	20% Increase	As Needed	Inbound: X-RAY Outbound: WHISKEY	100%
31O1	20% Increase	As Needed	Inbound: YANKEE Outbound: WHISKEY	100%
31P1	20% Increase	As Needed	Inbound: ZULU Outbound: WHISKEY	100%
31A2	20% Increase	As Needed	Inbound: WHISKEY Outbound: ZULU	85%
31B2	20% Increase	As Needed	Inbound: X-RAY Outbound: ZULU	85%
31C2	20% Increase	As Needed	Inbound: YANKEE Outbound: ZULU	85%
31D2	20% Increase	As Needed	Inbound: ZULU Outbound: ZULU	85%
31E2	20% Increase	As Needed	Inbound: WHISKEY Outbound: YANKEE	85%
31F2	20% Increase	As Needed	Inbound: X-RAY Outbound: YANKEE	85%
31G2	20% Increase	As Needed	Inbound: YANKEE Outbound: YANKEE	85%
31H2	20% Increase	As Needed	Inbound: ZULU Outbound: YANKEE	85%
31I2	20% Increase	As Needed	Inbound: WHISKEY Outbound: X-RAY	85%
31J2	20% Increase	As Needed	Inbound: X-RAY Outbound: X-RAY	85%
31K2	20% Increase	As Needed	Inbound: YANKEE Outbound: X-RAY	85%
31L2	20% Increase	As Needed	Inbound: ZULU Outbound: X-RAY	85%

31M2	20% Increase	As Needed	Inbound: WHISKEY Outbound: WHISKEY	85%
31N2	20% Increase	As Needed	Inbound: X-RAY Outbound: WHISKEY	85%
31O2	20% Increase	As Needed	Inbound: YANKEE Outbound: WHISKEY	85%
31P2	20% Increase	As Needed	Inbound: ZULU Outbound: WHISKEY	85%
31A3	20% Increase	As Needed	Inbound: WHISKEY Outbound: ZULU	70%
31B3	20% Increase	As Needed	Inbound: X-RAY Outbound: ZULU	70%
31C3	20% Increase	As Needed	Inbound: YANKEE Outbound: ZULU	70%
31D3	20% Increase	As Needed	Inbound: ZULU Outbound: ZULU	70%
31E3	20% Increase	As Needed	Inbound: WHISKEY Outbound: YANKEE	70%
31F3	20% Increase	As Needed	Inbound: X-RAY Outbound: YANKEE	70%
31G3	20% Increase	As Needed	Inbound: YANKEE Outbound: YANKEE	70%
31H3	20% Increase	As Needed	Inbound: ZULU Outbound: YANKEE	70%
31I3	20% Increase	As Needed	Inbound: WHISKEY Outbound: X-RAY	70%
31J3	20% Increase	As Needed	Inbound: X-RAY Outbound: X-RAY	70%
31K3	20% Increase	As Needed	Inbound: YANKEE Outbound: X-RAY	70%
31L3	20% Increase	As Needed	Inbound: ZULU Outbound: X-RAY	70%
31M3	20% Increase	As Needed	Inbound: WHISKEY Outbound: WHISKEY	70%
31N3	20% Increase	As Needed	Inbound: X-RAY Outbound: WHISKEY	70%
31O3	20% Increase	As Needed	Inbound: YANKEE Outbound: WHISKEY	70%
31P3	20% Increase	As Needed	Inbound: ZULU Outbound: WHISKEY	70%
32A1	20% Increase	25% Reductions starting at WHISKEY	Inbound: WHISKEY Outbound: ZULU	100%
32B1	20% Increase	25% Reductions starting at WHISKEY	Inbound: X-RAY Outbound: ZULU	100%
32C1	20% Increase	25% Reductions starting at WHISKEY	Inbound: YANKEE Outbound: ZULU	100%
32D1	20% Increase	25% Reductions starting at WHISKEY	Inbound: ZULU Outbound: ZULU	100%
32E1	20% Increase	25% Reductions starting at WHISKEY	Inbound: WHISKEY Outbound: YANKEE	100%
32F1	20% Increase	25% Reductions starting at WHISKEY	Inbound: X-RAY Outbound: YANKEE	100%
32G1	20% Increase	25% Reductions starting at WHISKEY	Inbound: YANKEE Outbound: YANKEE	100%

32H1	20% Increase	25% Reductions starting at WHISKEY	Inbound: ZULU Outbound: YANKEE	100%
32I1	20% Increase	25% Reductions starting at WHISKEY	Inbound: WHISKEY Outbound: X-RAY	100%
32J1	20% Increase	25% Reductions starting at WHISKEY	Inbound: X-RAY Outbound: X-RAY	100%
32K1	20% Increase	25% Reductions starting at WHISKEY	Inbound: YANKEE Outbound: X-RAY	100%
32L1	20% Increase	25% Reductions starting at WHISKEY	Inbound: ZULU Outbound: X-RAY	100%
32M1	20% Increase	25% Reductions starting at WHISKEY	Inbound: WHISKEY Outbound: WHISKEY	100%
32N1	20% Increase	25% Reductions starting at WHISKEY	Inbound: X-RAY Outbound: WHISKEY	100%
32O1	20% Increase	25% Reductions starting at WHISKEY	Inbound: YANKEE Outbound: WHISKEY	100%
32P1	20% Increase	25% Reductions starting at WHISKEY	Inbound: ZULU Outbound: WHISKEY	100%
32A2	20% Increase	25% Reductions starting at WHISKEY	Inbound: WHISKEY Outbound: ZULU	85%
32B2	20% Increase	25% Reductions starting at WHISKEY	Inbound: X-RAY Outbound: ZULU	85%
32C2	20% Increase	25% Reductions starting at WHISKEY	Inbound: YANKEE Outbound: ZULU	85%
32D2	20% Increase	25% Reductions starting at WHISKEY	Inbound: ZULU Outbound: ZULU	85%
32E2	20% Increase	25% Reductions starting at WHISKEY	Inbound: WHISKEY Outbound: YANKEE	85%
32F2	20% Increase	25% Reductions starting at WHISKEY	Inbound: X-RAY Outbound: YANKEE	85%
32G2	20% Increase	25% Reductions starting at WHISKEY	Inbound: YANKEE Outbound: YANKEE	85%
32H2	20% Increase	25% Reductions starting at WHISKEY	Inbound: ZULU Outbound: YANKEE	85%
32I2	20% Increase	25% Reductions starting at WHISKEY	Inbound: WHISKEY Outbound: X-RAY	85%
32J2	20% Increase	25% Reductions starting at WHISKEY	Inbound: X-RAY Outbound: X-RAY	85%
32K2	20% Increase	25% Reductions starting at WHISKEY	Inbound: YANKEE Outbound: X-RAY	85%
32L2	20% Increase	25% Reductions starting at WHISKEY	Inbound: ZULU Outbound: X-RAY	85%
32M2	20% Increase	25% Reductions starting at WHISKEY	Inbound: WHISKEY Outbound: WHISKEY	85%
32N2	20% Increase	25% Reductions starting at WHISKEY	Inbound: X-RAY Outbound: WHISKEY	85%
32O2	20% Increase	25% Reductions starting at WHISKEY	Inbound: YANKEE Outbound: WHISKEY	85%
32P2	20% Increase	25% Reductions starting at WHISKEY	Inbound: ZULU Outbound: WHISKEY	85%
32A3	20% Increase	25% Reductions starting at WHISKEY	Inbound: WHISKEY Outbound: ZULU	70%
32B3	20% Increase	25% Reductions starting at WHISKEY	Inbound: X-RAY Outbound: ZULU	70%

32C3	20% Increase	25% Reductions starting at WHISKEY	Inbound: YANKEE Outbound: ZULU	70%
32D3	20% Increase	25% Reductions starting at WHISKEY	Inbound: ZULU Outbound: ZULU	70%
32E3	20% Increase	25% Reductions starting at WHISKEY	Inbound: WHISKEY Outbound: YANKEE	70%
32F3	20% Increase	25% Reductions starting at WHISKEY	Inbound: X-RAY Outbound: YANKEE	70%
32G3	20% Increase	25% Reductions starting at WHISKEY	Inbound: YANKEE Outbound: YANKEE	70%
32H3	20% Increase	25% Reductions starting at WHISKEY	Inbound: ZULU Outbound: YANKEE	70%
32I3	20% Increase	25% Reductions starting at WHISKEY	Inbound: WHISKEY Outbound: X-RAY	70%
32J3	20% Increase	25% Reductions starting at WHISKEY	Inbound: X-RAY Outbound: X-RAY	70%
32K3	20% Increase	25% Reductions starting at WHISKEY	Inbound: YANKEE Outbound: X-RAY	70%
32L3	20% Increase	25% Reductions starting at WHISKEY	Inbound: ZULU Outbound: X-RAY	70%
32M3	20% Increase	25% Reductions starting at WHISKEY	Inbound: WHISKEY Outbound: WHISKEY	70%
32N3	20% Increase	25% Reductions starting at WHISKEY	Inbound: X-RAY Outbound: WHISKEY	70%
32O3	20% Increase	25% Reductions starting at WHISKEY	Inbound: YANKEE Outbound: WHISKEY	70%
32P3	20% Increase	25% Reductions starting at WHISKEY	Inbound: ZULU Outbound: WHISKEY	70%
33A1	20% Increase	25% Reductions starting at X-RAY	Inbound: WHISKEY Outbound: ZULU	100%
33B1	20% Increase	25% Reductions starting at X-RAY	Inbound: X-RAY Outbound: ZULU	100%
33C1	20% Increase	25% Reductions starting at X-RAY	Inbound: YANKEE Outbound: ZULU	100%
33D1	20% Increase	25% Reductions starting at X-RAY	Inbound: ZULU Outbound: ZULU	100%
33E1	20% Increase	25% Reductions starting at X-RAY	Inbound: WHISKEY Outbound: YANKEE	100%
33F1	20% Increase	25% Reductions starting at X-RAY	Inbound: X-RAY Outbound: YANKEE	100%
33G1	20% Increase	25% Reductions starting at X-RAY	Inbound: YANKEE Outbound: YANKEE	100%
33H1	20% Increase	25% Reductions starting at X-RAY	Inbound: ZULU Outbound: YANKEE	100%
33I1	20% Increase	25% Reductions starting at X-RAY	Inbound: WHISKEY Outbound: X-RAY	100%
33J1	20% Increase	25% Reductions starting at X-RAY	Inbound: X-RAY Outbound: X-RAY	100%
33K1	20% Increase	25% Reductions starting at X-RAY	Inbound: YANKEE Outbound: X-RAY	100%
33L1	20% Increase	25% Reductions starting at X-RAY	Inbound: ZULU Outbound: X-RAY	100%
33M1	20% Increase	25% Reductions starting at X-RAY	Inbound: WHISKEY Outbound: WHISKEY	100%

33N1	20% Increase	25% Reductions starting at X-RAY	Inbound: X-RAY Outbound: WHISKEY	100%
33O1	20% Increase	25% Reductions starting at X-RAY	Inbound: YANKEE Outbound: WHISKEY	100%
33P1	20% Increase	25% Reductions starting at X-RAY	Inbound: ZULU Outbound: WHISKEY	100%
33A2	20% Increase	25% Reductions starting at X-RAY	Inbound: WHISKEY Outbound: ZULU	85%
33B2	20% Increase	25% Reductions starting at X-RAY	Inbound: X-RAY Outbound: ZULU	85%
33C2	20% Increase	25% Reductions starting at X-RAY	Inbound: YANKEE Outbound: ZULU	85%
33D2	20% Increase	25% Reductions starting at X-RAY	Inbound: ZULU Outbound: ZULU	85%
33E2	20% Increase	25% Reductions starting at X-RAY	Inbound: WHISKEY Outbound: YANKEE	85%
33F2	20% Increase	25% Reductions starting at X-RAY	Inbound: X-RAY Outbound: YANKEE	85%
33G2	20% Increase	25% Reductions starting at X-RAY	Inbound: YANKEE Outbound: YANKEE	85%
33H2	20% Increase	25% Reductions starting at X-RAY	Inbound: ZULU Outbound: YANKEE	85%
33I2	20% Increase	25% Reductions starting at X-RAY	Inbound: WHISKEY Outbound: X-RAY	85%
33J2	20% Increase	25% Reductions starting at X-RAY	Inbound: X-RAY Outbound: X-RAY	85%
33K2	20% Increase	25% Reductions starting at X-RAY	Inbound: YANKEE Outbound: X-RAY	85%
33L2	20% Increase	25% Reductions starting at X-RAY	Inbound: ZULU Outbound: X-RAY	85%
33M2	20% Increase	25% Reductions starting at X-RAY	Inbound: WHISKEY Outbound: WHISKEY	85%
33N2	20% Increase	25% Reductions starting at X-RAY	Inbound: X-RAY Outbound: WHISKEY	85%
33O2	20% Increase	25% Reductions starting at X-RAY	Inbound: YANKEE Outbound: WHISKEY	85%
33P2	20% Increase	25% Reductions starting at X-RAY	Inbound: ZULU Outbound: WHISKEY	85%
33A3	20% Increase	25% Reductions starting at X-RAY	Inbound: WHISKEY Outbound: ZULU	70%
33B3	20% Increase	25% Reductions starting at X-RAY	Inbound: X-RAY Outbound: ZULU	70%
33C3	20% Increase	25% Reductions starting at X-RAY	Inbound: YANKEE Outbound: ZULU	70%
33D3	20% Increase	25% Reductions starting at X-RAY	Inbound: ZULU Outbound: ZULU	70%
33E3	20% Increase	25% Reductions starting at X-RAY	Inbound: WHISKEY Outbound: YANKEE	70%
33F3	20% Increase	25% Reductions starting at X-RAY	Inbound: X-RAY Outbound: YANKEE	70%
33G3	20% Increase	25% Reductions starting at X-RAY	Inbound: YANKEE Outbound: YANKEE	70%
33H3	20% Increase	25% Reductions starting at X-RAY	Inbound: ZULU Outbound: YANKEE	70%

33I3	20% Increase	25% Reductions starting at X-RAY	Inbound: WHISKEY Outbound: X-RAY	70%
33J3	20% Increase	25% Reductions starting at X-RAY	Inbound: X-RAY Outbound: X-RAY	70%
33K3	20% Increase	25% Reductions starting at X-RAY	Inbound: YANKEE Outbound: X-RAY	70%
33L3	20% Increase	25% Reductions starting at X-RAY	Inbound: ZULU Outbound: X-RAY	70%
33M3	20% Increase	25% Reductions starting at X-RAY	Inbound: WHISKEY Outbound: WHISKEY	70%
33N3	20% Increase	25% Reductions starting at X-RAY	Inbound: X-RAY Outbound: WHISKEY	70%
33O3	20% Increase	25% Reductions starting at X-RAY	Inbound: YANKEE Outbound: WHISKEY	70%
33P3	20% Increase	25% Reductions starting at X-RAY	Inbound: ZULU Outbound: WHISKEY	70%
34A1	20% Increase	25% Reductions starting at YANKEE	Inbound: WHISKEY Outbound: ZULU	100%
34B1	20% Increase	25% Reductions starting at YANKEE	Inbound: X-RAY Outbound: ZULU	100%
34C1	20% Increase	25% Reductions starting at YANKEE	Inbound: YANKEE Outbound: ZULU	100%
34D1	20% Increase	25% Reductions starting at YANKEE	Inbound: ZULU Outbound: ZULU	100%
34E1	20% Increase	25% Reductions starting at YANKEE	Inbound: WHISKEY Outbound: YANKEE	100%
34F1	20% Increase	25% Reductions starting at YANKEE	Inbound: X-RAY Outbound: YANKEE	100%
34G1	20% Increase	25% Reductions starting at YANKEE	Inbound: YANKEE Outbound: YANKEE	100%
34H1	20% Increase	25% Reductions starting at YANKEE	Inbound: ZULU Outbound: YANKEE	100%
34I1	20% Increase	25% Reductions starting at YANKEE	Inbound: WHISKEY Outbound: X-RAY	100%
34J1	20% Increase	25% Reductions starting at YANKEE	Inbound: X-RAY Outbound: X-RAY	100%
34K1	20% Increase	25% Reductions starting at YANKEE	Inbound: YANKEE Outbound: X-RAY	100%
34L1	20% Increase	25% Reductions starting at YANKEE	Inbound: ZULU Outbound: X-RAY	100%
34M1	20% Increase	25% Reductions starting at YANKEE	Inbound: WHISKEY Outbound: WHISKEY	100%
34N1	20% Increase	25% Reductions starting at YANKEE	Inbound: X-RAY Outbound: WHISKEY	100%
34O1	20% Increase	25% Reductions starting at YANKEE	Inbound: YANKEE Outbound: WHISKEY	100%
34P1	20% Increase	25% Reductions starting at YANKEE	Inbound: ZULU Outbound: WHISKEY	100%
34A2	20% Increase	25% Reductions starting at YANKEE	Inbound: WHISKEY Outbound: ZULU	85%
34B2	20% Increase	25% Reductions starting at YANKEE	Inbound: X-RAY Outbound: ZULU	85%
34C2	20% Increase	25% Reductions starting at YANKEE	Inbound: YANKEE Outbound: ZULU	85%

34D2	20% Increase	25% Reductions starting at YANKEE	Inbound: ZULU Outbound: ZULU	85%
34E2	20% Increase	25% Reductions starting at YANKEE	Inbound: WHISKEY Outbound: YANKEE	85%
34F2	20% Increase	25% Reductions starting at YANKEE	Inbound: X-RAY Outbound: YANKEE	85%
34G2	20% Increase	25% Reductions starting at YANKEE	Inbound: YANKEE Outbound: YANKEE	85%
34H2	20% Increase	25% Reductions starting at YANKEE	Inbound: ZULU Outbound: YANKEE	85%
34I2	20% Increase	25% Reductions starting at YANKEE	Inbound: WHISKEY Outbound: X-RAY	85%
34J2	20% Increase	25% Reductions starting at YANKEE	Inbound: X-RAY Outbound: X-RAY	85%
34K2	20% Increase	25% Reductions starting at YANKEE	Inbound: YANKEE Outbound: X-RAY	85%
34L2	20% Increase	25% Reductions starting at YANKEE	Inbound: ZULU Outbound: X-RAY	85%
34M2	20% Increase	25% Reductions starting at YANKEE	Inbound: WHISKEY Outbound: WHISKEY	85%
34N2	20% Increase	25% Reductions starting at YANKEE	Inbound: X-RAY Outbound: WHISKEY	85%
34O2	20% Increase	25% Reductions starting at YANKEE	Inbound: YANKEE Outbound: WHISKEY	85%
34P2	20% Increase	25% Reductions starting at YANKEE	Inbound: ZULU Outbound: WHISKEY	85%
34A3	20% Increase	25% Reductions starting at YANKEE	Inbound: WHISKEY Outbound: ZULU	70%
34B3	20% Increase	25% Reductions starting at YANKEE	Inbound: X-RAY Outbound: ZULU	70%
34C3	20% Increase	25% Reductions starting at YANKEE	Inbound: YANKEE Outbound: ZULU	70%
34D3	20% Increase	25% Reductions starting at YANKEE	Inbound: ZULU Outbound: ZULU	70%
34E3	20% Increase	25% Reductions starting at YANKEE	Inbound: WHISKEY Outbound: YANKEE	70%
34F3	20% Increase	25% Reductions starting at YANKEE	Inbound: X-RAY Outbound: YANKEE	70%
34G3	20% Increase	25% Reductions starting at YANKEE	Inbound: YANKEE Outbound: YANKEE	70%
34H3	20% Increase	25% Reductions starting at YANKEE	Inbound: ZULU Outbound: YANKEE	70%
34I3	20% Increase	25% Reductions starting at YANKEE	Inbound: WHISKEY Outbound: X-RAY	70%
34J3	20% Increase	25% Reductions starting at YANKEE	Inbound: X-RAY Outbound: X-RAY	70%
34K3	20% Increase	25% Reductions starting at YANKEE	Inbound: YANKEE Outbound: X-RAY	70%
34L3	20% Increase	25% Reductions starting at YANKEE	Inbound: ZULU Outbound: X-RAY	70%
34M3	20% Increase	25% Reductions starting at YANKEE	Inbound: WHISKEY Outbound: WHISKEY	70%
34N3	20% Increase	25% Reductions starting at YANKEE	Inbound: X-RAY Outbound: WHISKEY	70%

34O3	20% Increase	25% Reductions starting at YANKEE	Inbound: YANKEE Outbound: WHISKEY	70%
34P3	20% Increase	25% Reductions starting at YANKEE	Inbound: ZULU Outbound: WHISKEY	70%
35A1	20% Increase	25% Reductions starting at ZULU	Inbound: WHISKEY Outbound: ZULU	100%
35B1	20% Increase	25% Reductions starting at ZULU	Inbound: X-RAY Outbound: ZULU	100%
35C1	20% Increase	25% Reductions starting at ZULU	Inbound: YANKEE Outbound: ZULU	100%
35D1	20% Increase	25% Reductions starting at ZULU	Inbound: ZULU Outbound: ZULU	100%
35E1	20% Increase	25% Reductions starting at ZULU	Inbound: WHISKEY Outbound: YANKEE	100%
35F1	20% Increase	25% Reductions starting at ZULU	Inbound: X-RAY Outbound: YANKEE	100%
35G1	20% Increase	25% Reductions starting at ZULU	Inbound: YANKEE Outbound: YANKEE	100%
35H1	20% Increase	25% Reductions starting at ZULU	Inbound: ZULU Outbound: YANKEE	100%
35I1	20% Increase	25% Reductions starting at ZULU	Inbound: WHISKEY Outbound: X-RAY	100%
35J1	20% Increase	25% Reductions starting at ZULU	Inbound: X-RAY Outbound: X-RAY	100%
35K1	20% Increase	25% Reductions starting at ZULU	Inbound: YANKEE Outbound: X-RAY	100%
35L1	20% Increase	25% Reductions starting at ZULU	Inbound: ZULU Outbound: X-RAY	100%
35M1	20% Increase	25% Reductions starting at ZULU	Inbound: WHISKEY Outbound: WHISKEY	100%
35N1	20% Increase	25% Reductions starting at ZULU	Inbound: X-RAY Outbound: WHISKEY	100%
35O1	20% Increase	25% Reductions starting at ZULU	Inbound: YANKEE Outbound: WHISKEY	100%
35P1	20% Increase	25% Reductions starting at ZULU	Inbound: ZULU Outbound: WHISKEY	100%
35A2	20% Increase	25% Reductions starting at ZULU	Inbound: WHISKEY Outbound: ZULU	85%
35B2	20% Increase	25% Reductions starting at ZULU	Inbound: X-RAY Outbound: ZULU	85%
35C2	20% Increase	25% Reductions starting at ZULU	Inbound: YANKEE Outbound: ZULU	85%
35D2	20% Increase	25% Reductions starting at ZULU	Inbound: ZULU Outbound: ZULU	85%
35E2	20% Increase	25% Reductions starting at ZULU	Inbound: WHISKEY Outbound: YANKEE	85%
35F2	20% Increase	25% Reductions starting at ZULU	Inbound: X-RAY Outbound: YANKEE	85%
35G2	20% Increase	25% Reductions starting at ZULU	Inbound: YANKEE Outbound: YANKEE	85%
35H2	20% Increase	25% Reductions starting at ZULU	Inbound: ZULU Outbound: YANKEE	85%
35I2	20% Increase	25% Reductions starting at ZULU	Inbound: WHISKEY Outbound: X-RAY	85%

35J2	20% Increase	25% Reductions starting at ZULU	Inbound: X-RAY Outbound: X-RAY	85%
35K2	20% Increase	25% Reductions starting at ZULU	Inbound: YANKEE Outbound: X-RAY	85%
35L2	20% Increase	25% Reductions starting at ZULU	Inbound: ZULU Outbound: X-RAY	85%
35M2	20% Increase	25% Reductions starting at ZULU	Inbound: WHISKEY Outbound: WHISKEY	85%
35N2	20% Increase	25% Reductions starting at ZULU	Inbound: X-RAY Outbound: WHISKEY	85%
35O2	20% Increase	25% Reductions starting at ZULU	Inbound: YANKEE Outbound: WHISKEY	85%
35P2	20% Increase	25% Reductions starting at ZULU	Inbound: ZULU Outbound: WHISKEY	85%
35A3	20% Increase	25% Reductions starting at ZULU	Inbound: WHISKEY Outbound: ZULU	70%
35B3	20% Increase	25% Reductions starting at ZULU	Inbound: X-RAY Outbound: ZULU	70%
35C3	20% Increase	25% Reductions starting at ZULU	Inbound: YANKEE Outbound: ZULU	70%
35D3	20% Increase	25% Reductions starting at ZULU	Inbound: ZULU Outbound: ZULU	70%
35E3	20% Increase	25% Reductions starting at ZULU	Inbound: WHISKEY Outbound: YANKEE	70%
35F3	20% Increase	25% Reductions starting at ZULU	Inbound: X-RAY Outbound: YANKEE	70%
35G3	20% Increase	25% Reductions starting at ZULU	Inbound: YANKEE Outbound: YANKEE	70%
35H3	20% Increase	25% Reductions starting at ZULU	Inbound: ZULU Outbound: YANKEE	70%
35I3	20% Increase	25% Reductions starting at ZULU	Inbound: WHISKEY Outbound: X-RAY	70%
35J3	20% Increase	25% Reductions starting at ZULU	Inbound: X-RAY Outbound: X-RAY	70%
35K3	20% Increase	25% Reductions starting at ZULU	Inbound: YANKEE Outbound: X-RAY	70%
35L3	20% Increase	25% Reductions starting at ZULU	Inbound: ZULU Outbound: X-RAY	70%
35M3	20% Increase	25% Reductions starting at ZULU	Inbound: WHISKEY Outbound: WHISKEY	70%
35N3	20% Increase	25% Reductions starting at ZULU	Inbound: X-RAY Outbound: WHISKEY	70%
35O3	20% Increase	25% Reductions starting at ZULU	Inbound: YANKEE Outbound: WHISKEY	70%
35P3	20% Increase	25% Reductions starting at ZULU	Inbound: ZULU Outbound: WHISKEY	70%

APPENDIX C

Experimental Results

Table C.1. Experimental performance results

	Overall				Evacuation			Post-Evacuation				
Exp.	Ship Arr.	Ship Dept.	Cont. In	Cont. Out	Ship Arr.	Ship Dept.	Re-Routes	Remain. Vessels	Unsecure Cont.	Secured Cont.	Unsec.W. Cranes	Unsec. Y. Cranes
21A1	21	21	3494	1002	0	6	31	0	0	2492	0	0
21B1	21	21	3494	1002	0	6	31	0	0	2492	0	0
21C1	21	21	3477	1003	0	6	27	0	0	2474	0	0
21D1	21	21	3470	1000	0	6	30	0	0	2470	0	0
21E1	21	21	3487	1005	0	5	29	0	0	2482	0	0
21F1	21	21	3487	1005	0	5	29	0	0	2482	0	0
21G1	21	21	3474	998	0	5	35	0	0	2475	0	0
21H1	21	21	3474	998	0	5	35	0	0	2475	0	0
21I1	21	17	3474	998	0	2	27	4	0	2476	1	0
21J1	21	17	3474	998	0	2	27	4	0	2476	1	0
21K1	21	17	3485	1001	0	2	27	4	0	2484	1	0
21L1	21	17	3481	998	0	2	28	4	0	2483	1	0
21M1	21	15	3498	997	0	0	30	6	0	2501	1	0
21N1	21	15	3498	997	0	0	30	6	0	2501	1	0
21O1	21	15	3486	994	0	0	30	6	0	2492	1	0
21P1	21	15	3479	999	0	0	28	6	0	2480	1	0
21A2	21	19	3477	1000	0	4	31	3	0	2477	1	0
21B2	21	19	3477	1000	0	4	31	3	0	2477	1	0
21C2	22	19	3483	1007	1	5	28	4	0	2476	1	0
21D2	23	19	3492	1007	2	5	27	4	0	2485	1	0
21E2	21	18	3470	1003	0	4	30	3	0	2467	1	0
21F2	21	18	3470	1003	0	4	30	3	0	2467	1	0
21G2	22	18	3490	1007	1	4	29	4	0	2483	1	0
21H2	23	18	3491	1012	2	4	27	4	0	2479	1	0
21I2	21	15	3472	1001	0	1	30	6	0	2472	2	0
21J2	21	15	3472	1001	0	1	30	6	0	2472	2	0
21K2	23	16	3491	1009	2	2	27	7	0	2482	2	0
21L2	23	16	3490	1010	2	2	28	7	0	2479	2	0
21M2	21	14	3498	997	0	0	30	7	0	2501	2	0
21N2	21	14	3498	997	0	0	30	7	0	2501	2	0
21O2	21	14	3486	994	0	0	30	7	0	2492	2	0
21P2	21	14	3489	1001	0	0	30	8	0	2489	2	0

21A3	24	17	3522	1008	3	4	27	7	0	2514	2	0
21B3	24	17	3522	1008	3	4	27	7	0	2514	2	0
21C3	24	16	3523	1006	3	4	26	8	0	2517	2	0
21D3	25	16	3528	1009	4	4	25	9	0	2519	2	0
21E3	24	16	3529	1001	3	4	25	8	0	2528	2	0
21F3	24	16	3529	1001	3	4	25	8	0	2528	2	0
21G3	24	15	3520	1005	3	3	22	9	0	2515	2	0
21H3	25	16	3530	1013	4	4	25	9	0	2517	2	0
21I3	24	15	3518	1004	3	1	25	9	0	2514	2	0
21J3	24	15	3518	1004	3	1	25	9	0	2514	2	0
21K3	24	15	3531	1005	3	2	25	9	0	2527	2	0
21L3	25	16	3538	1010	4	3	22	9	0	2528	2	0
21M3	23	14	3503	999	2	0	27	9	0	2504	2	0
21N3	23	14	3503	999	2	0	27	9	0	2504	2	0
21O3	24	15	3501	1009	3	0	22	9	0	2492	2	0
21P3	24	15	3499	1017	3	0	21	9	0	2482	2	0
22A1	21	21	3488	998	0	6	29	0	5	2485	0	1
22B1	21	21	3488	998	0	6	29	0	5	2485	0	1
22C1	21	21	3471	995	0	6	29	0	5	2471	0	1
22D1	21	21	3484	996	0	6	28	0	5	2483	0	1
22E1	21	21	3481	1001	0	6	28	0	5	2475	0	1
22F1	21	21	3481	1001	0	6	28	0	5	2475	0	1
22G1	21	21	3466	998	0	6	29	0	5	2463	0	1
22H1	21	21	3488	995	0	6	32	0	5	2488	0	1
22I1	21	17	3481	997	0	2	26	4	5	2479	1	1
22J1	21	17	3481	997	0	2	26	4	5	2479	1	1
22K1	21	17	3485	999	0	2	25	4	5	2481	1	1
22L1	21	17	3476	999	0	2	25	4	5	2472	1	1
22M1	21	15	3484	994	0	0	29	6	5	2485	1	1
22N1	21	15	3484	994	0	0	29	6	5	2485	1	1
22O1	21	15	3482	993	0	0	27	6	5	2484	1	1
22P1	21	15	3484	996	0	0	28	6	5	2483	1	1
22A2	21	20	3475	999	0	6	31	1	5	2471	0	1
22B2	21	20	3475	999	0	6	31	1	5	2471	0	1
22C2	22	20	3474	1004	1	6	28	2	5	2464	1	1
22D2	22	20	3499	1006	1	6	28	2	5	2488	1	1
22E2	21	20	3467	1002	0	5	29	2	5	2461	0	1
22F2	21	20	3467	1002	0	5	29	2	5	2461	0	1
22G2	22	20	3481	1004	1	6	28	2	5	2472	1	1
22H2	22	20	3498	1011	1	6	28	2	5	2482	1	1

22I2	21	16	3483	998	0	2	27	5	5	2480	1	1
22J2	21	16	3483	998	0	2	27	5	5	2480	1	1
22K2	23	17	3500	1010	2	3	26	6	5	2486	1	1
22L2	23	17	3492	1010	2	3	25	6	5	2477	1	1
22M2	21	14	3484	994	0	0	29	7	5	2485	2	1
22N2	21	14	3484	994	0	0	29	7	5	2485	2	1
22O2	21	14	3482	993	0	0	27	7	5	2484	2	1
22P2	21	14	3484	996	0	0	28	7	5	2483	2	1
22A3	23	16	3508	1006	2	4	27	7	5	2497	2	1
22B3	23	16	3508	1006	2	4	27	7	5	2497	2	1
22C3	24	17	3512	1007	3	4	26	7	5	2500	2	1
22D3	24	17	3510	1008	3	4	22	7	5	2498	2	1
22E3	23	15	3509	999	2	3	23	8	5	2505	2	1
22F3	23	15	3509	999	2	3	23	8	5	2505	2	1
22G3	24	16	3509	1001	3	3	21	8	5	2502	2	1
22H3	24	16	3511	1006	3	4	21	8	5	2500	2	1
22I3	23	14	3509	999	2	2	23	9	5	2505	2	1
22J3	23	14	3509	999	2	2	23	9	5	2505	2	1
22K3	24	15	3522	1002	3	2	27	9	5	2514	2	1
22L3	24	15	3521	1005	3	3	21	9	5	2512	2	1
22M3	23	14	3500	1001	2	0	29	9	5	2494	2	1
22N3	23	14	3500	1001	2	0	29	9	5	2494	2	1
22O3	24	15	3497	1010	3	0	22	9	5	2482	2	1
22P3	24	15	3507	1002	3	0	22	9	5	2500	2	1
23A1	21	20	3461	990	0	5	25	1	10	2461	0	5
23B1	21	20	3461	990	0	5	25	1	10	2461	0	5
23C1	21	20	3493	996	0	4	27	1	10	2487	1	5
23D1	21	20	3475	994	0	4	30	1	10	2471	1	5
23E1	21	20	3467	993	0	4	25	1	10	2464	1	5
23F1	21	20	3467	993	0	4	25	1	10	2464	1	5
23G1	21	20	3493	996	0	4	27	1	10	2487	1	5
23H1	21	20	3475	994	0	4	30	1	10	2471	1	5
23I1	21	17	3485	990	0	2	29	4	10	2486	2	5
23J1	21	17	3485	990	0	2	29	4	10	2486	2	5
23K1	21	17	3472	992	0	2	25	4	10	2470	2	5
23L1	21	17	3484	991	0	2	28	4	10	2483	2	5
23M1	21	16	3468	993	0	0	27	5	10	2465	3	5
23N1	21	16	3468	993	0	0	27	5	10	2465	3	5
23O1	21	15	3491	995	0	0	33	6	10	2486	3	5
23P1	21	15	3490	997	0	0	29	6	10	2484	3	5

23A2	**21**	**18**	**3483**	**1000**	**0**	**4**	**27**	**3**	**10**	**2473**	**2**	**5**
23B2	**21**	**18**	**3483**	**1000**	**0**	**4**	**27**	**3**	**10**	**2473**	**2**	**5**
23C2	**22**	**19**	**3497**	**999**	**1**	**5**	**31**	**2**	**10**	**2488**	**1**	**5**
23D2	**22**	**18**	**3496**	**998**	**1**	**4**	**32**	**4**	**10**	**2489**	**2**	**5**
23E2	**21**	**18**	**3484**	**1001**	**0**	**4**	**28**	**4**	**10**	**2473**	**2**	**5**
23F2	**21**	**18**	**3484**	**1001**	**0**	**4**	**28**	**4**	**10**	**2473**	**2**	**5**
23G2	**22**	**19**	**3489**	**997**	**1**	**4**	**29**	**3**	**10**	**2481**	**1**	**5**
23H2	**22**	**18**	**3489**	**996**	**1**	**4**	**29**	**4**	**10**	**2483**	**2**	**5**
23I2	**21**	**15**	**3488**	**991**	**0**	**1**	**31**	**6**	**10**	**2488**	**3**	**5**
23J2	**21**	**15**	**3488**	**991**	**0**	**1**	**31**	**6**	**10**	**2488**	**3**	**5**
23K2	**21**	**15**	**3469**	**993**	**0**	**1**	**25**	**6**	**10**	**2466**	**3**	**5**
23L2	**22**	**15**	**3468**	**999**	**1**	**1**	**25**	**6**	**10**	**2459**	**3**	**5**
23M2	**21**	**14**	**3471**	**997**	**0**	**0**	**25**	**7**	**10**	**2465**	**4**	**5**
23N2	**21**	**14**	**3471**	**997**	**0**	**0**	**25**	**7**	**10**	**2465**	**4**	**5**
23O2	**22**	**14**	**3499**	**996**	**2**	**0**	**30**	**9**	**10**	**2493**	**4**	**5**
23P2	**23**	**14**	**3499**	**1005**	**3**	**0**	**26**	**9**	**10**	**2484**	**5**	**5**
23A3	**22**	**15**	**3489**	**1003**	**1**	**3**	**26**	**7**	**10**	**2476**	**3**	**5**
23B3	**22**	**15**	**3489**	**1003**	**1**	**3**	**26**	**7**	**10**	**2476**	**3**	**5**
23C3	**24**	**15**	**3505**	**1002**	**3**	**3**	**28**	**9**	**10**	**2493**	**4**	**5**
23D3	**24**	**15**	**3509**	**1005**	**3**	**3**	**25**	**9**	**10**	**2494**	**5**	**5**
23E3	**22**	**15**	**3496**	**1007**	**1**	**3**	**25**	**7**	**10**	**2479**	**4**	**5**
23F3	**22**	**15**	**3496**	**1007**	**1**	**3**	**25**	**7**	**10**	**2479**	**4**	**5**
23G3	**24**	**15**	**3505**	**1002**	**3**	**2**	**26**	**9**	**10**	**2493**	**5**	**5**
23H3	**24**	**15**	**3509**	**1005**	**3**	**3**	**25**	**9**	**10**	**2494**	**5**	**5**
23I3	**22**	**13**	**3499**	**1005**	**1**	**1**	**33**	**9**	**10**	**2484**	**5**	**5**
23J3	**22**	**13**	**3499**	**1005**	**1**	**1**	**33**	**9**	**10**	**2484**	**5**	**5**
23K3	**23**	**14**	**3510**	**1000**	**2**	**1**	**25**	**9**	**10**	**2499**	**5**	**5**
23L3	**23**	**14**	**3510**	**1002**	**3**	**1**	**23**	**9**	**10**	**2499**	**5**	**5**
23M3	**23**	**14**	**3488**	**1001**	**2**	**0**	**23**	**9**	**10**	**2477**	**5**	**5**
23N3	**23**	**14**	**3488**	**1001**	**2**	**0**	**23**	**9**	**10**	**2477**	**5**	**5**
23O3	**23**	**14**	**3489**	**1006**	**2**	**0**	**25**	**9**	**10**	**2473**	**5**	**5**
23P3	**24**	**15**	**3485**	**1005**	**3**	**0**	**23**	**9**	**10**	**2470**	**5**	**5**
24A1	**21**	**20**	**3478**	**999**	**0**	**5**	**28**	**1**	**15**	**2465**	**1**	**11**
24B1	**21**	**20**	**3478**	**999**	**0**	**5**	**28**	**1**	**15**	**2465**	**1**	**11**
24C1	**21**	**20**	**3466**	**991**	**0**	**4**	**30**	**1**	**15**	**2460**	**1**	**11**
24D1	**21**	**21**	**3459**	**995**	**0**	**5**	**30**	**0**	**15**	**2450**	**0**	**11**
24E1	**21**	**20**	**3478**	**999**	**0**	**5**	**28**	**1**	**15**	**2465**	**1**	**11**
24F1	**21**	**20**	**3478**	**999**	**0**	**5**	**28**	**1**	**15**	**2465**	**1**	**11**
24G1	**21**	**20**	**3466**	**991**	**0**	**4**	**30**	**1**	**15**	**2460**	**1**	**11**
24H1	**21**	**21**	**3462**	**998**	**0**	**4**	**30**	**0**	**15**	**2449**	**0**	**11**

24I1	21	17	3474	992	0	2	32	3	15	2467	3	11
24J1	21	17	3474	992	0	2	32	3	15	2467	3	11
24K1	21	18	3467	989	0	2	28	3	15	2462	2	11
24L1	21	18	3464	995	0	2	29	3	15	2455	2	11
24M1	20	16	3465	995	0	0	29	5	15	2456	4	11
24N1	20	16	3465	995	0	0	29	5	15	2456	4	11
24O1	20	15	3477	994	0	0	26	5	15	2468	4	11
24P1	20	16	3470	991	0	0	25	5	15	2464	4	11
24A2	21	20	3465	994	0	5	29	1	15	2456	1	11
24B2	21	20	3465	994	0	5	29	1	15	2456	1	11
24C2	22	20	3490	999	1	5	26	2	15	2477	1	11
24D2	22	19	3500	998	1	5	25	3	15	2487	2	11
24E2	21	20	3466	998	0	5	28	1	15	2453	1	11
24F2	21	20	3466	998	0	5	28	1	15	2453	1	11
24G2	22	20	3481	996	1	5	25	2	15	2470	2	11
24H2	22	19	3500	998	1	5	25	3	15	2487	2	11
24I2	21	16	3480	991	0	1	33	5	15	2475	4	11
24J2	21	16	3480	991	0	1	33	5	15	2475	4	11
24K2	21	17	3476	996	1	2	30	4	15	2465	3	11
24L2	20	14	3467	996	0	0	27	6	15	2456	5	11
24M2	20	14	3467	996	0	0	27	6	15	2456	5	11
24N2	20	14	3467	996	0	0	27	6	15	2456	5	11
24O2	21	14	3484	999	1	0	28	7	15	2470	5	11
24P2	21	14	3488	987	1	0	27	7	15	2486	5	11
24A3	22	17	3477	991	1	3	23	5	15	2471	4	11
24B3	22	17	3477	991	1	3	23	5	15	2471	4	11
24C3	23	16	3500	1002	3	3	28	7	15	2484	5	11
24D3	23	16	3486	1004	3	3	28	7	15	2466	5	11
24E3	22	16	3480	996	1	3	23	5	15	2470	4	11
24F3	22	16	3480	996	1	3	23	5	15	2470	4	11
24G3	23	15	3486	997	3	3	26	8	15	2474	6	11
24H3	23	16	3486	1004	3	3	28	7	15	2466	5	11
24I3	21	13	3486	991	1	1	25	8	15	2480	6	11
24J3	21	13	3486	991	1	1	25	8	15	2480	6	11
24K3	23	14	3478	1003	4	1	26	9	15	2460	7	11
24L3	24	15	3490	1010	5	2	27	9	15	2466	7	11
24M3	21	12	3486	1004	2	0	24	9	15	2466	7	11
24N3	21	12	3486	1004	2	0	24	9	15	2466	7	11
24O3	22	13	3471	1004	2	0	31	9	15	2452	7	11
24P3	22	13	3489	997	4	0	21	9	15	2477	7	11

25A1	20	20	3470	993	0	5	27	0	20	2457	0	18
25B1	20	20	3470	993	0	5	27	0	20	2457	0	18
25C1	20	20	3447	987	0	4	32	0	20	2441	0	18
25D1	20	20	3452	992	0	4	30	0	20	2441	0	18
25E1	20	20	3470	993	0	5	27	0	20	2457	0	18
25F1	20	20	3470	993	0	5	27	0	20	2457	0	18
25G1	20	20	3447	987	0	4	32	0	20	2441	0	18
25H1	20	20	3452	992	0	4	30	0	20	2441	0	18
25I1	18	17	3452	982	0	2	29	1	20	2450	1	18
25J1	18	17	3452	982	0	2	29	1	20	2450	1	18
25K1	18	17	3443	980	0	2	24	1	20	2444	1	18
25L1	18	17	3443	981	0	2	30	1	20	2443	1	18
25M1	17	15	3415	985	0	0	28	2	19	2410	2	17
25N1	17	15	3415	985	0	0	28	2	19	2410	2	17
25O1	17	15	3424	983	0	0	27	2	20	2422	2	18
25P1	17	15	3421	982	0	0	28	2	20	2420	2	18
25A2	20	20	3462	997	0	5	28	1	20	2446	1	18
25B2	20	20	3462	997	0	5	28	1	20	2446	1	18
25C2	20	19	3468	996	1	5	26	1	20	2453	1	18
25D2	20	19	3469	1001	1	5	26	1	20	2448	1	18
25E2	20	20	3458	997	0	5	26	1	20	2442	1	18
25F2	20	20	3458	997	0	5	26	1	20	2442	1	18
25G2	20	19	3468	996	1	5	26	1	20	2453	1	18
25H2	20	19	3469	1001	1	5	26	1	20	2448	1	18
25I2	18	16	3436	982	0	1	27	2	20	2434	2	18
25J2	18	16	3436	982	0	1	27	2	20	2434	2	18
25K2	19	17	3448	993	1	2	28	2	20	2436	2	18
25L2	19	17	3442	995	1	2	27	2	20	2427	2	18
25M2	17	14	3416	984	0	0	28	3	19	2413	2	18
25N2	17	14	3416	984	0	0	28	3	19	2413	2	18
25O2	17	14	3418	983	1	0	25	3	19	2416	3	18
25P2	17	14	3424	981	1	0	27	3	20	2423	3	18
25A3	20	17	3449	989	1	3	21	3	20	2440	2	18
25B3	20	17	3449	989	1	3	21	3	20	2440	2	18
25C3	20	17	3446	991	3	3	24	4	20	2435	3	18
25D3	20	16	3444	989	3	3	25	4	20	2435	4	18
25E3	20	17	3450	989	1	3	25	3	20	2442	3	18
25F3	20	17	3450	989	1	3	25	3	20	2442	3	18
25G3	20	16	3443	992	3	3	26	4	20	2431	4	18
25H3	20	16	3444	991	3	3	25	4	20	2433	4	18

25I3	18	14	3432	980	1	1	25	4	20	2433	3	18
25J3	18	14	3432	980	1	1	25	4	20	2433	3	18
25K3	19	14	3429	992	4	1	21	5	19	2417	4	18
25L3	19	14	3436	989	4	1	22	5	20	2427	4	18
25M3	17	13	3424	987	2	0	27	4	19	2417	4	18
25N3	17	13	3424	987	2	0	27	4	19	2417	4	18
25O3	17	13	3409	985	2	0	25	4	19	2405	4	17
25P3	17	13	3416	984	3	0	25	4	19	2412	4	18
11A1	17	17	2766	820	0	3	20	0	0	1946	0	0
11B1	17	17	2766	820	0	3	20	0	0	1946	0	0
11C1	17	17	2769	816	0	3	21	0	0	1953	0	0
11D1	17	17	2768	820	0	3	18	0	0	1948	0	0
11E1	17	16	2770	815	0	3	21	1	0	1955	0	0
11F1	17	16	2770	815	0	3	21	1	0	1955	0	0
11G1	17	16	2768	813	0	3	21	1	0	1955	0	0
11H1	17	16	2771	817	0	3	18	1	0	1954	0	0
11I1	17	15	2767	821	0	2	20	2	0	1946	0	0
11J1	17	15	2767	821	0	2	20	2	0	1946	0	0
11K1	17	15	2772	819	0	2	23	2	0	1952	0	0
11L1	17	15	2771	816	0	2	19	2	0	1955	0	0
11M1	17	14	2769	816	0	0	19	3	0	1953	1	0
11N1	17	14	2769	816	0	0	19	3	0	1953	1	0
11O1	17	14	2765	818	0	0	22	3	0	1947	1	0
11P1	17	14	2772	817	0	0	20	3	0	1954	1	0
11A2	17	16	2763	820	0	3	23	1	0	1942	0	0
11B2	17	16	2763	820	0	3	23	1	0	1942	0	0
11C2	18	17	2778	828	1	4	22	1	0	1950	0	0
11D2	18	17	2776	824	1	4	19	1	0	1952	0	0
11E2	17	15	2767	819	0	2	19	2	0	1948	1	0
11F2	17	15	2767	819	0	2	19	2	0	1948	1	0
11G2	18	15	2780	828	1	3	18	3	0	1952	1	0
11H2	18	15	2779	825	1	3	15	3	0	1954	1	0
11I2	17	14	2767	819	0	1	20	3	0	1948	1	0
11J2	17	14	2767	819	0	1	20	3	0	1948	1	0
11K2	18	15	2774	830	1	2	19	3	0	1944	1	0
11L2	18	15	2776	824	1	2	18	3	0	1952	1	0
11M2	17	13	2766	819	0	0	20	5	0	1947	1	0
11N2	17	13	2766	819	0	0	20	5	0	1947	1	0
11O2	18	13	2771	823	1	0	20	5	0	1947	1	0
11P2	18	13	2767	830	1	0	19	6	0	1937	1	0

11A3	19	14	2784	825	2	2	17	5	0	1959	1	0
11B3	19	14	2784	825	2	2	17	5	0	1959	1	0
11C3	20	14	2798	827	3	3	18	6	0	1971	1	0
11D3	21	13	2820	830	4	2	16	7	0	1991	2	0
11E3	19	14	2792	825	2	2	18	5	0	1967	1	0
11F3	19	14	2792	825	2	2	18	5	0	1967	1	0
11G3	20	13	2798	828	3	2	18	6	0	1970	2	0
11H3	21	13	2820	830	4	2	16	7	0	1991	2	0
11I3	19	13	2790	820	2	1	18	6	0	1970	1	0
11J3	19	13	2790	820	2	1	18	6	0	1970	1	0
11K3	20	13	2801	826	3	2	19	7	0	1975	2	0
11L3	21	13	2818	825	4	2	14	8	0	1993	2	0
11M3	18	11	2777	823	1	0	20	7	0	1954	2	0
11N3	18	11	2777	823	1	0	20	7	0	1954	2	0
11O3	19	11	2782	829	2	0	21	8	0	1953	2	0
11P3	20	11	2801	836	3	0	20	9	0	1965	2	0
12A1	17	17	2766	820	0	3	20	0	4	1942	0	1
12B1	17	17	2766	820	0	3	20	0	4	1942	0	1
12C1	17	17	2769	816	0	3	21	0	4	1949	0	1
12D1	17	17	2768	820	0	3	18	0	4	1944	0	1
12E1	17	16	2770	815	0	3	21	1	4	1951	0	1
12F1	17	16	2770	815	0	3	21	1	4	1951	0	1
12G1	17	16	2768	813	0	3	21	1	4	1951	0	1
12H1	17	16	2771	817	0	3	18	1	4	1950	0	1
12I1	17	15	2767	821	0	2	20	2	4	1942	0	1
12J1	17	15	2767	821	0	2	20	2	4	1942	0	1
12K1	17	15	2772	819	0	2	23	2	4	1948	0	1
12L1	17	15	2771	816	0	2	19	2	4	1951	0	1
12M1	17	14	2769	816	0	0	19	3	4	1949	1	1
12N1	17	14	2769	816	0	0	19	3	4	1949	1	1
12O1	17	14	2765	818	0	0	22	3	4	1943	1	1
12P1	17	14	2772	817	0	0	20	3	4	1950	1	1
12A2	17	16	2763	820	0	3	23	1	4	1938	0	1
12B2	17	16	2763	820	0	3	23	1	4	1938	0	1
12C2	18	17	2778	828	1	4	22	1	4	1946	0	1
12D2	18	17	2776	824	1	4	19	1	4	1948	0	1
12E2	17	15	2767	819	0	2	19	2	4	1944	1	1
12F2	17	15	2767	819	0	2	19	2	4	1944	1	1
12G2	18	15	2780	828	1	3	18	3	4	1948	1	1
12H2	18	15	2779	825	1	3	15	3	4	1950	1	1

12I2	17	14	2767	819	0	1	20	3	4	1944	1	1
12J2	17	14	2767	819	0	1	20	3	4	1944	1	1
12K2	18	15	2774	830	1	2	19	3	4	1940	1	1
12L2	18	15	2776	824	1	2	18	3	4	1948	1	1
12M2	17	13	2766	819	0	0	20	5	4	1943	1	1
12N2	17	13	2766	819	0	0	20	5	4	1943	1	1
12O2	18	13	2771	823	1	0	20	5	4	1943	1	1
12P2	18	13	2767	830	1	0	19	6	4	1933	1	1
12A3	19	14	2784	825	2	2	17	5	4	1955	1	1
12B3	19	14	2784	825	2	2	17	5	4	1955	1	1
12C3	20	14	2798	827	3	3	18	6	4	1967	1	1
12D3	21	13	2820	830	4	2	16	7	4	1987	2	1
12E3	19	14	2792	825	2	2	18	5	4	1963	1	1
12F3	19	14	2792	825	2	2	18	5	4	1963	1	1
12G3	20	13	2798	828	3	2	18	6	4	1966	2	1
12H3	21	13	2820	830	4	2	16	7	4	1987	2	1
12I3	19	13	2790	820	2	1	18	6	4	1966	1	1
12J3	19	13	2790	820	2	1	18	6	4	1966	1	1
12K3	20	13	2801	826	3	2	19	7	4	1971	2	1
12L3	21	13	2818	825	4	2	14	8	4	1989	2	1
12M3	18	11	2777	823	1	0	20	7	4	1950	2	1
12N3	18	11	2777	823	1	0	20	7	4	1950	2	1
12O3	19	11	2782	829	2	0	21	8	4	1949	2	1
12P3	20	11	2801	836	3	0	20	9	4	1961	2	1
13A1	17	17	2762	815	0	3	20	0	8	1940	0	4
13B1	17	17	2762	815	0	3	20	0	8	1940	0	4
13C1	17	17	2759	816	0	3	22	0	8	1936	0	4
13D1	17	17	2762	815	0	3	22	0	8	1940	0	4
13E1	17	16	2766	810	0	3	21	1	8	1949	0	4
13F1	17	16	2766	810	0	3	21	1	8	1949	0	4
13G1	17	17	2758	813	0	3	22	0	8	1938	0	4
13H1	17	17	2765	812	0	3	22	0	8	1945	0	4
13I1	17	15	2764	814	0	2	20	2	8	1943	1	4
13J1	17	15	2764	814	0	2	20	2	8	1943	1	4
13K1	17	16	2763	816	0	2	24	1	8	1939	1	4
13L1	17	16	2765	812	0	2	21	1	8	1945	1	4
13M1	17	14	2764	812	0	0	22	3	8	1944	2	4
13N1	17	14	2764	812	0	0	22	3	8	1944	2	4
13O1	17	14	2765	812	0	0	25	3	8	1945	2	4
13P1	17	14	2769	818	0	0	16	3	8	1943	2	4

13A2	18	17	2770	823	1	4	24	1	8	1939	0	4
13B2	18	17	2770	823	1	4	24	1	8	1939	0	4
13C2	18	17	2775	820	1	4	22	1	8	1947	1	4
13D2	18	17	2771	822	1	4	19	1	8	1942	1	4
13E2	18	16	2772	820	1	3	18	2	8	1945	1	4
13F2	18	16	2772	820	1	3	18	2	8	1945	1	4
13G2	18	16	2777	821	1	3	18	3	8	1949	1	4
13H2	18	16	2774	822	1	3	15	3	8	1944	1	4
13I2	18	14	2773	819	1	2	20	4	8	1946	2	4
13J2	18	14	2773	819	1	2	20	4	8	1946	2	4
13K2	18	15	2773	824	1	2	17	3	8	1941	2	4
13L2	18	15	2776	820	1	2	18	3	8	1948	2	4
13M2	18	12	2765	825	1	0	21	5	8	1932	3	4
13N2	18	12	2765	825	1	0	21	5	8	1932	3	4
13O2	18	12	2767	820	1	0	20	5	8	1940	3	4
13P2	18	12	2771	819	1	0	17	5	8	1944	3	4
13A3	19	15	2792	828	2	3	18	4	8	1956	2	4
13B3	19	15	2792	828	2	3	18	4	8	1956	2	4
13C3	19	16	2781	825	2	3	22	3	8	1948	2	4
13D3	19	16	2776	826	2	3	17	3	8	1943	2	4
13E3	19	14	2789	827	2	3	16	4	8	1954	2	4
13F3	19	14	2789	827	2	3	16	4	8	1954	2	4
13G3	19	15	2778	825	2	3	19	4	8	1946	2	4
13H3	19	15	2773	825	2	3	14	4	8	1941	2	4
13I3	19	12	2787	824	2	1	20	6	8	1955	3	4
13J3	19	12	2787	824	2	1	20	6	8	1955	3	4
13K3	19	13	2777	826	2	1	19	6	8	1944	3	4
13L3	19	13	2777	828	2	1	18	6	8	1941	3	4
13M3	18	11	2769	836	1	0	16	7	8	1925	4	4
13N3	18	11	2769	836	1	0	16	7	8	1925	4	4
13O3	19	11	2785	828	2	0	18	9	8	1949	4	4
13P3	19	11	2785	828	2	0	18	9	8	1949	4	4
14A1	17	17	2762	815	0	3	20	0	12	1936	0	9
14B1	17	17	2762	815	0	3	20	0	12	1936	0	9
14C1	17	17	2761	814	0	3	23	0	12	1935	0	9
14D1	17	17	2769	818	0	3	23	0	12	1940	0	9
14E1	17	16	2766	810	0	3	21	1	12	1945	1	9
14F1	17	16	2766	810	0	3	21	1	12	1945	1	9
14G1	17	17	2760	811	0	3	23	0	12	1937	0	9
14H1	17	16	2773	816	0	3	23	1	12	1945	1	9

14I1	17	15	2764	814	0	2	20	2	12	1939	1	9
14J1	17	15	2764	814	0	2	20	2	12	1939	1	9
14K1	17	16	2764	815	0	2	25	1	12	1938	1	9
14L1	17	15	2773	816	0	2	22	2	12	1945	1	9
14M1	17	14	2763	814	0	0	21	3	12	1938	3	9
14N1	17	14	2763	814	0	0	21	3	12	1938	3	9
14O1	17	14	2765	822	0	0	19	3	12	1931	3	9
14P1	17	14	2767	816	0	0	21	3	12	1940	3	9
14A2	18	17	2762	827	1	4	22	1	12	1924	1	9
14B2	18	17	2762	827	1	4	22	1	12	1924	1	9
14C2	18	16	2770	826	1	3	21	2	12	1932	1	9
14D2	19	16	2783	825	2	3	22	3	12	1947	2	9
14E2	18	16	2766	825	1	3	17	2	12	1929	2	9
14F2	18	16	2766	825	1	3	17	2	12	1929	2	9
14G2	18	15	2772	826	1	2	18	3	12	1934	2	9
14H2	19	15	2786	825	2	2	18	4	12	1949	3	9
14I2	18	14	2773	823	1	2	19	4	12	1939	3	9
14J2	18	14	2773	823	1	2	19	4	12	1939	3	9
14K2	18	14	2766	823	1	2	17	4	12	1931	3	9
14L2	18	12	2758	822	1	0	21	5	12	1924	4	9
14M2	18	12	2758	822	1	0	21	5	12	1924	4	9
14N2	18	12	2758	822	1	0	21	5	12	1924	4	9
14O2	18	12	2760	827	1	0	18	6	12	1921	4	9
14P2	18	12	2766	824	1	0	20	6	12	1930	4	9
14A3	19	14	2783	830	2	3	19	4	12	1941	3	9
14B3	19	14	2783	830	2	3	19	4	12	1941	3	9
14C3	19	15	2781	828	2	3	20	4	12	1941	3	9
14D3	19	15	2781	831	2	3	20	4	12	1938	3	9
14E3	19	14	2782	832	2	2	19	5	12	1938	4	9
14F3	19	14	2782	832	2	2	19	5	12	1938	4	9
14G3	19	14	2778	828	2	2	17	5	12	1939	4	9
14H3	19	14	2778	830	2	2	17	5	12	1936	4	9
14I3	19	12	2790	826	2	1	18	6	12	1952	5	9
14J3	19	12	2790	826	2	1	18	6	12	1952	5	9
14K3	19	12	2792	826	2	1	17	7	12	1955	5	9
14L3	19	12	2787	825	2	1	17	7	12	1950	5	9
14M3	18	11	2760	831	1	0	19	7	12	1918	5	9
14N3	18	11	2760	831	1	0	19	7	12	1918	5	9
14O3	20	11	2795	836	3	0	16	9	12	1947	7	9
14P3	20	11	2792	842	3	0	19	9	12	1938	7	9

15A1	17	17	2757	810	0	3	19	0	16	1931	0	14
15B1	17	17	2757	810	0	3	19	0	16	1931	0	14
15C1	17	17	2766	813	0	3	22	0	16	1938	0	14
15D1	17	17	2765	813	0	3	20	0	16	1936	0	14
15E1	17	16	2761	805	0	3	20	0	16	1940	0	14
15F1	17	16	2761	805	0	3	20	0	16	1940	0	14
15G1	17	16	2765	810	0	3	22	0	16	1940	0	14
15H1	17	16	2768	811	0	3	20	0	16	1942	0	14
15I1	17	15	2759	809	0	2	19	1	16	1934	1	14
15J1	17	15	2759	809	0	2	19	1	16	1934	1	14
15K1	17	15	2769	813	0	2	23	1	16	1941	1	14
15L1	17	15	2768	811	0	2	19	1	16	1942	1	14
15M1	16	14	2748	815	0	0	22	3	15	1918	2	14
15N1	16	14	2748	815	0	0	22	3	15	1918	2	14
15O1	16	14	2755	814	0	0	21	3	16	1926	2	14
15P1	16	14	2764	813	0	0	19	3	16	1935	2	14
15A2	18	17	2757	821	1	4	19	1	15	1921	1	14
15B2	18	17	2757	821	1	4	19	1	15	1921	1	14
15C2	18	16	2767	825	1	3	21	1	16	1926	1	14
15D2	19	16	2776	826	2	3	19	3	16	1934	2	14
15E2	18	16	2761	819	1	3	14	2	16	1926	2	14
15F2	18	16	2761	819	1	3	14	2	16	1926	2	14
15G2	18	15	2769	825	1	2	18	3	16	1928	2	14
15H2	19	15	2778	826	2	2	16	4	16	1936	3	14
15I2	18	14	2772	821	1	2	19	3	16	1936	3	14
15J2	18	14	2772	821	1	2	19	3	16	1936	3	14
15K2	18	14	2757	822	1	2	16	3	15	1919	3	14
15L2	18	15	2772	818	1	2	20	3	16	1938	3	14
15M2	17	13	2748	822	1	0	21	4	15	1910	4	14
15N2	17	13	2748	822	1	0	21	4	15	1910	4	14
15O2	17	13	2750	820	1	0	18	4	15	1914	4	14
15P2	17	13	2756	818	1	0	19	4	16	1923	4	14
15A3	18	15	2773	827	2	3	18	4	16	1930	3	14
15B3	18	15	2773	827	2	3	18	4	16	1930	3	14
15C3	18	15	2787	826	2	3	20	3	16	1945	3	14
15D3	19	15	2782	832	2	3	21	4	16	1934	3	14
15E3	18	14	2772	829	2	2	18	4	16	1927	4	14
15F3	18	14	2772	829	2	2	18	4	16	1927	4	14
15G3	18	14	2784	826	2	2	18	4	16	1943	4	14
15H3	19	14	2779	832	2	2	18	5	16	1931	4	14

15I3	18	12	2788	825	2	1	21	6	16	1947	5	14
15J3	18	12	2788	825	2	1	21	6	16	1947	5	14
15K3	18	12	2780	821	2	1	13	6	16	1943	5	14
15L3	18	12	2787	822	2	1	17	6	16	1950	5	14
15M3	18	11	2755	823	1	0	20	6	15	1917	6	14
15N3	18	11	2755	823	1	0	20	6	15	1917	6	14
15O3	18	11	2752	831	3	0	16	7	15	1906	6	14
15P3	18	11	2770	820	4	0	19	7	16	1935	6	14
31A1	28	28	4233	1184	0	7	34	0	0	3049	0	0
31B1	28	28	4233	1184	0	7	34	0	0	3049	0	0
31C1	28	28	4225	1186	0	7	37	0	0	3039	0	0
31D1	28	28	4224	1187	0	7	34	0	0	3036	0	0
31E1	28	27	4236	1186	0	6	33	1	0	3050	0	0
31F1	28	27	4236	1186	0	6	33	1	0	3050	0	0
31G1	28	27	4224	1186	0	6	36	1	0	3038	0	0
31H1	28	27	4221	1185	0	6	38	1	0	3036	0	0
31I1	28	24	4229	1186	0	3	28	4	0	3043	1	0
31J1	28	24	4229	1186	0	3	28	4	0	3043	1	0
31K1	28	24	4215	1186	0	3	30	4	0	3029	1	0
31L1	28	24	4218	1182	0	3	34	4	0	3036	1	0
31M1	28	21	4230	1178	0	0	37	7	0	3051	2	0
31N1	28	21	4230	1178	0	0	37	7	0	3051	2	0
31O1	28	21	4215	1176	0	0	33	7	0	3039	2	0
31P1	28	21	4220	1181	0	0	33	7	0	3039	2	0
31A2	28	26	4222	1177	0	7	32	2	0	3045	0	0
31B2	28	26	4222	1177	0	7	32	2	0	3045	0	0
31C2	29	26	4242	1193	1	7	34	3	0	3049	1	0
31D2	29	26	4245	1193	1	7	31	3	0	3052	1	0
31E2	28	25	4226	1178	0	6	31	3	0	3048	1	0
31F2	28	25	4226	1178	0	6	31	3	0	3048	1	0
31G2	29	25	4239	1193	1	6	37	4	0	3046	1	0
31H2	29	25	4249	1194	1	6	31	4	0	3055	1	0
31I2	28	22	4240	1185	0	3	26	7	0	3056	2	0
31J2	28	22	4240	1185	0	3	26	7	0	3056	2	0
31K2	30	24	4236	1199	2	5	33	6	0	3037	1	0
31L2	30	24	4247	1198	2	5	30	6	0	3049	1	0
31M2	29	20	4235	1186	1	0	35	9	0	3049	2	0
31N2	29	20	4235	1186	1	0	35	9	0	3049	2	0
31O2	29	20	4225	1185	2	0	34	9	0	3040	2	0
31P2	30	21	4239	1190	2	0	39	9	0	3049	2	0

31A3	29	23	4223	1184	1	6	29	6	0	3039	1	0
31B3	29	23	4223	1184	1	6	29	6	0	3039	1	0
31C3	30	22	4245	1198	2	5	26	8	0	3047	2	0
31D3	30	22	4257	1197	2	5	30	8	0	3060	2	0
31E3	29	23	4223	1184	1	6	29	6	0	3039	1	0
31F3	29	23	4223	1184	1	6	29	6	0	3039	1	0
31G3	30	21	4243	1198	2	5	27	9	0	3045	2	0
31H3	30	21	4248	1199	2	5	29	9	0	3048	2	0
31I3	29	20	4248	1190	1	2	25	9	0	3059	2	0
31J3	29	20	4248	1190	1	2	25	9	0	3059	2	0
31K3	31	22	4253	1198	3	3	27	9	0	3055	2	0
31L3	31	22	4258	1200	3	3	29	9	0	3059	2	0
31M3	30	21	4252	1194	2	0	30	9	0	3057	2	0
31N3	30	21	4252	1194	2	0	30	9	0	3057	2	0
31O3	30	21	4237	1188	2	0	28	9	0	3049	2	0
31P3	30	21	4260	1190	3	0	36	9	0	3070	2	0
32A1	28	28	4212	1181	0	8	35	0	6	3025	0	2
32B1	28	28	4212	1181	0	8	35	0	6	3025	0	2
32C1	28	28	4211	1181	0	8	30	0	6	3024	0	2
32D1	28	28	4219	1184	0	8	30	0	6	3030	0	2
32E1	28	28	4207	1189	0	7	32	0	6	3012	0	2
32F1	28	28	4207	1189	0	7	32	0	6	3012	0	2
32G1	28	28	4215	1184	0	7	32	0	6	3025	0	2
32H1	28	28	4223	1179	0	7	29	0	6	3038	0	2
32I1	28	24	4202	1181	0	3	34	4	6	3015	1	2
32J1	28	24	4202	1181	0	3	34	4	6	3015	1	2
32K1	28	24	4215	1181	0	3	34	4	6	3028	1	2
32L1	28	24	4209	1183	0	3	34	4	6	3020	1	2
32M1	28	21	4234	1181	0	0	35	7	6	3047	2	2
32N1	28	21	4234	1181	0	0	35	7	6	3047	2	2
32O1	28	21	4231	1186	0	0	37	7	6	3040	2	2
32P1	28	21	4233	1186	0	0	38	7	6	3041	2	2
32A2	28	26	4213	1181	0	7	33	2	6	3026	1	2
32B2	28	26	4213	1181	0	7	33	2	6	3026	1	2
32C2	29	26	4220	1182	1	7	39	3	6	3032	1	2
32D2	30	27	4248	1180	2	7	34	4	6	3062	1	2
32E2	28	25	4211	1184	0	6	32	3	6	3021	1	2
32F2	28	25	4211	1184	0	6	32	3	6	3021	1	2
32G2	29	25	4221	1185	1	6	35	4	6	3030	1	2
32H2	30	26	4243	1181	2	7	33	4	6	3056	1	2

32I2	28	22	4215	1179	0	3	32	7	6	3030	2	2
32J2	28	22	4215	1179	0	3	32	7	6	3030	2	2
32K2	29	25	4221	1185	1	6	35	4	6	3030	1	2
32L2	30	26	4243	1181	2	7	33	4	6	3056	1	2
32M2	28	19	4227	1179	0	0	33	9	6	3042	2	2
32N2	28	19	4227	1179	0	0	33	9	6	3042	2	2
32O2	29	20	4239	1185	1	0	38	9	6	3048	2	2
32P2	29	20	4239	1188	2	0	37	9	6	3045	2	2
32A3	29	23	4229	1174	1	5	35	6	6	3049	2	2
32B3	29	23	4229	1174	1	5	35	6	6	3049	2	2
32C3	30	24	4250	1184	2	6	33	7	6	3060	2	2
32D3	31	23	4258	1194	3	6	33	8	6	3058	2	2
32E3	29	22	4227	1178	1	5	35	7	6	3043	2	2
32F3	29	22	4227	1178	1	5	35	7	6	3043	2	2
32G3	30	23	4252	1185	2	6	33	8	6	3062	2	2
32H3	31	23	4258	1194	3	6	33	8	6	3058	2	2
32I3	29	20	4231	1182	1	3	31	9	6	3043	2	2
32J3	29	20	4231	1182	1	3	31	9	6	3043	2	2
32K3	30	21	4254	1189	2	5	36	9	6	3059	2	2
32L3	31	22	4253	1195	3	5	37	9	6	3052	2	2
32M3	29	20	4226	1183	1	0	30	9	6	3036	2	2
32N3	29	20	4226	1183	1	0	30	9	6	3036	2	2
32O3	30	21	4231	1191	2	0	34	9	6	3034	2	2
32P3	30	21	4251	1193	3	0	38	9	6	3053	2	2
33A1	28	27	4219	1184	0	6	31	1	12	3023	1	6
33B1	28	27	4219	1184	0	6	31	1	12	3023	1	6
33C1	28	27	4225	1176	0	6	36	1	12	3036	1	6
33D1	28	27	4219	1175	0	6	35	1	12	3031	1	6
33E1	28	26	4218	1180	0	5	32	2	12	3025	1	6
33F1	28	26	4218	1180	0	5	32	2	12	3025	1	6
33G1	28	26	4223	1180	0	5	37	2	12	3031	1	6
33H1	28	26	4223	1181	0	5	37	2	12	3030	1	6
33I1	28	24	4211	1180	0	3	38	4	12	3019	2	6
33J1	28	24	4211	1180	0	3	38	4	12	3019	2	6
33K1	28	24	4221	1183	0	3	37	4	12	3027	2	6
33L1	28	24	4217	1184	0	3	36	4	12	3022	2	6
33M1	28	21	4229	1177	0	0	36	7	12	3040	4	6
33N1	28	21	4229	1177	0	0	36	7	12	3040	4	6
33O1	28	21	4236	1178	0	0	34	7	12	3045	4	6
33P1	28	21	4232	1175	0	0	31	7	12	3044	4	6

33A2	29	26	4204	1170	1	6	33	3	12	3022	1	6
33B2	29	26	4204	1170	1	6	33	3	12	3022	1	6
33C2	30	26	4244	1185	2	7	34	4	12	3046	2	6
33D2	30	26	4240	1189	2	7	32	4	12	3039	2	6
33E2	29	26	4210	1172	1	6	34	3	12	3026	1	6
33F2	29	26	4210	1172	1	6	34	3	12	3026	1	6
33G2	30	25	4241	1184	2	6	36	5	12	3044	2	6
33H2	30	26	4243	1187	2	7	35	4	12	3043	2	6
33I2	29	22	4211	1170	1	2	32	7	12	3029	3	6
33J2	29	22	4211	1170	1	2	32	7	12	3029	3	6
33K2	30	25	4241	1184	2	6	36	5	12	3044	2	6
33L2	30	26	4243	1187	2	7	35	4	12	3043	2	6
33M2	29	20	4235	1176	1	0	32	9	12	3047	5	6
33N2	29	20	4235	1176	1	0	32	9	12	3047	5	6
33O2	29	20	4233	1186	2	0	29	9	12	3035	5	6
33P2	30	21	4239	1184	3	0	31	9	12	3043	5	6
33A3	29	20	4235	1176	1	0	32	9	12	3047	5	6
33B3	29	20	4235	1176	1	0	32	9	12	3047	5	6
33C3	29	20	4233	1186	2	0	29	9	12	3035	5	6
33D3	30	21	4239	1184	3	0	31	9	12	3043	5	6
33E3	29	24	4203	1175	1	6	37	5	12	3016	2	6
33F3	29	24	4203	1175	1	6	37	5	12	3016	2	6
33G3	31	23	4263	1190	3	6	31	8	12	3061	4	6
33H3	31	23	4267	1188	3	5	32	8	12	3066	4	6
33I3	29	20	4218	1176	1	2	34	9	12	3030	5	6
33J3	29	20	4218	1176	1	2	34	9	12	3030	5	6
33K3	31	22	4269	1187	3	5	29	9	12	3070	4	6
33L3	31	22	4270	1191	3	5	32	9	12	3066	4	6
33M3	29	20	4235	1176	1	0	32	9	12	3047	5	6
33N3	29	20	4235	1176	1	0	32	9	12	3047	5	6
33O3	30	21	4228	1181	3	0	32	9	12	3035	5	6
33P3	31	22	4234	1184	4	0	32	9	12	3037	5	6
34A1	28	28	4197	1177	0	6	35	0	18	3002	0	14
34B1	28	28	4197	1177	0	6	35	0	18	3002	0	14
34C1	28	28	4196	1179	0	6	36	0	18	2999	0	14
34D1	28	28	4190	1182	0	6	36	0	18	2990	0	14
34E1	28	28	4198	1177	0	5	35	0	18	3003	0	14
34F1	28	28	4198	1177	0	5	35	0	18	3003	0	14
34G1	28	28	4197	1182	0	6	37	0	18	2997	0	14
34H1	28	28	4189	1181	0	6	41	0	18	2990	0	14

34I1	27	24	4198	1179	0	3	30	2	18	3002	2	14
34J1	27	24	4198	1179	0	3	30	2	18	3002	2	14
34K1	27	25	4189	1174	0	3	32	2	18	2996	2	14
34L1	27	25	4201	1172	0	3	39	2	18	3011	2	14
34M1	26	21	4187	1179	0	0	34	5	18	2990	4	14
34N1	26	21	4187	1179	0	0	34	5	18	2990	4	14
34O1	26	22	4178	1175	0	0	36	5	18	2985	4	14
34P1	26	21	4200	1170	0	0	36	5	18	3011	4	14
34A2	28	25	4204	1179	1	5	38	3	18	3007	2	14
34B2	28	25	4204	1179	1	5	38	3	18	3007	2	14
34C2	29	25	4219	1188	2	5	39	4	18	3012	3	14
34D2	29	25	4230	1173	3	5	32	4	18	3039	3	14
34E2	28	25	4208	1179	1	5	38	3	18	3011	2	14
34F2	28	25	4208	1179	1	5	38	3	18	3011	2	14
34G2	29	25	4214	1183	2	5	38	5	18	3013	4	14
34H2	29	25	4230	1173	3	5	32	4	18	3039	3	14
34I2	27	21	4223	1181	1	2	30	6	18	3024	5	14
34J2	27	21	4223	1181	1	2	30	6	18	3024	5	14
34K2	29	23	4218	1179	2	4	37	6	18	3020	4	14
34L2	27	19	4198	1173	1	0	31	8	18	3006	6	14
34M2	27	19	4198	1173	1	0	31	8	18	3006	6	14
34N2	27	19	4198	1173	1	0	31	8	18	3006	6	14
34O2	28	19	4208	1169	2	0	33	9	18	3020	7	14
34P2	28	19	4184	1179	2	0	26	9	18	2986	7	14
34A3	28	24	4187	1167	1	4	39	4	18	3002	3	14
34B3	28	24	4187	1167	1	4	39	4	18	3002	3	14
34C3	30	22	4229	1184	4	5	34	8	18	3027	6	14
34D3	30	23	4226	1191	4	5	34	8	18	3017	6	14
34E3	28	23	4191	1167	1	4	39	5	18	3006	4	14
34F3	28	23	4191	1167	1	4	39	5	18	3006	4	14
34G3	30	22	4221	1183	4	5	35	8	18	3019	6	14
34H3	30	22	4224	1187	4	5	31	8	18	3019	6	14
34I3	27	19	4221	1179	1	2	30	8	18	3024	6	14
34J3	27	19	4221	1179	1	2	30	8	18	3024	6	14
34K3	30	22	4221	1183	4	5	35	8	18	3019	6	14
34L3	30	22	4224	1187	4	5	31	8	18	3019	6	14
34M3	27	18	4198	1173	1	0	31	9	18	3006	7	14
34N3	27	18	4198	1173	1	0	31	9	18	3006	7	14
34O3	28	19	4209	1171	3	0	30	9	18	3020	7	14
34P3	28	19	4183	1180	3	0	29	9	18	2985	7	14

35A1	25	25	4171	1174	0	6	36	0	24	2973	0	22
35B1	25	25	4171	1174	0	6	36	0	24	2973	0	22
35C1	25	25	4180	1176	0	6	39	0	24	2979	0	22
35D1	25	25	4163	1172	0	6	35	0	24	2967	0	22
35E1	25	25	4177	1169	0	5	38	0	24	2984	0	22
35F1	25	25	4177	1169	0	5	38	0	24	2984	0	22
35G1	25	25	4175	1175	0	6	37	0	24	2977	0	22
35H1	25	25	4168	1173	0	6	35	0	24	2971	0	22
35I1	24	24	4144	1166	0	3	33	0	24	2954	0	21
35J1	24	24	4144	1166	0	3	33	0	24	2954	0	21
35K1	24	24	4141	1164	0	3	36	0	24	2953	0	21
35L1	24	24	4142	1161	0	3	34	0	24	2957	0	21
35M1	22	21	4100	1144	0	0	34	1	24	2933	1	21
35N1	22	21	4100	1144	0	0	34	1	24	2933	1	21
35O1	22	21	4097	1142	0	0	38	1	24	2931	1	21
35P1	22	21	4096	1140	0	0	35	1	24	2932	1	21
35A2	25	25	4165	1167	1	5	35	0	24	2975	0	22
35B2	25	25	4165	1167	1	5	35	0	24	2975	0	22
35C2	25	25	4158	1163	2	5	40	0	24	2971	0	22
35D2	26	25	4162	1170	2	5	33	1	24	2968	1	22
35E2	25	24	4154	1164	1	5	34	1	24	2966	1	22
35F2	25	24	4154	1164	1	5	34	1	24	2966	1	22
35G2	25	25	4150	1158	2	5	38	0	24	2968	0	22
35H2	25	25	4151	1172	2	5	32	1	24	2955	1	21
35I2	24	22	4134	1158	1	2	31	2	24	2952	2	21
35J2	24	22	4134	1158	1	2	31	2	24	2952	2	21
35K2	25	23	4145	1158	2	4	38	1	24	2963	1	22
35L2	25	23	4145	1172	2	4	35	1	24	2949	1	21
35M2	22	19	4082	1139	1	0	33	2	24	2919	2	21
35N2	22	19	4082	1139	1	0	33	2	24	2919	2	21
35O2	22	19	4085	1136	2	0	36	2	24	2926	2	21
35P2	22	19	4085	1140	2	0	36	2	24	2921	2	21
35A3	25	23	4159	1163	1	4	33	2	24	2972	2	22
35B3	25	23	4159	1163	1	4	33	2	24	2972	2	22
35C3	26	23	4135	1155	4	5	34	4	24	2955	3	21
35D3	27	23	4139	1164	5	5	35	4	24	2952	3	21
35E3	25	23	4148	1160	1	4	32	3	24	2963	2	22
35F3	25	23	4148	1160	1	4	32	3	24	2963	2	22
35G3	26	23	4153	1157	4	5	35	4	24	2972	3	22
35H3	27	23	4139	1164	5	5	35	4	24	2952	3	21

35I3	24	20	4117	1154	1	2	29	4	24	2939	3	21
35J3	24	20	4117	1154	1	2	29	4	24	2939	3	21
35K3	26	23	4153	1157	4	5	35	4	24	2972	3	22
35L3	27	23	4139	1164	5	5	35	4	24	2952	3	21
35M3	22	18	4082	1139	1	0	33	4	24	2919	3	21
35N3	22	18	4082	1139	1	0	33	4	24	2919	3	21
35O3	22	18	4089	1136	3	0	37	4	24	2929	3	21
35P3	22	18	4093	1138	3	0	33	4	24	2932	3	21

Table C.2. Experimental final port state percentage results

	Final Port Condition Percentages by Initial Port Conditions & Hurricane Category											
	Excellent (100%)				Fair (75%)				Poor (50%)			
Experiment	1	2	3	4 & 5	1	2	3	4 & 5	1	2	3	4 & 5
21A1	98.00%	89.00%	34.25%	8.50%	90.83%	79.58%	6.42%	0.00%	76.50%	60.75%	0.00%	0.00%
21B1	98.00%	89.00%	34.25%	8.50%	90.83%	79.58%	6.42%	0.00%	76.50%	60.75%	0.00%	0.00%
21C1	98.00%	89.00%	34.25%	8.50%	90.83%	79.58%	6.42%	0.00%	76.50%	60.75%	0.00%	0.00%
21D1	98.00%	89.00%	34.25%	8.50%	90.83%	79.58%	6.42%	0.00%	76.50%	60.75%	0.00%	0.00%
21E1	97.90%	88.90%	34.24%	8.49%	90.70%	79.45%	6.40%	0.00%	76.29%	60.54%	0.00%	0.00%
21F1	97.90%	88.90%	34.24%	8.49%	90.70%	79.45%	6.40%	0.00%	76.29%	60.54%	0.00%	0.00%
21G1	97.90%	88.90%	34.24%	8.49%	90.70%	79.45%	6.40%	0.00%	76.29%	60.54%	0.00%	0.00%
21H1	97.90%	88.90%	34.24%	8.49%	90.70%	79.45%	6.40%	0.00%	76.29%	60.54%	0.00%	0.00%
21I1	96.77%	87.77%	34.14%	8.39%	89.19%	77.94%	6.26%	0.00%	74.04%	58.29%	0.00%	0.00%
21J1	96.77%	87.77%	34.14%	8.39%	89.19%	77.94%	6.26%	0.00%	74.04%	58.29%	0.00%	0.00%
21K1	96.77%	87.77%	34.14%	8.39%	89.19%	77.94%	6.26%	0.00%	74.04%	58.29%	0.00%	0.00%
21L1	96.77%	87.77%	34.14%	8.39%	89.19%	77.94%	6.26%	0.00%	74.04%	58.29%	0.00%	0.00%
21M1	96.26%	87.26%	34.09%	8.34%	88.51%	77.26%	6.19%	0.00%	73.01%	57.26%	0.00%	0.00%
21N1	96.26%	87.26%	34.09%	8.34%	88.51%	77.26%	6.19%	0.00%	73.01%	57.26%	0.00%	0.00%
21O1	96.26%	87.26%	34.09%	8.34%	88.51%	77.26%	6.19%	0.00%	73.01%	57.26%	0.00%	0.00%
21P1	96.26%	87.26%	34.09%	8.34%	88.51%	77.26%	6.19%	0.00%	73.01%	57.26%	0.00%	0.00%
21A2	97.15%	88.15%	34.17%	8.42%	89.70%	78.45%	6.31%	0.00%	74.80%	59.05%	0.00%	0.00%
21B2	97.15%	88.15%	34.17%	8.42%	89.70%	78.45%	6.31%	0.00%	74.80%	59.05%	0.00%	0.00%
21C2	96.92%	87.92%	34.15%	8.40%	89.38%	78.13%	6.28%	0.00%	74.33%	58.58%	0.00%	0.00%
21D2	96.80%	87.80%	34.14%	8.39%	89.23%	77.98%	6.26%	0.00%	74.09%	58.34%	0.00%	0.00%
21E2	97.04%	88.04%	34.16%	8.41%	89.54%	78.29%	6.29%	0.00%	74.56%	58.81%	0.00%	0.00%
21F2	97.04%	88.04%	34.16%	8.41%	89.54%	78.29%	6.29%	0.00%	74.56%	58.81%	0.00%	0.00%
21G2	96.80%	87.80%	34.14%	8.39%	89.23%	77.98%	6.26%	0.00%	74.09%	58.34%	0.00%	0.00%
21H2	96.68%	87.68%	34.13%	8.38%	89.07%	77.82%	6.25%	0.00%	73.85%	58.10%	0.00%	0.00%
21I2	96.10%	87.10%	34.07%	8.32%	88.28%	77.03%	6.17%	0.00%	72.68%	56.93%	0.00%	0.00%
21J2	96.10%	87.10%	34.07%	8.32%	88.28%	77.03%	6.17%	0.00%	72.68%	56.93%	0.00%	0.00%

21K2	95.98%	86.98%	34.06%	8.31%	88.13%	76.88%	6.15%	0.00%	72.44%	56.69%	0.00%	0.00%
21L2	95.98%	86.98%	34.06%	8.31%	88.13%	76.88%	6.15%	0.00%	72.44%	56.69%	0.00%	0.00%
21M2	95.74%	86.74%	34.04%	8.29%	87.81%	76.56%	6.12%	0.00%	71.97%	56.22%	0.00%	0.00%
21N2	95.74%	86.74%	34.04%	8.29%	87.81%	76.56%	6.12%	0.00%	71.97%	56.22%	0.00%	0.00%
21O2	95.74%	86.74%	34.04%	8.29%	87.81%	76.56%	6.12%	0.00%	71.97%	56.22%	0.00%	0.00%
21P2	95.63%	86.63%	34.03%	8.28%	87.66%	76.41%	6.11%	0.00%	71.73%	55.98%	0.00%	0.00%
21A3	95.89%	86.89%	34.05%	8.30%	88.00%	76.75%	6.14%	0.00%	72.26%	56.51%	0.00%	0.00%
21B3	95.89%	86.89%	34.05%	8.30%	88.00%	76.75%	6.14%	0.00%	72.26%	56.51%	0.00%	0.00%
21C3	95.49%	86.49%	34.02%	8.27%	87.47%	76.22%	6.09%	0.00%	71.46%	55.71%	0.00%	0.00%
21D3	95.36%	86.36%	34.00%	8.25%	87.29%	76.04%	6.07%	0.00%	71.19%	55.44%	0.00%	0.00%
21E3	95.62%	86.62%	34.03%	8.28%	87.65%	76.40%	6.11%	0.00%	71.72%	55.97%	0.00%	0.00%
21F3	95.62%	86.62%	34.03%	8.28%	87.65%	76.40%	6.11%	0.00%	71.72%	55.97%	0.00%	0.00%
21G3	95.24%	86.24%	33.99%	8.24%	87.14%	75.89%	6.06%	0.00%	70.96%	55.21%	0.00%	0.00%
21H3	95.24%	86.24%	33.99%	8.24%	87.14%	75.89%	6.06%	0.00%	70.96%	55.21%	0.00%	0.00%
21I3	95.24%	86.24%	33.99%	8.24%	87.14%	75.89%	6.06%	0.00%	70.96%	55.21%	0.00%	0.00%
21J3	95.24%	86.24%	33.99%	8.24%	87.14%	75.89%	6.06%	0.00%	70.96%	55.21%	0.00%	0.00%
21K3	95.24%	86.24%	33.99%	8.24%	87.14%	75.89%	6.06%	0.00%	70.96%	55.21%	0.00%	0.00%
21L3	95.24%	86.24%	33.99%	8.24%	87.14%	75.89%	6.06%	0.00%	70.96%	55.21%	0.00%	0.00%
21M3	95.24%	86.24%	33.99%	8.24%	87.14%	75.89%	6.06%	0.00%	70.96%	55.21%	0.00%	0.00%
21N3	95.24%	86.24%	33.99%	8.24%	87.14%	75.89%	6.06%	0.00%	70.96%	55.21%	0.00%	0.00%
21O3	95.24%	86.24%	33.99%	8.24%	87.14%	75.89%	6.06%	0.00%	70.96%	55.21%	0.00%	0.00%
21P3	95.24%	86.24%	33.99%	8.24%	87.14%	75.89%	6.06%	0.00%	70.96%	55.21%	0.00%	0.00%
22A1	97.95%	88.95%	34.20%	8.45%	90.76%	79.51%	6.35%	0.00%	76.39%	60.64%	0.00%	0.00%
22B1	97.95%	88.95%	34.20%	8.45%	90.76%	79.51%	6.35%	0.00%	76.39%	60.64%	0.00%	0.00%
22C1	97.95%	88.95%	34.20%	8.45%	90.76%	79.51%	6.35%	0.00%	76.39%	60.64%	0.00%	0.00%
22D1	97.95%	88.95%	34.20%	8.45%	90.76%	79.51%	6.35%	0.00%	76.39%	60.64%	0.00%	0.00%
22E1	97.95%	88.95%	34.20%	8.45%	90.76%	79.51%	6.35%	0.00%	76.39%	60.64%	0.00%	0.00%
22F1	97.95%	88.95%	34.20%	8.45%	90.76%	79.51%	6.35%	0.00%	76.39%	60.64%	0.00%	0.00%
22G1	97.95%	88.95%	34.20%	8.45%	90.76%	79.51%	6.35%	0.00%	76.39%	60.64%	0.00%	0.00%
22H1	97.95%	88.95%	34.20%	8.45%	90.76%	79.51%	6.34%	0.00%	76.39%	60.64%	0.00%	0.00%
22I1	96.82%	87.82%	34.09%	8.34%	89.26%	78.01%	6.20%	0.00%	74.14%	58.39%	0.00%	0.00%
22J1	96.82%	87.82%	34.09%	8.34%	89.26%	78.01%	6.20%	0.00%	74.14%	58.39%	0.00%	0.00%
22K1	96.82%	87.82%	34.09%	8.34%	89.26%	78.01%	6.20%	0.00%	74.14%	58.39%	0.00%	0.00%
22L1	96.82%	87.82%	34.09%	8.34%	89.26%	78.01%	6.20%	0.00%	74.14%	58.39%	0.00%	0.00%
22M1	96.21%	87.21%	34.04%	8.29%	88.44%	77.19%	6.12%	0.00%	72.91%	57.16%	0.00%	0.00%
22N1	96.21%	87.21%	34.04%	8.29%	88.44%	77.19%	6.12%	0.00%	72.91%	57.16%	0.00%	0.00%
22O1	96.21%	87.21%	34.04%	8.29%	88.44%	77.19%	6.12%	0.00%	72.91%	57.16%	0.00%	0.00%
22P1	96.21%	87.21%	34.04%	8.29%	88.44%	77.19%	6.12%	0.00%	72.91%	57.16%	0.00%	0.00%
22A2	97.57%	88.57%	34.16%	8.41%	90.26%	79.01%	6.30%	0.00%	75.63%	59.88%	0.00%	0.00%
22B2	97.57%	88.57%	34.16%	8.41%	90.26%	79.01%	6.30%	0.00%	75.63%	59.88%	0.00%	0.00%

22C2	97.33%	88.33%	34.14%	8.39%	89.94%	78.69%	6.27%	0.00%	75.16%	59.41%	0.00%	0.00%
22D2	97.33%	88.33%	34.14%	8.39%	89.94%	78.69%	6.27%	0.00%	75.16%	59.41%	0.00%	0.00%
22E2	97.45%	88.45%	34.15%	8.40%	90.10%	78.85%	6.28%	0.00%	75.40%	59.65%	0.00%	0.00%
22F2	97.45%	88.45%	34.15%	8.40%	90.10%	78.85%	6.28%	0.00%	75.40%	59.65%	0.00%	0.00%
22G2	97.22%	88.22%	34.13%	8.38%	89.78%	78.53%	6.25%	0.00%	74.93%	59.18%	0.00%	0.00%
22H2	97.22%	88.22%	34.13%	8.38%	89.78%	78.53%	6.25%	0.00%	74.93%	59.18%	0.00%	0.00%
22I2	96.28%	87.28%	34.04%	8.29%	88.53%	77.28%	6.13%	0.00%	73.04%	57.29%	0.00%	0.00%
22J2	96.28%	87.28%	34.04%	8.29%	88.53%	77.28%	6.13%	0.00%	73.04%	57.29%	0.00%	0.00%
22K2	96.16%	87.16%	34.03%	8.28%	88.37%	77.12%	6.11%	0.00%	72.80%	57.05%	0.00%	0.00%
22L2	96.16%	87.16%	34.03%	8.28%	88.37%	77.12%	6.11%	0.00%	72.80%	57.05%	0.00%	0.00%
22M2	95.69%	86.69%	33.99%	8.24%	87.74%	76.49%	6.05%	0.00%	71.86%	56.11%	0.00%	0.00%
22N2	95.69%	86.69%	33.99%	8.24%	87.74%	76.49%	6.05%	0.00%	71.86%	56.11%	0.00%	0.00%
22O2	95.69%	86.69%	33.99%	8.24%	87.74%	76.49%	6.05%	0.00%	71.86%	56.11%	0.00%	0.00%
22P2	95.69%	86.69%	33.99%	8.24%	87.74%	76.49%	6.05%	0.00%	71.86%	56.11%	0.00%	0.00%
22A3	95.80%	86.80%	34.00%	8.25%	87.89%	76.64%	6.07%	0.00%	72.09%	56.34%	0.00%	0.00%
22B3	95.80%	86.80%	34.00%	8.25%	87.89%	76.64%	6.07%	0.00%	72.09%	56.34%	0.00%	0.00%
22C3	95.77%	86.77%	33.99%	8.24%	87.85%	76.60%	6.06%	0.00%	72.02%	56.27%	0.00%	0.00%
22D3	95.77%	86.77%	33.99%	8.24%	87.85%	76.60%	6.06%	0.00%	72.02%	56.27%	0.00%	0.00%
22E3	95.54%	86.54%	33.97%	8.22%	87.53%	76.28%	6.03%	0.00%	71.55%	55.80%	0.00%	0.00%
22F3	95.54%	86.54%	33.97%	8.22%	87.53%	76.28%	6.03%	0.00%	71.55%	55.80%	0.00%	0.00%
22G3	95.51%	86.51%	33.97%	8.22%	87.49%	76.24%	6.03%	0.00%	71.49%	55.74%	0.00%	0.00%
22H3	95.64%	86.64%	33.98%	8.23%	87.67%	76.42%	6.05%	0.00%	71.76%	56.01%	0.00%	0.00%
22I3	95.19%	86.19%	33.94%	8.19%	87.07%	75.82%	5.99%	0.00%	70.86%	55.11%	0.00%	0.00%
22J3	95.19%	86.19%	33.94%	8.19%	87.07%	75.82%	5.99%	0.00%	70.86%	55.11%	0.00%	0.00%
22K3	95.19%	86.19%	33.94%	8.19%	87.07%	75.82%	5.99%	0.00%	70.85%	55.10%	0.00%	0.00%
22L3	95.27%	86.27%	33.95%	8.20%	87.18%	75.93%	6.00%	0.00%	71.02%	55.27%	0.00%	0.00%
22M3	95.19%	86.19%	33.94%	8.19%	87.07%	75.82%	5.99%	0.00%	70.86%	55.11%	0.00%	0.00%
22N3	95.19%	86.19%	33.94%	8.19%	87.07%	75.82%	5.99%	0.00%	70.86%	55.11%	0.00%	0.00%
22O3	95.19%	86.19%	33.94%	8.19%	87.07%	75.82%	5.99%	0.00%	70.86%	55.11%	0.00%	0.00%
22P3	95.19%	86.19%	33.94%	8.19%	87.07%	75.82%	5.99%	0.00%	70.86%	55.11%	0.00%	0.00%
23A1	97.56%	88.56%	34.00%	8.25%	90.25%	79.00%	6.08%	0.00%	75.62%	59.87%	0.00%	0.00%
23B1	97.56%	88.56%	34.00%	8.25%	90.25%	79.00%	6.08%	0.00%	75.62%	59.87%	0.00%	0.00%
23C1	97.34%	88.34%	33.96%	8.21%	89.95%	78.70%	6.02%	0.00%	75.17%	59.42%	0.00%	0.00%
23D1	97.34%	88.34%	33.96%	8.21%	89.95%	78.70%	6.03%	0.00%	75.17%	59.42%	0.00%	0.00%
23E1	97.45%	88.45%	33.98%	8.23%	90.10%	78.85%	6.05%	0.00%	75.40%	59.65%	0.00%	0.00%
23F1	97.45%	88.45%	33.98%	8.23%	90.10%	78.85%	6.05%	0.00%	75.40%	59.65%	0.00%	0.00%
23G1	97.34%	88.34%	33.96%	8.21%	89.95%	78.70%	6.02%	0.00%	75.17%	59.42%	0.00%	0.00%
23H1	97.34%	88.34%	33.96%	8.21%	89.95%	78.70%	6.03%	0.00%	75.17%	59.42%	0.00%	0.00%
23I1	96.56%	87.56%	33.83%	8.08%	88.90%	77.65%	5.84%	0.00%	73.59%	57.84%	0.00%	0.00%
23J1	96.56%	87.56%	33.83%	8.08%	88.90%	77.65%	5.84%	0.00%	73.59%	57.84%	0.00%	0.00%

23K1	96.45%	87.45%	33.81%	8.06%	88.75%	77.50%	5.81%	0.00%	73.37%	57.62%	0.00%	0.00%
23L1	96.45%	87.45%	33.81%	8.06%	88.75%	77.50%	5.81%	0.00%	73.37%	57.62%	0.00%	0.00%
23M1	96.00%	87.00%	33.73%	7.98%	88.15%	76.90%	5.71%	0.00%	72.47%	56.72%	0.00%	0.00%
23N1	96.00%	87.00%	33.73%	7.98%	88.15%	76.90%	5.71%	0.00%	72.47%	56.72%	0.00%	0.00%
23O1	95.89%	86.89%	33.71%	7.96%	88.00%	76.75%	5.68%	0.00%	72.24%	56.49%	0.00%	0.00%
23P1	95.89%	86.89%	33.71%	7.96%	88.00%	76.75%	5.68%	0.00%	72.25%	56.50%	0.00%	0.00%
23A2	96.73%	87.73%	33.86%	8.11%	89.13%	77.88%	5.88%	0.00%	73.94%	58.19%	0.00%	0.00%
23B2	96.73%	87.73%	33.86%	8.11%	89.13%	77.88%	5.88%	0.00%	73.94%	58.19%	0.00%	0.00%
23C2	96.97%	87.97%	33.90%	8.15%	89.45%	78.20%	5.94%	0.00%	74.43%	58.68%	0.00%	0.00%
23D2	96.60%	87.60%	33.83%	8.08%	88.96%	77.71%	5.85%	0.00%	73.68%	57.93%	0.00%	0.00%
23E2	96.60%	87.60%	33.84%	8.09%	88.96%	77.71%	5.85%	0.00%	73.69%	57.94%	0.00%	0.00%
23F2	96.60%	87.60%	33.84%	8.09%	88.96%	77.71%	5.85%	0.00%	73.69%	57.94%	0.00%	0.00%
23G2	96.84%	87.84%	33.88%	8.13%	89.28%	78.03%	5.91%	0.00%	74.17%	58.42%	0.00%	0.00%
23H2	96.60%	87.60%	33.83%	8.08%	88.96%	77.71%	5.85%	0.00%	73.68%	57.93%	0.00%	0.00%
23I2	95.82%	86.82%	33.70%	7.95%	87.90%	76.65%	5.66%	0.00%	72.10%	56.35%	0.00%	0.00%
23J2	95.82%	86.82%	33.70%	7.95%	87.90%	76.65%	5.66%	0.00%	72.10%	56.35%	0.00%	0.00%
23K2	95.82%	86.82%	33.70%	7.95%	87.90%	76.65%	5.67%	0.00%	72.10%	56.35%	0.00%	0.00%
23L2	95.69%	86.69%	33.68%	7.93%	87.73%	76.48%	5.64%	0.00%	71.84%	56.09%	0.00%	0.00%
23M2	95.30%	86.30%	33.62%	7.87%	87.21%	75.96%	5.54%	0.00%	71.07%	55.32%	0.00%	0.00%
23N2	95.30%	86.30%	33.62%	7.87%	87.21%	75.96%	5.54%	0.00%	71.07%	55.32%	0.00%	0.00%
23O2	94.92%	85.92%	33.55%	7.80%	86.69%	75.44%	5.45%	0.00%	70.29%	54.54%	0.00%	0.00%
23P2	94.77%	85.77%	33.52%	7.77%	86.50%	75.25%	5.42%	0.00%	70.00%	54.25%	0.00%	0.00%
23A3	95.48%	86.48%	33.64%	7.89%	87.44%	76.19%	5.58%	0.00%	71.41%	55.66%	0.00%	0.00%
23B3	95.48%	86.48%	33.64%	7.89%	87.44%	76.19%	5.58%	0.00%	71.41%	55.66%	0.00%	0.00%
23C3	94.86%	85.86%	33.54%	7.79%	86.62%	75.37%	5.44%	0.00%	70.17%	54.42%	0.00%	0.00%
23D3	94.77%	85.77%	33.52%	7.77%	86.50%	75.25%	5.41%	0.00%	69.99%	54.24%	0.00%	0.00%
23E3	95.33%	86.33%	33.62%	7.87%	87.25%	76.00%	5.55%	0.00%	71.12%	55.37%	0.00%	0.00%
23F3	95.33%	86.33%	33.62%	7.87%	87.25%	76.00%	5.55%	0.00%	71.12%	55.37%	0.00%	0.00%
23G3	94.77%	85.77%	33.52%	7.77%	86.50%	75.25%	5.41%	0.00%	69.99%	54.24%	0.00%	0.00%
23H3	94.77%	85.77%	33.52%	7.77%	86.50%	75.25%	5.41%	0.00%	69.99%	54.24%	0.00%	0.00%
23I3	94.77%	85.77%	33.52%	7.77%	86.50%	75.25%	5.42%	0.00%	70.00%	54.25%	0.00%	0.00%
23J3	94.77%	85.77%	33.52%	7.77%	86.50%	75.25%	5.42%	0.00%	70.00%	54.25%	0.00%	0.00%
23K3	94.77%	85.77%	33.52%	7.77%	86.50%	75.25%	5.41%	0.00%	69.99%	54.24%	0.00%	0.00%
23L3	94.77%	85.77%	33.52%	7.77%	86.50%	75.25%	5.41%	0.00%	69.99%	54.24%	0.00%	0.00%
23M3	94.77%	85.77%	33.52%	7.77%	86.50%	75.25%	5.42%	0.00%	70.00%	54.25%	0.00%	0.00%
23N3	94.77%	85.77%	33.52%	7.77%	86.50%	75.25%	5.42%	0.00%	70.00%	54.25%	0.00%	0.00%
23O3	94.77%	85.77%	33.52%	7.77%	86.50%	75.25%	5.42%	0.00%	70.00%	54.25%	0.00%	0.00%
23P3	94.77%	85.77%	33.52%	7.77%	86.50%	75.25%	5.42%	0.00%	70.00%	54.25%	0.00%	0.00%
24A1	97.28%	88.28%	33.71%	7.96%	89.86%	78.61%	5.70%	0.00%	75.05%	59.30%	0.00%	0.00%
24B1	97.28%	88.28%	33.71%	7.96%	89.86%	78.61%	5.70%	0.00%	75.05%	59.30%	0.00%	0.00%

24C1	97.28%	88.28%	33.71%	7.96%	89.86%	78.61%	5.70%	0.00%	75.05%	59.30%	0.00%	0.00%
24D1	97.52%	88.52%	33.77%	8.02%	90.19%	78.94%	5.78%	0.00%	75.54%	59.79%	0.00%	0.00%
24E1	97.28%	88.28%	33.71%	7.96%	89.86%	78.61%	5.70%	0.00%	75.05%	59.30%	0.00%	0.00%
24F1	97.28%	88.28%	33.71%	7.96%	89.86%	78.61%	5.70%	0.00%	75.05%	59.30%	0.00%	0.00%
24G1	97.28%	88.28%	33.71%	7.96%	89.86%	78.61%	5.70%	0.00%	75.05%	59.30%	0.00%	0.00%
24H1	97.40%	88.40%	33.74%	7.99%	90.03%	78.78%	5.74%	0.00%	75.30%	59.55%	0.00%	0.00%
24I1	96.31%	87.31%	33.48%	7.73%	88.56%	77.31%	5.38%	0.00%	73.09%	57.34%	0.00%	0.00%
24J1	96.31%	87.31%	33.48%	7.73%	88.56%	77.31%	5.38%	0.00%	73.09%	57.34%	0.00%	0.00%
24K1	96.43%	87.43%	33.51%	7.76%	88.72%	77.47%	5.42%	0.00%	73.33%	57.58%	0.00%	0.00%
24L1	96.43%	87.43%	33.52%	7.77%	88.72%	77.47%	5.42%	0.00%	73.34%	57.59%	0.00%	0.00%
24M1	95.83%	86.83%	33.37%	7.62%	87.91%	76.66%	5.22%	0.00%	72.11%	56.36%	0.00%	0.00%
24N1	95.83%	86.83%	33.37%	7.62%	87.91%	76.66%	5.22%	0.00%	72.11%	56.36%	0.00%	0.00%
24O1	95.70%	86.70%	33.34%	7.59%	87.74%	76.49%	5.18%	0.00%	71.86%	56.11%	0.00%	0.00%
24P1	95.82%	86.82%	33.37%	7.62%	87.91%	76.66%	5.22%	0.00%	72.11%	56.36%	0.00%	0.00%
24A2	97.02%	88.02%	33.65%	7.90%	89.52%	78.27%	5.61%	0.00%	74.52%	58.77%	0.00%	0.00%
24B2	97.02%	88.02%	33.65%	7.90%	89.52%	78.27%	5.61%	0.00%	74.52%	58.77%	0.00%	0.00%
24C2	96.89%	87.89%	33.62%	7.87%	89.35%	78.10%	5.57%	0.00%	74.27%	58.52%	0.00%	0.00%
24D2	96.51%	87.51%	33.53%	7.78%	88.83%	77.58%	5.44%	0.00%	73.50%	57.75%	0.00%	0.00%
24E2	97.02%	88.02%	33.65%	7.90%	89.52%	78.27%	5.61%	0.00%	74.52%	58.77%	0.00%	0.00%
24F2	97.02%	88.02%	33.65%	7.90%	89.52%	78.27%	5.61%	0.00%	74.52%	58.77%	0.00%	0.00%
24G2	96.75%	87.75%	33.59%	7.84%	89.16%	77.91%	5.52%	0.00%	73.99%	58.24%	0.00%	0.00%
24H2	96.51%	87.51%	33.53%	7.78%	88.83%	77.58%	5.44%	0.00%	73.50%	57.75%	0.00%	0.00%
24I2	95.78%	86.78%	33.36%	7.61%	87.85%	76.60%	5.20%	0.00%	72.02%	56.27%	0.00%	0.00%
24J2	95.78%	86.78%	33.36%	7.61%	87.85%	76.60%	5.20%	0.00%	72.02%	56.27%	0.00%	0.00%
24K2	96.06%	87.06%	33.43%	7.68%	88.22%	76.97%	5.30%	0.00%	72.59%	56.84%	0.00%	0.00%
24L2	95.24%	86.24%	33.24%	7.49%	87.13%	75.88%	5.03%	0.00%	70.94%	55.19%	0.00%	0.00%
24M2	95.24%	86.24%	33.24%	7.49%	87.13%	75.88%	5.03%	0.00%	70.94%	55.19%	0.00%	0.00%
24N2	95.24%	86.24%	33.24%	7.49%	87.13%	75.88%	5.03%	0.00%	70.94%	55.19%	0.00%	0.00%
24O2	94.98%	85.98%	33.17%	7.42%	86.77%	75.52%	4.94%	0.00%	70.41%	54.66%	0.00%	0.00%
24P2	94.98%	85.98%	33.17%	7.42%	86.77%	75.52%	4.94%	0.00%	70.40%	54.65%	0.00%	0.00%
24A3	95.73%	86.73%	33.35%	7.60%	87.77%	76.52%	5.19%	0.00%	71.91%	56.16%	0.00%	0.00%
24B3	95.73%	86.73%	33.35%	7.60%	87.77%	76.52%	5.19%	0.00%	71.91%	56.16%	0.00%	0.00%
24C3	94.94%	85.94%	33.16%	7.41%	86.71%	75.46%	4.93%	0.00%	70.32%	54.57%	0.00%	0.00%
24D3	94.94%	85.94%	33.16%	7.41%	86.71%	75.46%	4.93%	0.00%	70.32%	54.57%	0.00%	0.00%
24E3	95.57%	86.57%	33.31%	7.56%	87.56%	76.31%	5.14%	0.00%	71.59%	55.84%	0.00%	0.00%
24F3	95.57%	86.57%	33.31%	7.56%	87.56%	76.31%	5.14%	0.00%	71.59%	55.84%	0.00%	0.00%
24G3	94.78%	85.78%	33.13%	7.38%	86.50%	75.25%	4.88%	0.00%	70.00%	54.25%	0.00%	0.00%
24H3	94.94%	85.94%	33.16%	7.41%	86.71%	75.46%	4.93%	0.00%	70.32%	54.57%	0.00%	0.00%
24I3	94.66%	85.66%	33.10%	7.35%	86.34%	75.09%	4.83%	0.00%	69.75%	54.00%	0.00%	0.00%
24J3	94.66%	85.66%	33.10%	7.35%	86.34%	75.09%	4.83%	0.00%	69.75%	54.00%	0.00%	0.00%

24K3	94.25%	85.25%	33.00%	7.25%	85.79%	74.54%	4.70%	0.00%	68.93%	53.18%	0.00%	0.00%
24L3	94.25%	85.25%	33.00%	7.25%	85.78%	74.53%	4.70%	0.00%	68.93%	53.18%	0.00%	0.00%
24M3	94.25%	85.25%	33.00%	7.25%	85.78%	74.53%	4.70%	0.00%	68.93%	53.18%	0.00%	0.00%
24N3	94.25%	85.25%	33.00%	7.25%	85.78%	74.53%	4.70%	0.00%	68.93%	53.18%	0.00%	0.00%
24O3	94.25%	85.25%	33.00%	7.25%	85.79%	74.54%	4.71%	0.00%	68.93%	53.18%	0.00%	0.00%
24P3	94.25%	85.25%	33.00%	7.25%	85.78%	74.53%	4.70%	0.00%	68.92%	53.17%	0.00%	0.00%
25A1	97.23%	88.23%	33.48%	7.73%	89.81%	78.56%	5.39%	0.00%	74.96%	59.21%	0.00%	0.00%
25B1	97.23%	88.23%	33.48%	7.73%	89.81%	78.56%	5.39%	0.00%	74.96%	59.21%	0.00%	0.00%
25C1	97.23%	88.23%	33.49%	7.74%	89.81%	78.56%	5.40%	0.00%	74.97%	59.22%	0.00%	0.00%
25D1	97.23%	88.23%	33.49%	7.74%	89.81%	78.56%	5.40%	0.00%	74.97%	59.22%	0.00%	0.00%
25E1	97.23%	88.23%	33.48%	7.73%	89.81%	78.56%	5.39%	0.00%	74.96%	59.21%	0.00%	0.00%
25F1	97.23%	88.23%	33.48%	7.73%	89.81%	78.56%	5.39%	0.00%	74.96%	59.21%	0.00%	0.00%
25G1	97.23%	88.23%	33.49%	7.74%	89.81%	78.56%	5.40%	0.00%	74.97%	59.22%	0.00%	0.00%
25H1	97.23%	88.23%	33.49%	7.74%	89.81%	78.56%	5.40%	0.00%	74.97%	59.22%	0.00%	0.00%
25I1	96.72%	87.72%	33.35%	7.60%	89.12%	77.87%	5.20%	0.00%	73.94%	58.19%	0.00%	0.00%
25J1	96.72%	87.72%	33.35%	7.60%	89.12%	77.87%	5.20%	0.00%	73.94%	58.19%	0.00%	0.00%
25K1	96.73%	87.73%	33.35%	7.60%	89.13%	77.88%	5.21%	0.00%	73.94%	58.19%	0.00%	0.00%
25L1	96.73%	87.73%	33.35%	7.60%	89.13%	77.88%	5.21%	0.00%	73.94%	58.19%	0.00%	0.00%
25M1	96.61%	87.61%	33.33%	7.58%	88.97%	77.72%	5.17%	0.00%	73.70%	57.95%	0.00%	0.00%
25N1	96.61%	87.61%	33.33%	7.58%	88.97%	77.72%	5.17%	0.00%	73.70%	57.95%	0.00%	0.00%
25O1	96.61%	87.61%	33.32%	7.57%	88.96%	77.71%	5.17%	0.00%	73.70%	57.95%	0.00%	0.00%
25P1	96.61%	87.61%	33.32%	7.57%	88.97%	77.72%	5.17%	0.00%	73.70%	57.95%	0.00%	0.00%
25A2	97.02%	88.02%	33.43%	7.68%	89.52%	78.27%	5.32%	0.00%	74.53%	58.78%	0.00%	0.00%
25B2	97.02%	88.02%	33.43%	7.68%	89.52%	78.27%	5.32%	0.00%	74.53%	58.78%	0.00%	0.00%
25C2	96.91%	87.91%	33.40%	7.65%	89.37%	78.12%	5.27%	0.00%	74.31%	58.56%	0.00%	0.00%
25D2	96.76%	87.76%	33.36%	7.61%	89.18%	77.93%	5.22%	0.00%	74.01%	58.26%	0.00%	0.00%
25E2	97.02%	88.02%	33.43%	7.68%	89.52%	78.27%	5.32%	0.00%	74.53%	58.78%	0.00%	0.00%
25F2	97.02%	88.02%	33.43%	7.68%	89.52%	78.27%	5.32%	0.00%	74.53%	58.78%	0.00%	0.00%
25G2	96.91%	87.91%	33.40%	7.65%	89.37%	78.12%	5.27%	0.00%	74.31%	58.56%	0.00%	0.00%
25H2	96.76%	87.76%	33.36%	7.61%	89.18%	77.93%	5.22%	0.00%	74.01%	58.26%	0.00%	0.00%
25I2	96.33%	87.33%	33.24%	7.49%	88.59%	77.34%	5.06%	0.00%	73.14%	57.39%	0.00%	0.00%
25J2	96.33%	87.33%	33.24%	7.49%	88.59%	77.34%	5.06%	0.00%	73.14%	57.39%	0.00%	0.00%
25K2	96.48%	87.48%	33.28%	7.53%	88.79%	77.54%	5.11%	0.00%	73.43%	57.68%	0.00%	0.00%
25L2	96.48%	87.48%	33.29%	7.54%	88.79%	77.54%	5.12%	0.00%	73.44%	57.69%	0.00%	0.00%
25M2	96.19%	87.19%	33.21%	7.46%	88.40%	77.15%	5.01%	0.00%	72.86%	57.11%	0.00%	0.00%
25N2	96.19%	87.19%	33.21%	7.46%	88.40%	77.15%	5.01%	0.00%	72.86%	57.11%	0.00%	0.00%
25O2	96.04%	87.04%	33.17%	7.42%	88.21%	76.96%	4.96%	0.00%	72.56%	56.81%	0.00%	0.00%
25P2	96.04%	87.04%	33.17%	7.42%	88.20%	76.95%	4.96%	0.00%	72.55%	56.80%	0.00%	0.00%
25A3	96.18%	87.18%	33.20%	7.45%	88.39%	77.14%	5.00%	0.00%	72.84%	57.09%	0.00%	0.00%
25B3	96.18%	87.18%	33.20%	7.45%	88.39%	77.14%	5.00%	0.00%	72.84%	57.09%	0.00%	0.00%

25C3	95.86%	86.86%	33.12%	7.37%	87.95%	76.70%	4.88%	0.00%	72.17%	56.42%	0.00%	0.00%
25D3	95.69%	86.69%	33.07%	7.32%	87.73%	76.48%	4.82%	0.00%	71.84%	56.09%	0.00%	0.00%
25E3	96.02%	87.02%	33.16%	7.41%	88.17%	76.92%	4.94%	0.00%	72.50%	56.75%	0.00%	0.00%
25F3	96.02%	87.02%	33.16%	7.41%	88.17%	76.92%	4.94%	0.00%	72.50%	56.75%	0.00%	0.00%
25G3	95.69%	86.69%	33.07%	7.32%	87.73%	76.48%	4.82%	0.00%	71.84%	56.09%	0.00%	0.00%
25H3	95.69%	86.69%	33.07%	7.32%	87.73%	76.48%	4.82%	0.00%	71.84%	56.09%	0.00%	0.00%
25I3	95.77%	86.77%	33.09%	7.34%	87.83%	76.58%	4.85%	0.00%	72.00%	56.25%	0.00%	0.00%
25J3	95.77%	86.77%	33.09%	7.34%	87.83%	76.58%	4.85%	0.00%	72.00%	56.25%	0.00%	0.00%
25K3	95.44%	86.44%	33.01%	7.26%	87.39%	76.14%	4.73%	0.00%	71.34%	55.59%	0.00%	0.00%
25L3	95.44%	86.44%	33.01%	7.26%	87.39%	76.14%	4.73%	0.00%	71.33%	55.58%	0.00%	0.00%
25M3	95.61%	86.61%	33.05%	7.30%	87.62%	76.37%	4.79%	0.00%	71.67%	55.92%	0.00%	0.00%
25N3	95.61%	86.61%	33.05%	7.30%	87.62%	76.37%	4.79%	0.00%	71.67%	55.92%	0.00%	0.00%
25O3	95.61%	86.61%	33.06%	7.31%	87.62%	76.37%	4.80%	0.00%	71.68%	55.93%	0.00%	0.00%
25P3	95.61%	86.61%	33.06%	7.31%	87.62%	76.37%	4.80%	0.00%	71.68%	55.93%	0.00%	0.00%
11A1	98.00%	89.00%	34.25%	8.50%	90.83%	79.58%	6.42%	0.00%	76.50%	60.75%	0.00%	0.00%
11B1	98.00%	89.00%	34.25%	8.50%	90.83%	79.58%	6.42%	0.00%	76.50%	60.75%	0.00%	0.00%
11C1	98.00%	89.00%	34.25%	8.50%	90.83%	79.58%	6.42%	0.00%	76.50%	60.75%	0.00%	0.00%
11D1	98.00%	89.00%	34.25%	8.50%	90.83%	79.58%	6.42%	0.00%	76.50%	60.75%	0.00%	0.00%
11E1	97.80%	88.80%	34.23%	8.48%	90.56%	79.31%	6.39%	0.00%	76.09%	60.34%	0.00%	0.00%
11F1	97.80%	88.80%	34.23%	8.48%	90.56%	79.31%	6.39%	0.00%	76.09%	60.34%	0.00%	0.00%
11G1	97.80%	88.80%	34.23%	8.48%	90.56%	79.31%	6.39%	0.00%	76.09%	60.34%	0.00%	0.00%
11H1	97.80%	88.80%	34.23%	8.48%	90.56%	79.31%	6.39%	0.00%	76.09%	60.34%	0.00%	0.00%
11I1	97.49%	88.49%	34.20%	8.45%	90.15%	78.90%	6.35%	0.00%	75.47%	59.72%	0.00%	0.00%
11J1	97.49%	88.49%	34.20%	8.45%	90.15%	78.90%	6.35%	0.00%	75.47%	59.72%	0.00%	0.00%
11K1	97.49%	88.49%	34.20%	8.45%	90.15%	78.90%	6.35%	0.00%	75.47%	59.72%	0.00%	0.00%
11L1	97.49%	88.49%	34.20%	8.45%	90.15%	78.90%	6.35%	0.00%	75.47%	59.72%	0.00%	0.00%
11M1	96.98%	87.98%	34.16%	8.41%	89.47%	78.22%	6.28%	0.00%	74.45%	58.70%	0.00%	0.00%
11N1	96.98%	87.98%	34.16%	8.41%	89.47%	78.22%	6.28%	0.00%	74.45%	58.70%	0.00%	0.00%
11O1	96.98%	87.98%	34.16%	8.41%	89.47%	78.22%	6.28%	0.00%	74.45%	58.70%	0.00%	0.00%
11P1	96.98%	87.98%	34.16%	8.41%	89.47%	78.22%	6.28%	0.00%	74.45%	58.70%	0.00%	0.00%
11A2	97.58%	88.58%	34.21%	8.46%	90.27%	79.02%	6.36%	0.00%	75.66%	59.91%	0.00%	0.00%
11B2	97.58%	88.58%	34.21%	8.46%	90.27%	79.02%	6.36%	0.00%	75.66%	59.91%	0.00%	0.00%
11C2	97.58%	88.58%	34.21%	8.46%	90.27%	79.02%	6.36%	0.00%	75.66%	59.91%	0.00%	0.00%
11D2	97.58%	88.58%	34.21%	8.46%	90.27%	79.02%	6.36%	0.00%	75.66%	59.91%	0.00%	0.00%
11E2	97.35%	88.35%	34.19%	8.44%	89.96%	78.71%	6.33%	0.00%	75.19%	59.44%	0.00%	0.00%
11F2	97.35%	88.35%	34.19%	8.44%	89.96%	78.71%	6.33%	0.00%	75.19%	59.44%	0.00%	0.00%
11G2	97.23%	88.23%	34.18%	8.43%	89.80%	78.55%	6.32%	0.00%	74.95%	59.20%	0.00%	0.00%
11H2	97.23%	88.23%	34.18%	8.43%	89.80%	78.55%	6.32%	0.00%	74.95%	59.20%	0.00%	0.00%
11I2	96.99%	87.99%	34.16%	8.41%	89.49%	78.24%	6.29%	0.00%	74.48%	58.73%	0.00%	0.00%
11J2	96.99%	87.99%	34.16%	8.41%	89.49%	78.24%	6.29%	0.00%	74.48%	58.73%	0.00%	0.00%

11K2	97.11%	88.11%	34.17%	8.42%	89.64%	78.39%	6.30%	0.00%	74.72%	58.97%	0.00%	0.00%
11L2	97.11%	88.11%	34.17%	8.42%	89.64%	78.39%	6.30%	0.00%	74.72%	58.97%	0.00%	0.00%
11M2	96.52%	87.52%	34.11%	8.36%	88.86%	77.61%	6.23%	0.00%	73.54%	57.79%	0.00%	0.00%
11N2	96.52%	87.52%	34.11%	8.36%	88.86%	77.61%	6.23%	0.00%	73.54%	57.79%	0.00%	0.00%
11O2	96.39%	87.39%	34.10%	8.35%	88.68%	77.43%	6.21%	0.00%	73.27%	57.52%	0.00%	0.00%
11P2	96.27%	87.27%	34.09%	8.34%	88.52%	77.27%	6.19%	0.00%	73.03%	57.28%	0.00%	0.00%
11A3	96.57%	87.57%	34.12%	8.37%	88.92%	77.67%	6.23%	0.00%	73.63%	57.88%	0.00%	0.00%
11B3	96.57%	87.57%	34.12%	8.37%	88.92%	77.67%	6.23%	0.00%	73.63%	57.88%	0.00%	0.00%
11C3	96.31%	87.31%	34.09%	8.34%	88.56%	77.31%	6.20%	0.00%	73.10%	57.35%	0.00%	0.00%
11D3	95.77%	86.77%	34.04%	8.29%	87.85%	76.60%	6.13%	0.00%	72.03%	56.28%	0.00%	0.00%
11E3	96.44%	87.44%	34.10%	8.35%	88.74%	77.49%	6.21%	0.00%	73.36%	57.61%	0.00%	0.00%
11F3	96.44%	87.44%	34.10%	8.35%	88.74%	77.49%	6.21%	0.00%	73.36%	57.61%	0.00%	0.00%
11G3	96.04%	87.04%	34.07%	8.32%	88.21%	76.96%	6.16%	0.00%	72.56%	56.81%	0.00%	0.00%
11H3	95.77%	86.77%	34.04%	8.29%	87.85%	76.60%	6.13%	0.00%	72.03%	56.28%	0.00%	0.00%
11I3	96.17%	87.17%	34.08%	8.33%	88.39%	77.14%	6.18%	0.00%	72.83%	57.08%	0.00%	0.00%
11J3	96.17%	87.17%	34.08%	8.33%	88.39%	77.14%	6.18%	0.00%	72.83%	57.08%	0.00%	0.00%
11K3	95.77%	86.77%	34.04%	8.29%	87.85%	76.60%	6.13%	0.00%	72.03%	56.28%	0.00%	0.00%
11L3	95.64%	86.64%	34.03%	8.28%	87.68%	76.43%	6.11%	0.00%	71.76%	56.01%	0.00%	0.00%
11M3	95.91%	86.91%	34.06%	8.31%	88.03%	76.78%	6.15%	0.00%	72.30%	56.55%	0.00%	0.00%
11N3	95.91%	86.91%	34.06%	8.31%	88.03%	76.78%	6.15%	0.00%	72.30%	56.55%	0.00%	0.00%
11O3	95.64%	86.64%	34.03%	8.28%	87.68%	76.43%	6.11%	0.00%	71.76%	56.01%	0.00%	0.00%
11P3	95.24%	86.24%	33.99%	8.24%	87.14%	75.89%	6.06%	0.00%	70.96%	55.21%	0.00%	0.00%
12A1	97.96%	88.96%	34.21%	8.46%	90.78%	79.53%	6.36%	0.00%	76.42%	60.67%	0.00%	0.00%
12B1	97.96%	88.96%	34.21%	8.46%	90.78%	79.53%	6.36%	0.00%	76.42%	60.67%	0.00%	0.00%
12C1	97.96%	88.96%	34.21%	8.46%	90.78%	79.53%	6.36%	0.00%	76.41%	60.66%	0.00%	0.00%
12D1	97.96%	88.96%	34.21%	8.46%	90.78%	79.53%	6.36%	0.00%	76.42%	60.67%	0.00%	0.00%
12E1	97.75%	88.75%	34.19%	8.44%	90.50%	79.25%	6.33%	0.00%	76.00%	60.25%	0.00%	0.00%
12F1	97.75%	88.75%	34.19%	8.44%	90.50%	79.25%	6.33%	0.00%	76.00%	60.25%	0.00%	0.00%
12G1	97.75%	88.75%	34.19%	8.44%	90.50%	79.25%	6.33%	0.00%	76.00%	60.25%	0.00%	0.00%
12H1	97.75%	88.75%	34.19%	8.44%	90.50%	79.25%	6.33%	0.00%	76.00%	60.25%	0.00%	0.00%
12I1	97.45%	88.45%	34.16%	8.41%	90.09%	78.84%	6.29%	0.00%	75.39%	59.64%	0.00%	0.00%
12J1	97.45%	88.45%	34.16%	8.41%	90.09%	78.84%	6.29%	0.00%	75.39%	59.64%	0.00%	0.00%
12K1	97.45%	88.45%	34.16%	8.41%	90.09%	78.84%	6.29%	0.00%	75.39%	59.64%	0.00%	0.00%
12L1	97.45%	88.45%	34.16%	8.41%	90.09%	78.84%	6.29%	0.00%	75.39%	59.64%	0.00%	0.00%
12M1	96.94%	87.94%	34.11%	8.36%	89.41%	78.16%	6.23%	0.00%	74.36%	58.61%	0.00%	0.00%
12N1	96.94%	87.94%	34.11%	8.36%	89.41%	78.16%	6.23%	0.00%	74.36%	58.61%	0.00%	0.00%
12O1	96.94%	87.94%	34.11%	8.36%	89.41%	78.16%	6.23%	0.00%	74.36%	58.61%	0.00%	0.00%
12P1	96.94%	87.94%	34.11%	8.36%	89.41%	78.16%	6.23%	0.00%	74.36%	58.61%	0.00%	0.00%
12A2	97.54%	88.54%	34.17%	8.42%	90.22%	78.97%	6.31%	0.00%	75.57%	59.82%	0.00%	0.00%
12B2	97.54%	88.54%	34.17%	8.42%	90.22%	78.97%	6.31%	0.00%	75.57%	59.82%	0.00%	0.00%

12C2	97.54%	88.54%	34.17%	8.42%	90.22%	78.97%	6.31%	0.00%	75.57%	59.82%	0.00%	0.00%
12D2	97.54%	88.54%	34.17%	8.42%	90.22%	78.97%	6.31%	0.00%	75.57%	59.82%	0.00%	0.00%
12E2	97.30%	88.30%	34.15%	8.40%	89.90%	78.65%	6.28%	0.00%	75.10%	59.35%	0.00%	0.00%
12F2	97.30%	88.30%	34.15%	8.40%	89.90%	78.65%	6.28%	0.00%	75.10%	59.35%	0.00%	0.00%
12G2	97.19%	88.19%	34.14%	8.39%	89.74%	78.49%	6.26%	0.00%	74.87%	59.12%	0.00%	0.00%
12H2	97.19%	88.19%	34.14%	8.39%	89.74%	78.49%	6.26%	0.00%	74.87%	59.12%	0.00%	0.00%
12I2	96.95%	87.95%	34.11%	8.36%	89.43%	78.18%	6.23%	0.00%	74.40%	58.65%	0.00%	0.00%
12J2	96.95%	87.95%	34.11%	8.36%	89.43%	78.18%	6.23%	0.00%	74.40%	58.65%	0.00%	0.00%
12K2	97.07%	88.07%	34.13%	8.38%	89.59%	78.34%	6.25%	0.00%	74.63%	58.88%	0.00%	0.00%
12L2	97.07%	88.07%	34.13%	8.38%	89.59%	78.34%	6.25%	0.00%	74.63%	58.88%	0.00%	0.00%
12M2	96.48%	87.48%	34.07%	8.32%	88.80%	77.55%	6.17%	0.00%	73.45%	57.70%	0.00%	0.00%
12N2	96.48%	87.48%	34.07%	8.32%	88.80%	77.55%	6.17%	0.00%	73.45%	57.70%	0.00%	0.00%
12O2	96.35%	87.35%	34.06%	8.31%	88.62%	77.37%	6.15%	0.00%	73.19%	57.44%	0.00%	0.00%
12P2	96.23%	87.23%	34.05%	8.30%	88.47%	77.22%	6.14%	0.00%	72.95%	57.20%	0.00%	0.00%
12A3	96.53%	87.53%	34.08%	8.33%	88.86%	77.61%	6.18%	0.00%	73.54%	57.79%	0.00%	0.00%
12B3	96.53%	87.53%	34.08%	8.33%	88.86%	77.61%	6.18%	0.00%	73.54%	57.79%	0.00%	0.00%
12C3	96.26%	87.26%	34.05%	8.30%	88.51%	77.26%	6.14%	0.00%	73.01%	57.26%	0.00%	0.00%
12D3	95.73%	86.73%	34.00%	8.25%	87.80%	76.55%	6.07%	0.00%	71.94%	56.19%	0.00%	0.00%
12E3	96.40%	87.40%	34.06%	8.31%	88.68%	77.43%	6.16%	0.00%	73.28%	57.53%	0.00%	0.00%
12F3	96.40%	87.40%	34.06%	8.31%	88.68%	77.43%	6.16%	0.00%	73.28%	57.53%	0.00%	0.00%
12G3	96.00%	87.00%	34.03%	8.28%	88.15%	76.90%	6.11%	0.00%	72.48%	56.73%	0.00%	0.00%
12H3	95.73%	86.73%	34.00%	8.25%	87.80%	76.55%	6.07%	0.00%	71.94%	56.19%	0.00%	0.00%
12I3	96.13%	87.13%	34.04%	8.29%	88.33%	77.08%	6.12%	0.00%	72.74%	56.99%	0.00%	0.00%
12J3	96.13%	87.13%	34.04%	8.29%	88.33%	77.08%	6.12%	0.00%	72.74%	56.99%	0.00%	0.00%
12K3	95.73%	86.73%	34.00%	8.25%	87.80%	76.55%	6.07%	0.00%	71.94%	56.19%	0.00%	0.00%
12L3	95.60%	86.60%	33.99%	8.24%	87.62%	76.37%	6.05%	0.00%	71.68%	55.93%	0.00%	0.00%
12M3	95.87%	86.87%	34.01%	8.26%	87.97%	76.72%	6.09%	0.00%	72.21%	56.46%	0.00%	0.00%
12N3	95.87%	86.87%	34.01%	8.26%	87.97%	76.72%	6.09%	0.00%	72.21%	56.46%	0.00%	0.00%
12O3	95.60%	86.60%	33.99%	8.24%	87.62%	76.37%	6.05%	0.00%	71.68%	55.93%	0.00%	0.00%
12P3	95.20%	86.20%	33.95%	8.20%	87.09%	75.84%	6.00%	0.00%	70.88%	55.13%	0.00%	0.00%
13A1	97.83%	88.83%	34.08%	8.33%	90.61%	79.36%	6.19%	0.00%	76.16%	60.41%	0.00%	0.00%
13B1	97.83%	88.83%	34.08%	8.33%	90.61%	79.36%	6.19%	0.00%	76.16%	60.41%	0.00%	0.00%
13C1	97.83%	88.83%	34.08%	8.33%	90.61%	79.36%	6.19%	0.00%	76.16%	60.41%	0.00%	0.00%
13D1	97.83%	88.83%	34.08%	8.33%	90.61%	79.36%	6.19%	0.00%	76.16%	60.41%	0.00%	0.00%
13E1	97.61%	88.61%	34.04%	8.29%	90.31%	79.06%	6.14%	0.00%	75.71%	59.96%	0.00%	0.00%
13F1	97.61%	88.61%	34.04%	8.29%	90.31%	79.06%	6.14%	0.00%	75.71%	59.96%	0.00%	0.00%
13G1	97.72%	88.72%	34.06%	8.31%	90.46%	79.21%	6.17%	0.00%	75.94%	60.19%	0.00%	0.00%
13H1	97.72%	88.72%	34.06%	8.31%	90.46%	79.21%	6.17%	0.00%	75.94%	60.19%	0.00%	0.00%
13I1	97.27%	88.27%	33.99%	8.24%	89.86%	78.61%	6.06%	0.00%	75.04%	59.29%	0.00%	0.00%
13J1	97.27%	88.27%	33.99%	8.24%	89.86%	78.61%	6.06%	0.00%	75.04%	59.29%	0.00%	0.00%

13K1	97.39%	88.39%	34.01%	8.26%	90.01%	78.76%	6.09%	0.00%	75.26%	59.51%	0.00%	0.00%
13L1	97.38%	88.38%	34.01%	8.26%	90.01%	78.76%	6.09%	0.00%	75.26%	59.51%	0.00%	0.00%
13M1	96.72%	87.72%	33.89%	8.14%	89.11%	77.86%	5.93%	0.00%	73.91%	58.16%	0.00%	0.00%
13N1	96.72%	87.72%	33.89%	8.14%	89.11%	77.86%	5.93%	0.00%	73.91%	58.16%	0.00%	0.00%
13O1	96.72%	87.72%	33.89%	8.14%	89.11%	77.86%	5.93%	0.00%	73.91%	58.16%	0.00%	0.00%
13P1	96.72%	87.72%	33.89%	8.14%	89.11%	77.86%	5.93%	0.00%	73.91%	58.16%	0.00%	0.00%
13A2	97.50%	88.50%	34.03%	8.28%	90.17%	78.92%	6.11%	0.00%	75.50%	59.75%	0.00%	0.00%
13B2	97.50%	88.50%	34.03%	8.28%	90.17%	78.92%	6.11%	0.00%	75.50%	59.75%	0.00%	0.00%
13C2	97.36%	88.36%	34.00%	8.25%	89.97%	78.72%	6.08%	0.00%	75.21%	59.46%	0.00%	0.00%
13D2	97.36%	88.36%	34.00%	8.25%	89.97%	78.72%	6.08%	0.00%	75.21%	59.46%	0.00%	0.00%
13E2	97.25%	88.25%	33.98%	8.23%	89.82%	78.57%	6.05%	0.00%	74.98%	59.23%	0.00%	0.00%
13F2	97.25%	88.25%	33.98%	8.23%	89.82%	78.57%	6.05%	0.00%	74.98%	59.23%	0.00%	0.00%
13G2	96.97%	87.97%	33.94%	8.19%	89.45%	78.20%	5.99%	0.00%	74.43%	58.68%	0.00%	0.00%
13H2	96.97%	87.97%	33.94%	8.19%	89.45%	78.20%	5.99%	0.00%	74.43%	58.68%	0.00%	0.00%
13I2	96.60%	87.60%	33.87%	8.12%	88.96%	77.71%	5.90%	0.00%	73.69%	57.94%	0.00%	0.00%
13J2	96.60%	87.60%	33.87%	8.12%	88.96%	77.71%	5.90%	0.00%	73.69%	57.94%	0.00%	0.00%
13K2	96.72%	87.72%	33.89%	8.14%	89.11%	77.86%	5.93%	0.00%	73.91%	58.16%	0.00%	0.00%
13L2	96.72%	87.72%	33.89%	8.14%	89.11%	77.86%	5.93%	0.00%	73.91%	58.16%	0.00%	0.00%
13M2	96.09%	87.09%	33.79%	8.04%	88.27%	77.02%	5.78%	0.00%	72.66%	56.91%	0.00%	0.00%
13N2	96.09%	87.09%	33.79%	8.04%	88.27%	77.02%	5.78%	0.00%	72.66%	56.91%	0.00%	0.00%
13O2	96.09%	87.09%	33.79%	8.04%	88.27%	77.02%	5.78%	0.00%	72.65%	56.90%	0.00%	0.00%
13P2	96.09%	87.09%	33.79%	8.04%	88.27%	77.02%	5.78%	0.00%	72.65%	56.90%	0.00%	0.00%
13A3	96.56%	87.56%	33.86%	8.11%	88.90%	77.65%	5.89%	0.00%	73.60%	57.85%	0.00%	0.00%
13B3	96.56%	87.56%	33.86%	8.11%	88.90%	77.65%	5.89%	0.00%	73.60%	57.85%	0.00%	0.00%
13C3	96.82%	87.82%	33.91%	8.16%	89.24%	77.99%	5.95%	0.00%	74.11%	58.36%	0.00%	0.00%
13D3	96.67%	87.67%	33.88%	8.13%	89.05%	77.80%	5.92%	0.00%	73.82%	58.07%	0.00%	0.00%
13E3	96.41%	87.41%	33.84%	8.09%	88.70%	77.45%	5.86%	0.00%	73.30%	57.55%	0.00%	0.00%
13F3	96.41%	87.41%	33.84%	8.09%	88.70%	77.45%	5.86%	0.00%	73.30%	57.55%	0.00%	0.00%
13G3	96.53%	87.53%	33.86%	8.11%	88.85%	77.60%	5.88%	0.00%	73.53%	57.78%	0.00%	0.00%
13H3	96.38%	87.38%	33.84%	8.09%	88.66%	77.41%	5.85%	0.00%	73.24%	57.49%	0.00%	0.00%
13I3	95.69%	86.69%	33.72%	7.97%	87.73%	76.48%	5.68%	0.00%	71.84%	56.09%	0.00%	0.00%
13J3	95.69%	86.69%	33.72%	7.97%	87.73%	76.48%	5.68%	0.00%	71.84%	56.09%	0.00%	0.00%
13K3	95.80%	86.80%	33.74%	7.99%	87.88%	76.63%	5.71%	0.00%	72.07%	56.32%	0.00%	0.00%
13L3	95.80%	86.80%	33.74%	7.99%	87.88%	76.63%	5.71%	0.00%	72.07%	56.32%	0.00%	0.00%
13M3	95.40%	86.40%	33.67%	7.92%	87.34%	76.09%	5.62%	0.00%	71.26%	55.51%	0.00%	0.00%
13N3	95.40%	86.40%	33.67%	7.92%	87.34%	76.09%	5.62%	0.00%	71.26%	55.51%	0.00%	0.00%
13O3	94.96%	85.96%	33.59%	7.84%	86.75%	75.50%	5.51%	0.00%	70.38%	54.63%	0.00%	0.00%
13P3	94.96%	85.96%	33.59%	7.84%	86.75%	75.50%	5.51%	0.00%	70.38%	54.63%	0.00%	0.00%
14A1	97.62%	88.62%	33.87%	8.12%	90.33%	79.08%	5.91%	0.00%	75.74%	59.99%	0.00%	0.00%
14B1	97.62%	88.62%	33.87%	8.12%	90.33%	79.08%	5.91%	0.00%	75.74%	59.99%	0.00%	0.00%

14C1	97.62%	88.62%	33.87%	8.12%	90.33%	79.08%	5.91%	0.00%	75.74%	59.99%	0.00%	0.00%
14D1	97.62%	88.62%	33.87%	8.12%	90.33%	79.08%	5.91%	0.00%	75.74%	59.99%	0.00%	0.00%
14E1	97.38%	88.38%	33.81%	8.06%	90.00%	78.75%	5.83%	0.00%	75.25%	59.50%	0.00%	0.00%
14F1	97.38%	88.38%	33.81%	8.06%	90.00%	78.75%	5.83%	0.00%	75.25%	59.50%	0.00%	0.00%
14G1	97.50%	88.50%	33.84%	8.09%	90.16%	78.91%	5.87%	0.00%	75.50%	59.75%	0.00%	0.00%
14H1	97.38%	88.38%	33.81%	8.06%	90.00%	78.75%	5.83%	0.00%	75.25%	59.50%	0.00%	0.00%
14I1	97.02%	88.02%	33.73%	7.98%	89.51%	78.26%	5.71%	0.00%	74.52%	58.77%	0.00%	0.00%
14J1	97.02%	88.02%	33.73%	7.98%	89.51%	78.26%	5.71%	0.00%	74.52%	58.77%	0.00%	0.00%
14K1	97.14%	88.14%	33.76%	8.01%	89.67%	78.42%	5.75%	0.00%	74.76%	59.01%	0.00%	0.00%
14L1	97.01%	88.01%	33.73%	7.98%	89.51%	78.26%	5.71%	0.00%	74.51%	58.76%	0.00%	0.00%
14M1	96.41%	87.41%	33.59%	7.84%	88.70%	77.45%	5.52%	0.00%	73.29%	57.54%	0.00%	0.00%
14N1	96.41%	87.41%	33.59%	7.84%	88.70%	77.45%	5.52%	0.00%	73.29%	57.54%	0.00%	0.00%
14O1	96.41%	87.41%	33.59%	7.84%	88.70%	77.45%	5.52%	0.00%	73.30%	57.55%	0.00%	0.00%
14P1	96.41%	87.41%	33.59%	7.84%	88.70%	77.45%	5.52%	0.00%	73.29%	57.54%	0.00%	0.00%
14A2	97.13%	88.13%	33.76%	8.01%	89.66%	78.41%	5.75%	0.00%	74.74%	58.99%	0.00%	0.00%
14B2	97.13%	88.13%	33.76%	8.01%	89.66%	78.41%	5.75%	0.00%	74.74%	58.99%	0.00%	0.00%
14C2	96.99%	87.99%	33.72%	7.97%	89.47%	78.22%	5.71%	0.00%	74.46%	58.71%	0.00%	0.00%
14D2	96.71%	87.71%	33.66%	7.91%	89.09%	77.84%	5.61%	0.00%	73.89%	58.14%	0.00%	0.00%
14E2	96.85%	87.85%	33.69%	7.94%	89.29%	78.04%	5.66%	0.00%	74.18%	58.43%	0.00%	0.00%
14F2	96.85%	87.85%	33.69%	7.94%	89.29%	78.04%	5.66%	0.00%	74.18%	58.43%	0.00%	0.00%
14G2	96.57%	87.57%	33.63%	7.88%	88.91%	77.66%	5.57%	0.00%	73.61%	57.86%	0.00%	0.00%
14H2	96.29%	87.29%	33.56%	7.81%	88.53%	77.28%	5.47%	0.00%	73.05%	57.30%	0.00%	0.00%
14I2	96.29%	87.29%	33.56%	7.81%	88.53%	77.28%	5.48%	0.00%	73.05%	57.30%	0.00%	0.00%
14J2	96.29%	87.29%	33.56%	7.81%	88.53%	77.28%	5.48%	0.00%	73.05%	57.30%	0.00%	0.00%
14K2	96.29%	87.29%	33.56%	7.81%	88.53%	77.28%	5.48%	0.00%	73.05%	57.30%	0.00%	0.00%
14L2	95.74%	86.74%	33.43%	7.68%	87.79%	76.54%	5.30%	0.00%	71.93%	56.18%	0.00%	0.00%
14M2	95.74%	86.74%	33.43%	7.68%	87.79%	76.54%	5.30%	0.00%	71.93%	56.18%	0.00%	0.00%
14N2	95.74%	86.74%	33.43%	7.68%	87.79%	76.54%	5.30%	0.00%	71.93%	56.18%	0.00%	0.00%
14O2	95.60%	86.60%	33.40%	7.65%	87.60%	76.35%	5.25%	0.00%	71.65%	55.90%	0.00%	0.00%
14P2	95.60%	86.60%	33.40%	7.65%	87.60%	76.35%	5.25%	0.00%	71.65%	55.90%	0.00%	0.00%
14A3	96.08%	87.08%	33.51%	7.76%	88.25%	77.00%	5.41%	0.00%	72.63%	56.88%	0.00%	0.00%
14B3	96.08%	87.08%	33.51%	7.76%	88.25%	77.00%	5.41%	0.00%	72.63%	56.88%	0.00%	0.00%
14C3	96.24%	87.24%	33.55%	7.80%	88.47%	77.22%	5.46%	0.00%	72.95%	57.20%	0.00%	0.00%
14D3	96.20%	87.20%	33.54%	7.79%	88.42%	77.17%	5.45%	0.00%	72.88%	57.13%	0.00%	0.00%
14E3	95.93%	86.93%	33.47%	7.72%	88.04%	76.79%	5.36%	0.00%	72.32%	56.57%	0.00%	0.00%
14F3	95.93%	86.93%	33.47%	7.72%	88.04%	76.79%	5.36%	0.00%	72.32%	56.57%	0.00%	0.00%
14G3	95.93%	86.93%	33.47%	7.72%	88.04%	76.79%	5.36%	0.00%	72.31%	56.56%	0.00%	0.00%
14H3	95.89%	86.89%	33.47%	7.72%	88.00%	76.75%	5.35%	0.00%	72.24%	56.49%	0.00%	0.00%
14I3	95.29%	86.29%	33.32%	7.57%	87.19%	75.94%	5.15%	0.00%	71.04%	55.29%	0.00%	0.00%
14J3	95.29%	86.29%	33.32%	7.57%	87.19%	75.94%	5.15%	0.00%	71.04%	55.29%	0.00%	0.00%

14K3	95.14%	86.14%	33.29%	7.54%	86.98%	75.73%	5.09%	0.00%	70.72%	54.97%	0.00%	0.00%
14L3	95.14%	86.14%	33.29%	7.54%	86.98%	75.73%	5.10%	0.00%	70.72%	54.97%	0.00%	0.00%
14M3	94.99%	85.99%	33.26%	7.51%	86.78%	75.53%	5.05%	0.00%	70.41%	54.66%	0.00%	0.00%
14N3	94.99%	85.99%	33.26%	7.51%	86.78%	75.53%	5.05%	0.00%	70.41%	54.66%	0.00%	0.00%
14O3	94.35%	85.35%	33.10%	7.35%	85.92%	74.67%	4.84%	0.00%	69.13%	53.38%	0.00%	0.00%
14P3	94.35%	85.35%	33.10%	7.35%	85.92%	74.67%	4.84%	0.00%	69.13%	53.38%	0.00%	0.00%
15A1	97.39%	88.39%	33.65%	7.90%	90.03%	78.78%	5.61%	0.00%	75.29%	59.54%	0.00%	0.00%
15B1	97.39%	88.39%	33.65%	7.90%	90.03%	78.78%	5.61%	0.00%	75.29%	59.54%	0.00%	0.00%
15C1	97.39%	88.39%	33.64%	7.89%	90.02%	78.77%	5.61%	0.00%	75.28%	59.53%	0.00%	0.00%
15D1	97.39%	88.39%	33.64%	7.89%	90.02%	78.77%	5.61%	0.00%	75.29%	59.54%	0.00%	0.00%
15E1	97.26%	88.26%	33.61%	7.86%	89.85%	78.60%	5.56%	0.00%	75.03%	59.28%	0.00%	0.00%
15F1	97.26%	88.26%	33.61%	7.86%	89.85%	78.60%	5.56%	0.00%	75.03%	59.28%	0.00%	0.00%
15G1	97.26%	88.26%	33.61%	7.86%	89.85%	78.60%	5.56%	0.00%	75.03%	59.28%	0.00%	0.00%
15H1	97.26%	88.26%	33.61%	7.86%	89.85%	78.60%	5.56%	0.00%	75.02%	59.27%	0.00%	0.00%
15I1	96.89%	87.89%	33.51%	7.76%	89.34%	78.09%	5.42%	0.00%	74.26%	58.51%	0.00%	0.00%
15J1	96.89%	87.89%	33.51%	7.76%	89.34%	78.09%	5.42%	0.00%	74.26%	58.51%	0.00%	0.00%
15K1	96.88%	87.88%	33.51%	7.76%	89.34%	78.09%	5.42%	0.00%	74.26%	58.51%	0.00%	0.00%
15L1	96.88%	87.88%	33.51%	7.76%	89.34%	78.09%	5.42%	0.00%	74.26%	58.51%	0.00%	0.00%
15M1	96.38%	87.38%	33.38%	7.63%	88.66%	77.41%	5.24%	0.00%	73.24%	57.49%	0.00%	0.00%
15N1	96.38%	87.38%	33.38%	7.63%	88.66%	77.41%	5.24%	0.00%	73.24%	57.49%	0.00%	0.00%
15O1	96.38%	87.38%	33.37%	7.62%	88.66%	77.41%	5.23%	0.00%	73.24%	57.49%	0.00%	0.00%
15P1	96.38%	87.38%	33.37%	7.62%	88.66%	77.41%	5.23%	0.00%	73.23%	57.48%	0.00%	0.00%
15A2	97.02%	88.02%	33.55%	7.80%	89.53%	78.28%	5.47%	0.00%	74.54%	58.79%	0.00%	0.00%
15B2	97.02%	88.02%	33.55%	7.80%	89.53%	78.28%	5.47%	0.00%	74.54%	58.79%	0.00%	0.00%
15C2	96.88%	87.88%	33.51%	7.76%	89.33%	78.08%	5.42%	0.00%	74.24%	58.49%	0.00%	0.00%
15D2	96.44%	87.44%	33.39%	7.64%	88.73%	77.48%	5.25%	0.00%	73.35%	57.60%	0.00%	0.00%
15E2	96.73%	87.73%	33.47%	7.72%	89.13%	77.88%	5.36%	0.00%	73.94%	58.19%	0.00%	0.00%
15F2	96.73%	87.73%	33.47%	7.72%	89.13%	77.88%	5.36%	0.00%	73.94%	58.19%	0.00%	0.00%
15G2	96.44%	87.44%	33.39%	7.64%	88.74%	77.49%	5.25%	0.00%	73.35%	57.60%	0.00%	0.00%
15H2	96.00%	87.00%	33.27%	7.52%	88.14%	76.89%	5.09%	0.00%	72.46%	56.71%	0.00%	0.00%
15I2	96.14%	87.14%	33.31%	7.56%	88.34%	77.09%	5.14%	0.00%	72.76%	57.01%	0.00%	0.00%
15J2	96.14%	87.14%	33.31%	7.56%	88.34%	77.09%	5.14%	0.00%	72.76%	57.01%	0.00%	0.00%
15K2	96.15%	87.15%	33.31%	7.56%	88.35%	77.10%	5.15%	0.00%	72.77%	57.02%	0.00%	0.00%
15L2	96.13%	87.13%	33.30%	7.55%	88.31%	77.06%	5.13%	0.00%	72.72%	56.97%	0.00%	0.00%
15M2	95.72%	86.72%	33.20%	7.45%	87.76%	76.51%	4.99%	0.00%	71.89%	56.14%	0.00%	0.00%
15N2	95.72%	86.72%	33.20%	7.45%	87.76%	76.51%	4.99%	0.00%	71.89%	56.14%	0.00%	0.00%
15O2	95.71%	86.71%	33.20%	7.45%	87.76%	76.51%	4.98%	0.00%	71.89%	56.14%	0.00%	0.00%
15P2	95.71%	86.71%	33.19%	7.44%	87.75%	76.50%	4.98%	0.00%	71.88%	56.13%	0.00%	0.00%
15A3	95.95%	86.95%	33.26%	7.51%	88.08%	76.83%	5.07%	0.00%	72.36%	56.61%	0.00%	0.00%
15B3	95.95%	86.95%	33.26%	7.51%	88.08%	76.83%	5.07%	0.00%	72.36%	56.61%	0.00%	0.00%

15C3	96.11%	87.11%	33.30%	7.55%	88.29%	77.04%	5.12%	0.00%	72.69%	56.94%	0.00%	0.00%
15D3	95.95%	86.95%	33.26%	7.51%	88.07%	76.82%	5.07%	0.00%	72.36%	56.61%	0.00%	0.00%
15E3	95.79%	86.79%	33.21%	7.46%	87.85%	76.60%	5.01%	0.00%	72.03%	56.28%	0.00%	0.00%
15F3	95.79%	86.79%	33.21%	7.46%	87.85%	76.60%	5.01%	0.00%	72.03%	56.28%	0.00%	0.00%
15G3	95.78%	86.78%	33.21%	7.46%	87.85%	76.60%	5.00%	0.00%	72.02%	56.27%	0.00%	0.00%
15H3	95.62%	86.62%	33.17%	7.42%	87.63%	76.38%	4.94%	0.00%	71.70%	55.95%	0.00%	0.00%
15I3	95.12%	86.12%	33.03%	7.28%	86.96%	75.71%	4.75%	0.00%	70.69%	54.94%	0.00%	0.00%
15J3	95.12%	86.12%	33.03%	7.28%	86.96%	75.71%	4.75%	0.00%	70.69%	54.94%	0.00%	0.00%
15K3	95.12%	86.12%	33.03%	7.28%	86.96%	75.71%	4.75%	0.00%	70.69%	54.94%	0.00%	0.00%
15L3	95.12%	86.12%	33.03%	7.28%	86.96%	75.71%	4.75%	0.00%	70.68%	54.93%	0.00%	0.00%
15M3	94.97%	85.97%	33.00%	7.25%	86.75%	75.50%	4.70%	0.00%	70.37%	54.62%	0.00%	0.00%
15N3	94.97%	85.97%	33.00%	7.25%	86.75%	75.50%	4.70%	0.00%	70.37%	54.62%	0.00%	0.00%
15O3	94.81%	85.81%	32.95%	7.20%	86.53%	75.28%	4.65%	0.00%	70.04%	54.29%	0.00%	0.00%
15P3	94.80%	85.80%	32.95%	7.20%	86.52%	75.27%	4.63%	0.00%	70.03%	54.28%	0.00%	0.00%
31A1	98.00%	89.00%	34.25%	8.50%	90.83%	79.58%	6.42%	0.00%	76.50%	60.75%	0.00%	0.00%
31B1	98.00%	89.00%	34.25%	8.50%	90.83%	79.58%	6.42%	0.00%	76.50%	60.75%	0.00%	0.00%
31C1	98.00%	89.00%	34.25%	8.50%	90.83%	79.58%	6.42%	0.00%	76.50%	60.75%	0.00%	0.00%
31D1	98.00%	89.00%	34.25%	8.50%	90.83%	79.58%	6.42%	0.00%	76.50%	60.75%	0.00%	0.00%
31E1	97.59%	88.59%	34.21%	8.46%	90.29%	79.04%	6.36%	0.00%	75.68%	59.93%	0.00%	0.00%
31F1	97.59%	88.59%	34.21%	8.46%	90.29%	79.04%	6.36%	0.00%	75.68%	59.93%	0.00%	0.00%
31G1	97.59%	88.59%	34.21%	8.46%	90.29%	79.04%	6.36%	0.00%	75.68%	59.93%	0.00%	0.00%
31H1	97.59%	88.59%	34.21%	8.46%	90.29%	79.04%	6.36%	0.00%	75.68%	59.93%	0.00%	0.00%
31I1	96.77%	87.77%	34.14%	8.39%	89.19%	77.94%	6.26%	0.00%	74.04%	58.29%	0.00%	0.00%
31J1	96.77%	87.77%	34.14%	8.39%	89.19%	77.94%	6.26%	0.00%	74.04%	58.29%	0.00%	0.00%
31K1	96.77%	87.77%	34.14%	8.39%	89.19%	77.94%	6.26%	0.00%	74.04%	58.29%	0.00%	0.00%
31L1	96.77%	87.77%	34.14%	8.39%	89.19%	77.94%	6.26%	0.00%	74.04%	58.29%	0.00%	0.00%
31M1	95.75%	86.75%	34.04%	8.29%	87.83%	76.58%	6.13%	0.00%	71.99%	56.24%	0.00%	0.00%
31N1	95.75%	86.75%	34.04%	8.29%	87.83%	76.58%	6.13%	0.00%	71.99%	56.24%	0.00%	0.00%
31O1	95.75%	86.75%	34.04%	8.29%	87.83%	76.58%	6.13%	0.00%	71.99%	56.24%	0.00%	0.00%
31P1	95.75%	86.75%	34.04%	8.29%	87.83%	76.58%	6.13%	0.00%	71.99%	56.24%	0.00%	0.00%
31A2	97.40%	88.40%	34.19%	8.44%	90.03%	78.78%	6.34%	0.00%	75.29%	59.54%	0.00%	0.00%
31B2	97.40%	88.40%	34.19%	8.44%	90.03%	78.78%	6.34%	0.00%	75.29%	59.54%	0.00%	0.00%
31C2	97.05%	88.05%	34.16%	8.41%	89.55%	78.30%	6.29%	0.00%	74.58%	58.83%	0.00%	0.00%
31D2	97.05%	88.05%	34.16%	8.41%	89.55%	78.30%	6.29%	0.00%	74.58%	58.83%	0.00%	0.00%
31E2	97.05%	88.05%	34.16%	8.41%	89.55%	78.30%	6.29%	0.00%	74.58%	58.83%	0.00%	0.00%
31F2	97.05%	88.05%	34.16%	8.41%	89.55%	78.30%	6.29%	0.00%	74.58%	58.83%	0.00%	0.00%
31G2	96.69%	87.69%	34.13%	8.38%	89.08%	77.83%	6.25%	0.00%	73.87%	58.12%	0.00%	0.00%
31H2	96.69%	87.69%	34.13%	8.38%	89.08%	77.83%	6.25%	0.00%	73.87%	58.12%	0.00%	0.00%
31I2	95.99%	86.99%	34.06%	8.31%	88.14%	76.89%	6.16%	0.00%	72.46%	56.71%	0.00%	0.00%
31J2	95.99%	86.99%	34.06%	8.31%	88.14%	76.89%	6.16%	0.00%	72.46%	56.71%	0.00%	0.00%

31K2	96.22%	87.22%	34.08%	8.33%	88.45%	77.20%	6.19%	0.00%	72.93%	57.18%	0.00%	0.00%
31L2	96.22%	87.22%	34.08%	8.33%	88.45%	77.20%	6.19%	0.00%	72.93%	57.18%	0.00%	0.00%
31M2	95.24%	86.24%	33.99%	8.24%	87.14%	75.89%	6.06%	0.00%	70.96%	55.21%	0.00%	0.00%
31N2	95.24%	86.24%	33.99%	8.24%	87.14%	75.89%	6.06%	0.00%	70.96%	55.21%	0.00%	0.00%
31O2	95.24%	86.24%	33.99%	8.24%	87.14%	75.89%	6.06%	0.00%	70.96%	55.21%	0.00%	0.00%
31P2	95.24%	86.24%	33.99%	8.24%	87.14%	75.89%	6.06%	0.00%	70.96%	55.21%	0.00%	0.00%
31A3	96.20%	87.20%	34.08%	8.33%	88.43%	77.18%	6.18%	0.00%	72.89%	57.14%	0.00%	0.00%
31B3	96.20%	87.20%	34.08%	8.33%	88.43%	77.18%	6.18%	0.00%	72.89%	57.14%	0.00%	0.00%
31C3	95.41%	86.41%	34.01%	8.26%	87.36%	76.11%	6.08%	0.00%	71.29%	55.54%	0.00%	0.00%
31D3	95.41%	86.41%	34.01%	8.26%	87.36%	76.11%	6.08%	0.00%	71.29%	55.54%	0.00%	0.00%
31E3	96.20%	87.20%	34.08%	8.33%	88.43%	77.18%	6.18%	0.00%	72.89%	57.14%	0.00%	0.00%
31F3	96.20%	87.20%	34.08%	8.33%	88.43%	77.18%	6.18%	0.00%	72.89%	57.14%	0.00%	0.00%
31G3	95.27%	86.27%	34.00%	8.25%	87.18%	75.93%	6.06%	0.00%	71.03%	55.28%	0.00%	0.00%
31H3	95.27%	86.27%	34.00%	8.25%	87.18%	75.93%	6.06%	0.00%	71.03%	55.28%	0.00%	0.00%
31I3	95.24%	86.24%	33.99%	8.24%	87.14%	75.89%	6.06%	0.00%	70.96%	55.21%	0.00%	0.00%
31J3	95.24%	86.24%	33.99%	8.24%	87.14%	75.89%	6.06%	0.00%	70.96%	55.21%	0.00%	0.00%
31K3	95.24%	86.24%	33.99%	8.24%	87.14%	75.89%	6.06%	0.00%	70.96%	55.21%	0.00%	0.00%
31L3	95.24%	86.24%	33.99%	8.24%	87.14%	75.89%	6.06%	0.00%	70.96%	55.21%	0.00%	0.00%
31M3	95.24%	86.24%	33.99%	8.24%	87.14%	75.89%	6.06%	0.00%	70.96%	55.21%	0.00%	0.00%
31N3	95.24%	86.24%	33.99%	8.24%	87.14%	75.89%	6.06%	0.00%	70.96%	55.21%	0.00%	0.00%
31O3	95.24%	86.24%	33.99%	8.24%	87.14%	75.89%	6.06%	0.00%	70.96%	55.21%	0.00%	0.00%
31P3	95.24%	86.24%	33.99%	8.24%	87.14%	75.89%	6.06%	0.00%	70.96%	55.21%	0.00%	0.00%
32A1	97.93%	88.93%	34.18%	8.43%	90.75%	79.50%	6.33%	0.00%	76.37%	60.62%	0.00%	0.00%
32B1	97.93%	88.93%	34.18%	8.43%	90.75%	79.50%	6.33%	0.00%	76.37%	60.62%	0.00%	0.00%
32C1	97.93%	88.93%	34.18%	8.43%	90.75%	79.50%	6.33%	0.00%	76.37%	60.62%	0.00%	0.00%
32D1	97.93%	88.93%	34.18%	8.43%	90.75%	79.50%	6.33%	0.00%	76.37%	60.62%	0.00%	0.00%
32E1	97.83%	88.83%	34.18%	8.43%	90.61%	79.36%	6.32%	0.00%	76.16%	60.41%	0.00%	0.00%
32F1	97.83%	88.83%	34.18%	8.43%	90.61%	79.36%	6.32%	0.00%	76.16%	60.41%	0.00%	0.00%
32G1	97.83%	88.83%	34.18%	8.43%	90.61%	79.36%	6.32%	0.00%	76.16%	60.41%	0.00%	0.00%
32H1	97.83%	88.83%	34.17%	8.42%	90.61%	79.36%	6.32%	0.00%	76.16%	60.41%	0.00%	0.00%
32I1	96.71%	87.71%	34.07%	8.32%	89.11%	77.86%	6.17%	0.00%	73.91%	58.16%	0.00%	0.00%
32J1	96.71%	87.71%	34.07%	8.32%	89.11%	77.86%	6.17%	0.00%	73.91%	58.16%	0.00%	0.00%
32K1	96.71%	87.71%	34.07%	8.32%	89.11%	77.86%	6.17%	0.00%	73.91%	58.16%	0.00%	0.00%
32L1	96.71%	87.71%	34.07%	8.32%	89.11%	77.86%	6.17%	0.00%	73.91%	58.16%	0.00%	0.00%
32M1	95.69%	86.69%	33.98%	8.23%	87.74%	76.49%	6.04%	0.00%	71.86%	56.11%	0.00%	0.00%
32N1	95.69%	86.69%	33.98%	8.23%	87.74%	76.49%	6.04%	0.00%	71.86%	56.11%	0.00%	0.00%
32O1	95.69%	86.69%	33.98%	8.23%	87.74%	76.49%	6.04%	0.00%	71.86%	56.11%	0.00%	0.00%
32P1	95.69%	86.69%	33.98%	8.23%	87.74%	76.49%	6.04%	0.00%	71.86%	56.11%	0.00%	0.00%
32A2	97.21%	88.21%	34.12%	8.37%	89.78%	78.53%	6.24%	0.00%	74.92%	59.17%	0.00%	0.00%
32B2	97.21%	88.21%	34.12%	8.37%	89.78%	78.53%	6.24%	0.00%	74.92%	59.17%	0.00%	0.00%

32C2	96.98%	87.98%	34.10%	8.35%	89.47%	78.22%	6.21%	0.00%	74.45%	58.70%	0.00%	0.00%
32D2	96.85%	87.85%	34.08%	8.33%	89.29%	78.04%	6.19%	0.00%	74.18%	58.43%	0.00%	0.00%
32E2	96.98%	87.98%	34.10%	8.35%	89.47%	78.22%	6.21%	0.00%	74.45%	58.70%	0.00%	0.00%
32F2	96.98%	87.98%	34.10%	8.35%	89.47%	78.22%	6.21%	0.00%	74.45%	58.70%	0.00%	0.00%
32G2	96.74%	87.74%	34.07%	8.32%	89.15%	77.90%	6.18%	0.00%	73.98%	58.23%	0.00%	0.00%
32H2	96.73%	87.73%	34.07%	8.32%	89.13%	77.88%	6.17%	0.00%	73.95%	58.20%	0.00%	0.00%
32I2	95.92%	86.92%	34.00%	8.25%	88.05%	76.80%	6.07%	0.00%	72.33%	56.58%	0.00%	0.00%
32J2	95.92%	86.92%	34.00%	8.25%	88.05%	76.80%	6.07%	0.00%	72.33%	56.58%	0.00%	0.00%
32K2	96.74%	87.74%	34.07%	8.32%	89.15%	77.90%	6.18%	0.00%	73.98%	58.23%	0.00%	0.00%
32L2	96.73%	87.73%	34.07%	8.32%	89.13%	77.88%	6.17%	0.00%	73.95%	58.20%	0.00%	0.00%
32M2	95.18%	86.18%	33.93%	8.18%	87.05%	75.80%	5.97%	0.00%	70.83%	55.08%	0.00%	0.00%
32N2	95.18%	86.18%	33.93%	8.18%	87.05%	75.80%	5.97%	0.00%	70.83%	55.08%	0.00%	0.00%
32O2	95.18%	86.18%	33.93%	8.18%	87.05%	75.80%	5.97%	0.00%	70.83%	55.08%	0.00%	0.00%
32P2	95.18%	86.18%	33.93%	8.18%	87.05%	75.80%	5.97%	0.00%	70.83%	55.08%	0.00%	0.00%
32A3	96.00%	87.00%	34.01%	8.26%	88.16%	76.91%	6.08%	0.00%	72.49%	56.74%	0.00%	0.00%
32B3	96.00%	87.00%	34.01%	8.26%	88.16%	76.91%	6.08%	0.00%	72.49%	56.74%	0.00%	0.00%
32C3	95.87%	86.87%	33.99%	8.24%	87.98%	76.73%	6.06%	0.00%	72.22%	56.47%	0.00%	0.00%
32D3	95.44%	86.44%	33.95%	8.20%	87.41%	76.16%	6.01%	0.00%	71.36%	55.61%	0.00%	0.00%
32E3	95.87%	86.87%	33.99%	8.24%	87.98%	76.73%	6.06%	0.00%	72.23%	56.48%	0.00%	0.00%
32F3	95.87%	86.87%	33.99%	8.24%	87.98%	76.73%	6.06%	0.00%	72.23%	56.48%	0.00%	0.00%
32G3	95.61%	86.61%	33.97%	8.22%	87.63%	76.38%	6.03%	0.00%	71.69%	55.94%	0.00%	0.00%
32H3	95.44%	86.44%	33.95%	8.20%	87.41%	76.16%	6.01%	0.00%	71.36%	55.61%	0.00%	0.00%
32I3	95.18%	86.18%	33.93%	8.18%	87.05%	75.80%	5.97%	0.00%	70.83%	55.08%	0.00%	0.00%
32J3	95.18%	86.18%	33.93%	8.18%	87.05%	75.80%	5.97%	0.00%	70.83%	55.08%	0.00%	0.00%
32K3	95.21%	86.21%	33.93%	8.18%	87.09%	75.84%	5.98%	0.00%	70.89%	55.14%	0.00%	0.00%
32L3	95.18%	86.18%	33.93%	8.18%	87.05%	75.80%	5.97%	0.00%	70.83%	55.08%	0.00%	0.00%
32M3	95.18%	86.18%	33.93%	8.18%	87.05%	75.80%	5.97%	0.00%	70.83%	55.08%	0.00%	0.00%
32N3	95.18%	86.18%	33.93%	8.18%	87.05%	75.80%	5.97%	0.00%	70.83%	55.08%	0.00%	0.00%
32O3	95.18%	86.18%	33.93%	8.18%	87.05%	75.80%	5.97%	0.00%	70.83%	55.08%	0.00%	0.00%
32P3	95.18%	86.18%	33.93%	8.18%	87.05%	75.80%	5.97%	0.00%	70.83%	55.08%	0.00%	0.00%
33A1	97.29%	88.29%	33.91%	8.16%	89.88%	78.63%	5.96%	0.00%	75.07%	59.32%	0.00%	0.00%
33B1	97.29%	88.29%	33.91%	8.16%	89.88%	78.63%	5.96%	0.00%	75.07%	59.32%	0.00%	0.00%
33C1	97.40%	88.40%	33.93%	8.18%	90.03%	78.78%	5.99%	0.00%	75.30%	59.55%	0.00%	0.00%
33D1	97.40%	88.40%	33.93%	8.18%	90.03%	78.78%	5.99%	0.00%	75.30%	59.55%	0.00%	0.00%
33E1	97.18%	88.18%	33.89%	8.14%	89.73%	78.48%	5.94%	0.00%	74.85%	59.10%	0.00%	0.00%
33F1	97.18%	88.18%	33.89%	8.14%	89.73%	78.48%	5.94%	0.00%	74.85%	59.10%	0.00%	0.00%
33G1	97.18%	88.18%	33.89%	8.14%	89.73%	78.48%	5.93%	0.00%	74.85%	59.10%	0.00%	0.00%
33H1	97.18%	88.18%	33.89%	8.14%	89.73%	78.48%	5.93%	0.00%	74.85%	59.10%	0.00%	0.00%
33I1	96.51%	87.51%	33.78%	8.03%	88.83%	77.58%	5.78%	0.00%	73.50%	57.75%	0.00%	0.00%
33J1	96.51%	87.51%	33.78%	8.03%	88.83%	77.58%	5.78%	0.00%	73.50%	57.75%	0.00%	0.00%

33K1	96.40%	87.40%	33.76%	8.01%	88.68%	77.43%	5.75%	0.00%	73.28%	57.53%	0.00%	0.00%
33L1	96.40%	87.40%	33.76%	8.01%	88.68%	77.43%	5.75%	0.00%	73.28%	57.53%	0.00%	0.00%
33M1	95.39%	86.39%	33.59%	7.84%	87.33%	76.08%	5.51%	0.00%	71.25%	55.50%	0.00%	0.00%
33N1	95.39%	86.39%	33.59%	7.84%	87.33%	76.08%	5.51%	0.00%	71.25%	55.50%	0.00%	0.00%
33O1	95.39%	86.39%	33.59%	7.84%	87.33%	76.08%	5.51%	0.00%	71.25%	55.50%	0.00%	0.00%
33P1	95.39%	86.39%	33.59%	7.84%	87.33%	76.08%	5.51%	0.00%	71.25%	55.50%	0.00%	0.00%
33A2	96.90%	87.90%	33.85%	8.10%	89.36%	78.11%	5.87%	0.00%	74.29%	58.54%	0.00%	0.00%
33B2	96.90%	87.90%	33.85%	8.10%	89.36%	78.11%	5.87%	0.00%	74.29%	58.54%	0.00%	0.00%
33C2	96.55%	87.55%	33.78%	8.03%	88.88%	77.63%	5.78%	0.00%	73.58%	57.83%	0.00%	0.00%
33D2	96.42%	87.42%	33.76%	8.01%	88.71%	77.46%	5.75%	0.00%	73.32%	57.57%	0.00%	0.00%
33E2	96.77%	87.77%	33.82%	8.07%	89.19%	77.94%	5.84%	0.00%	74.03%	58.28%	0.00%	0.00%
33F2	96.77%	87.77%	33.82%	8.07%	89.19%	77.94%	5.84%	0.00%	74.03%	58.28%	0.00%	0.00%
33G2	96.16%	87.16%	33.72%	7.97%	88.37%	77.12%	5.69%	0.00%	72.80%	57.05%	0.00%	0.00%
33H2	96.29%	87.29%	33.74%	7.99%	88.54%	77.29%	5.72%	0.00%	73.06%	57.31%	0.00%	0.00%
33I2	95.49%	86.49%	33.61%	7.86%	87.46%	76.21%	5.53%	0.00%	71.44%	55.69%	0.00%	0.00%
33J2	95.49%	86.49%	33.61%	7.86%	87.46%	76.21%	5.53%	0.00%	71.44%	55.69%	0.00%	0.00%
33K2	96.16%	87.16%	33.72%	7.97%	88.37%	77.12%	5.69%	0.00%	72.80%	57.05%	0.00%	0.00%
33L2	96.29%	87.29%	33.74%	7.99%	88.54%	77.29%	5.72%	0.00%	73.06%	57.31%	0.00%	0.00%
33M2	94.72%	85.72%	33.47%	7.72%	86.43%	75.18%	5.35%	0.00%	69.90%	54.15%	0.00%	0.00%
33N2	94.72%	85.72%	33.47%	7.72%	86.43%	75.18%	5.35%	0.00%	69.90%	54.15%	0.00%	0.00%
33O2	94.72%	85.72%	33.48%	7.73%	86.43%	75.18%	5.35%	0.00%	69.90%	54.15%	0.00%	0.00%
33P2	94.72%	85.72%	33.48%	7.73%	86.43%	75.18%	5.35%	0.00%	69.90%	54.15%	0.00%	0.00%
33A3	94.72%	85.72%	33.47%	7.72%	86.43%	75.18%	5.35%	0.00%	69.90%	54.15%	0.00%	0.00%
33B3	94.72%	85.72%	33.47%	7.72%	86.43%	75.18%	5.35%	0.00%	69.90%	54.15%	0.00%	0.00%
33C3	94.72%	85.72%	33.48%	7.73%	86.43%	75.18%	5.35%	0.00%	69.90%	54.15%	0.00%	0.00%
33D3	94.72%	85.72%	33.48%	7.73%	86.43%	75.18%	5.35%	0.00%	69.90%	54.15%	0.00%	0.00%
33E3	96.14%	87.14%	33.72%	7.97%	88.34%	77.09%	5.69%	0.00%	72.76%	57.01%	0.00%	0.00%
33F3	96.14%	87.14%	33.72%	7.97%	88.34%	77.09%	5.69%	0.00%	72.76%	57.01%	0.00%	0.00%
33G3	95.12%	86.12%	33.54%	7.79%	86.97%	75.72%	5.44%	0.00%	70.71%	54.96%	0.00%	0.00%
33H3	94.98%	85.98%	33.52%	7.77%	86.77%	75.52%	5.41%	0.00%	70.41%	54.66%	0.00%	0.00%
33I3	94.73%	85.73%	33.48%	7.73%	86.43%	75.18%	5.35%	0.00%	69.90%	54.15%	0.00%	0.00%
33J3	94.73%	85.73%	33.48%	7.73%	86.43%	75.18%	5.35%	0.00%	69.90%	54.15%	0.00%	0.00%
33K3	94.83%	85.83%	33.49%	7.74%	86.58%	75.33%	5.37%	0.00%	70.12%	54.37%	0.00%	0.00%
33L3	94.83%	85.83%	33.49%	7.74%	86.58%	75.33%	5.37%	0.00%	70.12%	54.37%	0.00%	0.00%
33M3	94.72%	85.72%	33.47%	7.72%	86.43%	75.18%	5.35%	0.00%	69.90%	54.15%	0.00%	0.00%
33N3	94.72%	85.72%	33.47%	7.72%	86.43%	75.18%	5.35%	0.00%	69.90%	54.15%	0.00%	0.00%
33O3	94.72%	85.72%	33.48%	7.73%	86.43%	75.18%	5.35%	0.00%	69.90%	54.15%	0.00%	0.00%
33P3	94.72%	85.72%	33.48%	7.73%	86.43%	75.18%	5.35%	0.00%	69.90%	54.15%	0.00%	0.00%
34A1	97.41%	88.41%	33.66%	7.91%	90.05%	78.80%	5.64%	0.00%	75.32%	59.57%	0.00%	0.00%
34B1	97.41%	88.41%	33.66%	7.91%	90.05%	78.80%	5.64%	0.00%	75.32%	59.57%	0.00%	0.00%

34C1	97.41%	88.41%	33.66%	7.91%	90.05%	78.80%	5.64%	0.00%	75.33%	59.58%	0.00%	0.00%
34D1	97.41%	88.41%	33.67%	7.92%	90.05%	78.80%	5.64%	0.00%	75.33%	59.58%	0.00%	0.00%
34E1	97.41%	88.41%	33.66%	7.91%	90.05%	78.80%	5.64%	0.00%	75.32%	59.57%	0.00%	0.00%
34F1	97.41%	88.41%	33.66%	7.91%	90.05%	78.80%	5.64%	0.00%	75.32%	59.57%	0.00%	0.00%
34G1	97.41%	88.41%	33.67%	7.92%	90.05%	78.80%	5.64%	0.00%	75.33%	59.58%	0.00%	0.00%
34H1	97.41%	88.41%	33.67%	7.92%	90.05%	78.80%	5.64%	0.00%	75.33%	59.58%	0.00%	0.00%
34I1	96.57%	87.57%	33.47%	7.72%	88.91%	77.66%	5.36%	0.00%	73.61%	57.86%	0.00%	0.00%
34J1	96.57%	87.57%	33.47%	7.72%	88.91%	77.66%	5.36%	0.00%	73.61%	57.86%	0.00%	0.00%
34K1	96.69%	87.69%	33.49%	7.74%	89.07%	77.82%	5.40%	0.00%	73.86%	58.11%	0.00%	0.00%
34L1	96.68%	87.68%	33.49%	7.74%	89.07%	77.82%	5.40%	0.00%	73.85%	58.10%	0.00%	0.00%
34M1	95.60%	86.60%	33.24%	7.49%	87.61%	76.36%	5.04%	0.00%	71.66%	55.91%	0.00%	0.00%
34N1	95.60%	86.60%	33.24%	7.49%	87.61%	76.36%	5.04%	0.00%	71.66%	55.91%	0.00%	0.00%
34O1	95.72%	86.72%	33.27%	7.52%	87.77%	76.52%	5.08%	0.00%	71.91%	56.16%	0.00%	0.00%
34P1	95.47%	86.47%	33.21%	7.46%	87.44%	76.19%	5.00%	0.00%	71.41%	55.66%	0.00%	0.00%
34A2	96.36%	87.36%	33.42%	7.67%	88.64%	77.39%	5.29%	0.00%	73.21%	57.46%	0.00%	0.00%
34B2	96.36%	87.36%	33.42%	7.67%	88.64%	77.39%	5.29%	0.00%	73.21%	57.46%	0.00%	0.00%
34C2	95.83%	86.83%	33.29%	7.54%	87.91%	76.66%	5.11%	0.00%	72.11%	56.36%	0.00%	0.00%
34D2	95.82%	86.82%	33.28%	7.53%	87.90%	76.65%	5.11%	0.00%	72.10%	56.35%	0.00%	0.00%
34E2	96.22%	87.22%	33.38%	7.63%	88.45%	77.20%	5.24%	0.00%	72.92%	57.17%	0.00%	0.00%
34F2	96.22%	87.22%	33.38%	7.63%	88.45%	77.20%	5.24%	0.00%	72.92%	57.17%	0.00%	0.00%
34G2	95.69%	86.69%	33.26%	7.51%	87.72%	76.47%	5.07%	0.00%	71.83%	56.08%	0.00%	0.00%
34H2	95.82%	86.82%	33.28%	7.53%	87.90%	76.65%	5.11%	0.00%	72.10%	56.35%	0.00%	0.00%
34I2	95.16%	86.16%	33.13%	7.38%	87.02%	75.77%	4.89%	0.00%	70.78%	55.03%	0.00%	0.00%
34J2	95.16%	86.16%	33.13%	7.38%	87.02%	75.77%	4.89%	0.00%	70.78%	55.03%	0.00%	0.00%
34K2	95.41%	86.41%	33.19%	7.44%	87.34%	76.09%	4.97%	0.00%	71.27%	55.52%	0.00%	0.00%
34L2	94.45%	85.45%	32.97%	7.22%	86.06%	74.81%	4.66%	0.00%	69.34%	53.59%	0.00%	0.00%
34M2	94.45%	85.45%	32.97%	7.22%	86.06%	74.81%	4.66%	0.00%	69.34%	53.59%	0.00%	0.00%
34N2	94.45%	85.45%	32.97%	7.22%	86.06%	74.81%	4.66%	0.00%	69.34%	53.59%	0.00%	0.00%
34O2	94.14%	85.14%	32.89%	7.14%	85.64%	74.39%	4.56%	0.00%	68.71%	52.96%	0.00%	0.00%
34P2	94.18%	85.18%	32.91%	7.16%	85.69%	74.44%	4.58%	0.00%	68.78%	53.03%	0.00%	0.00%
34A3	95.85%	86.85%	33.30%	7.55%	87.95%	76.70%	5.12%	0.00%	72.17%	56.42%	0.00%	0.00%
34B3	95.85%	86.85%	33.30%	7.55%	87.95%	76.70%	5.12%	0.00%	72.17%	56.42%	0.00%	0.00%
34C3	94.54%	85.54%	32.99%	7.24%	86.18%	74.93%	4.69%	0.00%	69.52%	53.77%	0.00%	0.00%
34D3	94.58%	85.58%	33.00%	7.25%	86.23%	74.98%	4.70%	0.00%	69.59%	53.84%	0.00%	0.00%
34E3	95.69%	86.69%	33.26%	7.51%	87.73%	76.48%	5.07%	0.00%	71.85%	56.10%	0.00%	0.00%
34F3	95.69%	86.69%	33.26%	7.51%	87.73%	76.48%	5.07%	0.00%	71.85%	56.10%	0.00%	0.00%
34G3	94.54%	85.54%	32.99%	7.24%	86.18%	74.93%	4.69%	0.00%	69.52%	53.77%	0.00%	0.00%
34H3	94.42%	85.42%	32.96%	7.21%	86.02%	74.77%	4.65%	0.00%	69.27%	53.52%	0.00%	0.00%
34I3	94.33%	85.33%	32.94%	7.19%	85.90%	74.65%	4.62%	0.00%	69.10%	53.35%	0.00%	0.00%
34J3	94.33%	85.33%	32.94%	7.19%	85.90%	74.65%	4.62%	0.00%	69.10%	53.35%	0.00%	0.00%

34K3	94.54%	85.54%	32.99%	7.24%	86.18%	74.93%	4.69%	0.00%	69.52%	53.77%	0.00%	0.00%
34L3	94.42%	85.42%	32.96%	7.21%	86.02%	74.77%	4.65%	0.00%	69.27%	53.52%	0.00%	0.00%
34M3	94.14%	85.14%	32.90%	7.15%	85.64%	74.39%	4.56%	0.00%	68.72%	52.97%	0.00%	0.00%
34N3	94.14%	85.14%	32.90%	7.15%	85.64%	74.39%	4.56%	0.00%	68.72%	52.97%	0.00%	0.00%
34O3	94.14%	85.14%	32.89%	7.14%	85.64%	74.39%	4.56%	0.00%	68.71%	52.96%	0.00%	0.00%
34P3	94.15%	85.15%	32.90%	7.15%	85.65%	74.40%	4.57%	0.00%	68.72%	52.97%	0.00%	0.00%
35A1	97.07%	88.07%	33.32%	7.57%	89.59%	78.34%	5.18%	0.00%	74.63%	58.88%	0.00%	0.00%
35B1	97.07%	88.07%	33.32%	7.57%	89.59%	78.34%	5.18%	0.00%	74.63%	58.88%	0.00%	0.00%
35C1	97.07%	88.07%	33.32%	7.57%	89.59%	78.34%	5.17%	0.00%	74.63%	58.88%	0.00%	0.00%
35D1	97.07%	88.07%	33.32%	7.57%	89.59%	78.34%	5.18%	0.00%	74.64%	58.89%	0.00%	0.00%
35E1	97.06%	88.06%	33.32%	7.57%	89.59%	78.34%	5.17%	0.00%	74.63%	58.88%	0.00%	0.00%
35F1	97.06%	88.06%	33.32%	7.57%	89.59%	78.34%	5.17%	0.00%	74.63%	58.88%	0.00%	0.00%
35G1	97.07%	88.07%	33.32%	7.57%	89.59%	78.34%	5.17%	0.00%	74.63%	58.88%	0.00%	0.00%
35H1	97.07%	88.07%	33.32%	7.57%	89.59%	78.34%	5.18%	0.00%	74.64%	58.89%	0.00%	0.00%
35I1	97.07%	88.07%	33.33%	7.58%	89.60%	78.35%	5.18%	0.00%	74.65%	58.90%	0.00%	0.00%
35J1	97.07%	88.07%	33.33%	7.58%	89.60%	78.35%	5.18%	0.00%	74.65%	58.90%	0.00%	0.00%
35K1	97.07%	88.07%	33.33%	7.58%	89.60%	78.35%	5.18%	0.00%	74.65%	58.90%	0.00%	0.00%
35L1	97.07%	88.07%	33.32%	7.57%	89.60%	78.35%	5.18%	0.00%	74.64%	58.89%	0.00%	0.00%
35M1	96.70%	87.70%	33.23%	7.48%	89.09%	77.84%	5.05%	0.00%	73.89%	58.14%	0.00%	0.00%
35N1	96.70%	87.70%	33.23%	7.48%	89.09%	77.84%	5.05%	0.00%	73.89%	58.14%	0.00%	0.00%
35O1	96.70%	87.70%	33.23%	7.48%	89.09%	77.84%	5.05%	0.00%	73.89%	58.14%	0.00%	0.00%
35P1	96.70%	87.70%	33.23%	7.48%	89.09%	77.84%	5.05%	0.00%	73.89%	58.14%	0.00%	0.00%
35A2	96.90%	87.90%	33.27%	7.52%	89.37%	78.12%	5.11%	0.00%	74.30%	58.55%	0.00%	0.00%
35B2	96.90%	87.90%	33.27%	7.52%	89.37%	78.12%	5.11%	0.00%	74.30%	58.55%	0.00%	0.00%
35C2	96.90%	87.90%	33.28%	7.53%	89.37%	78.12%	5.12%	0.00%	74.30%	58.55%	0.00%	0.00%
35D2	96.76%	87.76%	33.24%	7.49%	89.17%	77.92%	5.06%	0.00%	74.01%	58.26%	0.00%	0.00%
35E2	96.76%	87.76%	33.24%	7.49%	89.17%	77.92%	5.06%	0.00%	74.01%	58.26%	0.00%	0.00%
35F2	96.76%	87.76%	33.24%	7.49%	89.17%	77.92%	5.06%	0.00%	74.01%	58.26%	0.00%	0.00%
35G2	96.90%	87.90%	33.28%	7.53%	89.37%	78.12%	5.12%	0.00%	74.30%	58.55%	0.00%	0.00%
35H2	96.76%	87.76%	33.24%	7.49%	89.18%	77.93%	5.07%	0.00%	74.02%	58.27%	0.00%	0.00%
35I2	96.33%	87.33%	33.13%	7.38%	88.59%	77.34%	4.90%	0.00%	73.13%	57.38%	0.00%	0.00%
35J2	96.33%	87.33%	33.13%	7.38%	88.59%	77.34%	4.90%	0.00%	73.13%	57.38%	0.00%	0.00%
35K2	96.61%	87.61%	33.20%	7.45%	88.98%	77.73%	5.01%	0.00%	73.72%	57.97%	0.00%	0.00%
35L2	96.62%	87.62%	33.20%	7.45%	88.98%	77.73%	5.02%	0.00%	73.73%	57.98%	0.00%	0.00%
35M2	96.19%	87.19%	33.10%	7.35%	88.41%	77.16%	4.86%	0.00%	72.86%	57.11%	0.00%	0.00%
35N2	96.19%	87.19%	33.10%	7.35%	88.41%	77.16%	4.86%	0.00%	72.86%	57.11%	0.00%	0.00%
35O2	96.19%	87.19%	33.09%	7.34%	88.40%	77.15%	4.86%	0.00%	72.86%	57.11%	0.00%	0.00%
35P2	96.19%	87.19%	33.10%	7.35%	88.41%	77.16%	4.86%	0.00%	72.86%	57.11%	0.00%	0.00%
35A3	96.28%	87.28%	33.11%	7.36%	88.53%	77.28%	4.88%	0.00%	73.04%	57.29%	0.00%	0.00%
35B3	96.28%	87.28%	33.11%	7.36%	88.53%	77.28%	4.88%	0.00%	73.04%	57.29%	0.00%	0.00%

35C3	95.67%	86.67%	32.95%	7.20%	87.70%	76.45%	4.66%	0.00%	71.80%	56.05%	0.00%	0.00%
35D3	95.67%	86.67%	32.95%	7.20%	87.70%	76.45%	4.66%	0.00%	71.80%	56.05%	0.00%	0.00%
35E3	96.12%	87.12%	33.07%	7.32%	88.31%	77.06%	4.82%	0.00%	72.72%	56.97%	0.00%	0.00%
35F3	96.12%	87.12%	33.07%	7.32%	88.31%	77.06%	4.82%	0.00%	72.72%	56.97%	0.00%	0.00%
35G3	95.66%	86.66%	32.94%	7.19%	87.69%	76.44%	4.65%	0.00%	71.79%	56.04%	0.00%	0.00%
35H3	95.67%	86.67%	32.95%	7.20%	87.70%	76.45%	4.66%	0.00%	71.80%	56.05%	0.00%	0.00%
35I3	95.67%	86.67%	32.95%	7.20%	87.71%	76.46%	4.66%	0.00%	71.81%	56.06%	0.00%	0.00%
35J3	95.67%	86.67%	32.95%	7.20%	87.71%	76.46%	4.66%	0.00%	71.81%	56.06%	0.00%	0.00%
35K3	95.66%	86.66%	32.94%	7.19%	87.69%	76.44%	4.65%	0.00%	71.79%	56.04%	0.00%	0.00%
35L3	95.67%	86.67%	32.95%	7.20%	87.70%	76.45%	4.66%	0.00%	71.80%	56.05%	0.00%	0.00%
35M3	95.68%	86.68%	32.96%	7.21%	87.71%	76.46%	4.67%	0.00%	71.82%	56.07%	0.00%	0.00%
35N3	95.68%	86.68%	32.96%	7.21%	87.71%	76.46%	4.67%	0.00%	71.82%	56.07%	0.00%	0.00%
35O3	95.67%	86.67%	32.96%	7.21%	87.71%	76.46%	4.67%	0.00%	71.81%	56.06%	0.00%	0.00%
35P3	95.67%	86.67%	32.95%	7.20%	87.71%	76.46%	4.66%	0.00%	71.81%	56.06%	0.00%	0.00%

Table C.3. Experimental lost port revenue and average economic impact results

		Excellent - 100%	Fair - 75%	Poor - 50%
Experiment	**Loss of Port Revenue**	**Average Economic Impact**	**Average Economic Impact**	**Average Economic Impact**
21A1	$5,396,050	$170,251,087	$223,167,755	$262,751,084
21B1	$5,396,050	$170,251,087	$223,167,755	$262,751,084
21C1	$4,635,695	$170,251,079	$223,167,747	$262,751,077
21D1	$5,199,804	$170,251,077	$223,167,745	$262,751,075
21E1	$5,089,451	$170,474,146	$223,454,346	$263,161,133
21F1	$5,089,451	$170,474,146	$223,454,346	$263,161,133
21G1	$5,947,890	$170,474,144	$223,454,343	$263,161,130
21H1	$5,947,890	$170,474,144	$223,454,343	$263,161,130
21I1	$4,623,409	$172,927,847	$226,606,901	$267,671,712
21J1	$4,623,409	$172,927,847	$226,606,901	$267,671,712
21K1	$4,684,728	$172,927,851	$226,606,904	$267,671,716
21L1	$4,795,100	$172,927,850	$226,606,904	$267,671,715
21M1	$5,248,875	$174,043,178	$228,039,892	$269,721,988
21N1	$5,248,875	$174,043,178	$228,039,892	$269,721,988
21O1	$5,199,823	$174,043,174	$228,039,888	$269,721,984
21P1	$4,807,368	$174,043,169	$228,039,883	$269,721,978
21A2	$5,396,031	$172,102,511	$225,546,496	$266,154,517
21B2	$5,396,031	$172,102,511	$225,546,496	$266,154,517
21C2	$4,844,152	$172,615,558	$226,205,666	$267,097,638
21D2	$4,697,015	$172,872,086	$226,535,256	$267,569,203

21E2	$5,089,432	$172,359,030	$225,876,077	$266,626,073
21F2	$5,089,432	$172,359,030	$225,876,077	$266,626,073
21G2	$4,979,060	$172,872,085	$226,535,255	$267,569,202
21H2	$4,696,996	$173,128,607	$226,864,839	$268,040,761
21I2	$5,138,503	$174,411,221	$228,512,763	$270,398,562
21J2	$5,138,503	$174,411,221	$228,512,763	$270,398,562
21K2	$4,733,799	$174,667,749	$228,842,353	$270,870,127
21L2	$4,917,759	$174,667,748	$228,842,352	$270,870,126
21M2	$5,248,875	$175,180,805	$229,501,533	$271,813,258
21N2	$5,248,875	$175,180,805	$229,501,533	$271,813,258
21O2	$5,199,823	$175,180,801	$229,501,529	$271,813,254
21P2	$5,089,432	$175,437,323	$229,831,113	$272,284,813
21A3	$4,586,624	$174,868,521	$229,100,304	$271,239,189
21B3	$4,586,624	$174,868,521	$229,100,304	$271,239,189
21C3	$4,451,717	$175,738,472	$230,218,030	$272,838,397
21D3	$4,304,580	$176,028,455	$230,590,606	$273,371,466
21E3	$4,316,828	$175,448,493	$229,845,459	$272,305,333
21F3	$4,316,828	$175,448,493	$229,845,459	$272,305,333
21G3	$3,740,415	$176,273,824	$230,905,860	$273,822,523
21H3	$4,329,096	$176,273,825	$230,905,860	$273,822,524
21I3	$4,255,509	$176,273,824	$230,905,859	$273,822,522
21J3	$4,255,509	$176,273,824	$230,905,859	$273,822,522
21K3	$4,280,025	$176,273,829	$230,905,865	$273,822,528
21L3	$3,764,969	$176,273,830	$230,905,865	$273,822,529
21M3	$4,586,605	$176,273,819	$230,905,855	$273,822,518
21N3	$4,586,605	$176,273,819	$230,905,855	$273,822,518
21O3	$3,850,805	$176,273,814	$230,905,849	$273,822,513
21P3	$3,691,381	$176,273,810	$230,905,845	$273,822,509
22A1	$5,052,647	$170,465,816	$223,382,821	$262,966,825
22B1	$5,052,647	$170,465,816	$223,382,821	$262,966,825
22C1	$5,015,882	$170,464,603	$223,381,606	$262,965,606
22D1	$4,844,171	$170,465,585	$223,382,589	$262,966,593
22E1	$4,746,048	$170,464,920	$223,381,924	$262,965,926
22F1	$4,746,048	$170,464,920	$223,381,924	$262,965,926
22G1	$4,979,079	$170,463,852	$223,380,853	$262,964,852
22H1	$5,592,258	$170,466,076	$223,383,081	$262,967,086
22I1	$4,513,037	$172,919,000	$226,534,857	$267,476,885
22J1	$4,513,037	$172,919,000	$226,534,857	$267,476,885
22K1	$4,316,810	$172,919,173	$226,535,031	$267,477,059
22L1	$4,267,757	$172,918,364	$226,534,221	$267,476,246

22M1	$4,954,543	$174,257,846	$228,254,897	$269,937,667
22N1	$4,954,543	$174,257,846	$228,254,897	$269,937,667
22O1	$4,770,603	$174,257,788	$228,254,839	$269,937,609
22P1	$4,782,852	$174,257,701	$228,254,752	$269,937,522
22A2	$5,346,979	$171,289,910	$224,441,982	$264,482,773
22B2	$5,346,979	$171,289,910	$224,441,982	$264,482,773
22C2	$4,782,852	$171,802,380	$225,100,575	$265,425,314
22D2	$4,930,046	$171,804,431	$225,102,629	$265,427,375
22E2	$5,040,380	$171,545,539	$224,770,671	$264,953,434
22F2	$5,040,380	$171,545,539	$224,770,671	$264,953,434
22G2	$4,917,759	$172,059,539	$225,430,797	$265,897,514
22H2	$4,930,027	$172,060,463	$225,431,723	$265,898,442
22I2	$4,721,532	$174,112,479	$228,068,233	$269,670,755
22J2	$4,721,532	$174,112,479	$228,068,233	$269,670,755
22K2	$4,414,933	$174,369,464	$228,398,282	$270,142,780
22L2	$4,365,881	$174,368,713	$228,397,529	$270,142,026
22M2	$4,954,543	$175,395,472	$229,716,537	$272,028,936
22N2	$4,954,543	$175,395,472	$229,716,537	$272,028,936
22O2	$4,770,603	$175,395,414	$229,716,479	$272,028,878
22P2	$4,782,852	$175,395,327	$229,716,392	$272,028,791
22A3	$4,562,089	$175,151,170	$229,402,352	$271,578,952
22B3	$4,562,089	$175,151,170	$229,402,352	$271,578,952
22C3	$4,378,129	$175,218,349	$229,488,591	$271,702,229
22D3	$3,728,166	$175,218,147	$229,488,388	$271,702,026
22E3	$3,936,642	$175,731,801	$230,148,167	$272,645,757
22F3	$3,936,642	$175,731,801	$230,148,167	$272,645,757
22G3	$3,580,991	$175,798,518	$230,233,943	$272,768,570
22H3	$3,666,846	$175,508,304	$229,861,137	$272,235,269
22I3	$3,985,694	$176,490,247	$231,122,623	$274,039,966
22J3	$3,985,694	$176,490,247	$231,122,623	$274,039,966
22K3	$4,660,212	$176,491,056	$231,123,433	$274,040,779
22L3	$3,642,329	$176,312,374	$230,893,925	$273,712,504
22M3	$5,003,595	$176,489,294	$231,121,668	$274,039,008
22N3	$5,003,595	$176,489,294	$231,121,668	$274,039,008
22O3	$3,875,341	$176,488,225	$231,120,598	$274,037,935
22P3	$3,715,898	$176,489,785	$231,122,160	$274,039,502
23A1	$4,365,881	$171,626,308	$224,674,318	$264,505,904
23B1	$4,365,881	$171,626,308	$224,674,318	$264,505,904
23C1	$4,746,067	$172,157,067	$225,335,756	$265,414,269
23D1	$5,261,142	$172,151,651	$225,330,336	$265,408,840

23E1	$4,243,222	$171,888,173	$225,001,520	$264,956,563
23F1	$4,243,222	$171,888,173	$225,001,520	$264,956,563
23G1	$4,746,067	$172,157,067	$225,335,756	$265,414,269
23H1	$5,261,142	$172,151,651	$225,330,336	$265,408,840
23I1	$5,089,451	$173,983,206	$227,619,246	$268,561,955
23J1	$5,089,451	$173,983,206	$227,619,246	$268,561,955
23K1	$4,341,345	$174,238,847	$227,940,219	$269,006,377
23L1	$4,893,223	$174,243,342	$227,944,717	$269,010,882
23M1	$4,672,499	$175,280,774	$229,243,488	$270,803,471
23N1	$4,672,499	$175,280,774	$229,243,488	$270,803,471
23O1	$5,690,381	$175,549,093	$229,577,148	$271,260,599
23P1	$5,052,666	$175,548,171	$229,576,226	$271,259,675
23A2	$4,746,067	$173,574,365	$227,109,131	$267,860,476
23B2	$4,746,067	$173,574,365	$227,109,131	$267,860,476
23C2	$5,371,533	$173,018,524	$226,412,822	$266,898,743
23D2	$5,629,061	$173,879,866	$227,489,772	$268,383,101
23E2	$4,770,584	$173,874,449	$227,484,351	$268,377,672
23F2	$4,770,584	$173,874,449	$227,484,351	$268,377,672
23G2	$5,064,934	$173,316,303	$226,785,736	$267,413,628
23H2	$5,052,666	$173,877,907	$227,487,811	$268,381,137
23I2	$5,408,299	$175,719,166	$229,789,691	$271,553,389
23J2	$5,408,299	$175,719,166	$229,789,691	$271,553,389
23K2	$4,230,973	$175,711,676	$229,782,194	$271,545,881
23L2	$4,427,219	$176,009,455	$230,155,108	$272,060,766
23M2	$4,402,684	$176,911,551	$231,282,614	$273,614,202
23N2	$4,402,684	$176,911,551	$231,282,614	$273,614,202
23O2	$5,077,164	$177,821,600	$232,418,079	$275,175,608
23P2	$4,463,985	$178,157,598	$232,839,012	$275,757,029
23A3	$4,537,572	$176,510,893	$230,780,689	$272,920,924
23B3	$4,537,572	$176,510,893	$230,780,689	$272,920,924
23C3	$4,831,923	$177,951,956	$232,581,103	$275,400,360
23D3	$4,390,435	$178,161,171	$232,842,588	$275,760,610
23E3	$4,353,632	$176,851,271	$231,206,004	$273,506,735
23F3	$4,353,632	$176,851,271	$231,206,004	$273,506,735
23G3	$4,623,447	$178,160,710	$232,842,126	$275,760,148
23H3	$4,390,435	$178,161,171	$232,842,588	$275,760,610
23I3	$5,800,753	$178,157,714	$232,839,127	$275,757,145
23J3	$5,800,753	$178,157,714	$232,839,127	$275,757,145
23K3	$4,304,561	$178,163,015	$232,844,433	$275,762,459
23L3	$3,997,962	$178,162,784	$232,844,202	$275,762,228

23M3	$4,010,229	$178,155,293	$232,836,705	$275,754,719
23N3	$4,010,229	$178,155,293	$232,836,705	$275,754,719
23O3	$4,365,881	$178,153,911	$232,835,321	$275,753,333
23P3	$4,034,765	$178,152,758	$232,834,168	$275,752,178
24A1	$4,770,584	$172,774,888	$225,826,845	$265,659,110
24B1	$4,770,584	$172,774,888	$225,826,845	$265,659,110
24C1	$5,212,090	$172,771,261	$225,823,216	$265,655,477
24D1	$5,113,967	$172,165,586	$225,083,258	$264,668,597
24E1	$4,770,584	$172,774,888	$225,826,845	$265,659,110
24F1	$4,770,584	$172,774,888	$225,826,845	$265,659,110
24G1	$5,212,090	$172,771,261	$225,823,216	$265,655,477
24H1	$5,199,823	$172,463,631	$225,448,442	$265,157,237
24I1	$5,604,526	$175,167,014	$228,756,090	$269,576,010
24J1	$5,604,526	$175,167,014	$228,756,090	$269,576,010
24K1	$4,696,977	$174,864,825	$228,386,759	$269,083,219
24L1	$5,064,915	$174,858,866	$228,380,797	$269,077,251
24M1	$4,905,472	$176,353,751	$230,211,381	$271,525,120
24N1	$4,905,472	$176,353,751	$230,211,381	$271,525,120
24O1	$4,439,468	$176,662,417	$230,587,192	$272,024,398
24P1	$4,427,219	$176,360,228	$230,217,861	$271,531,607
24A2	$4,905,472	$173,410,618	$226,606,922	$266,704,612
24B2	$4,905,472	$173,410,618	$226,606,922	$266,704,612
24C2	$4,500,769	$173,725,502	$226,988,954	$267,210,118
24D2	$4,157,367	$174,674,821	$228,149,767	$268,759,828
24E2	$4,856,420	$173,408,286	$226,604,589	$266,702,276
24F2	$4,856,420	$173,408,286	$226,604,589	$266,702,276
24G2	$4,267,757	$174,064,224	$227,404,885	$267,768,018
24H2	$4,157,367	$174,674,821	$228,149,767	$268,759,828
24I2	$5,825,289	$176,473,106	$230,354,242	$271,711,206
24J2	$5,825,289	$176,473,106	$230,354,242	$271,711,206
24K2	$5,089,432	$175,778,303	$229,505,014	$270,578,020
24L2	$4,598,892	$177,788,354	$231,968,254	$273,874,585
24M2	$4,598,892	$177,788,354	$231,968,254	$273,874,585
24N2	$4,598,892	$177,788,354	$231,968,254	$273,874,585
24O2	$4,893,242	$178,441,701	$232,765,957	$274,937,732
24P2	$4,733,799	$178,454,136	$232,778,399	$274,950,187
24A3	$4,034,765	$176,604,467	$230,515,814	$271,928,331
24B3	$4,034,765	$176,604,467	$230,515,814	$271,928,331
24C3	$4,807,387	$178,556,911	$232,904,671	$275,119,667
24D3	$4,868,726	$178,543,439	$232,891,192	$275,106,174

24E3	$3,924,393	$176,992,157	$230,990,786	$272,563,795
24F3	$3,924,393	$176,992,157	$230,990,786	$272,563,795
24G3	$4,549,859	$178,937,865	$233,372,903	$275,748,386
24H3	$4,868,726	$178,543,439	$232,891,192	$275,106,174
24I3	$4,316,828	$179,241,091	$233,743,271	$276,242,215
24J3	$4,316,828	$179,241,091	$233,743,271	$276,242,215
24K3	$4,574,375	$180,242,058	$234,972,505	$277,891,186
24L3	$4,697,015	$180,246,203	$234,976,653	$277,895,338
24M3	$4,230,992	$180,246,722	$234,977,171	$277,895,857
24N3	$4,230,992	$180,246,722	$234,977,171	$277,895,857
24O3	$5,297,927	$180,235,582	$234,966,025	$277,884,699
24P3	$3,642,310	$180,254,753	$234,985,206	$277,903,901
25A1	$4,586,624	$173,329,333	$226,247,347	$265,833,370
25B1	$4,586,624	$173,329,333	$226,247,347	$265,833,370
25C1	$5,506,422	$173,308,614	$226,226,619	$265,812,623
25D1	$5,248,875	$173,308,614	$226,226,619	$265,812,623
25E1	$4,586,624	$173,329,333	$226,247,347	$265,833,370
25F1	$4,586,624	$173,329,333	$226,247,347	$265,833,370
25G1	$5,506,422	$173,308,614	$226,226,619	$265,812,623
25H1	$5,248,875	$173,308,614	$226,226,619	$265,812,623
25I1	$5,028,150	$174,605,997	$227,796,895	$267,876,737
25J1	$5,028,150	$174,605,997	$227,796,895	$267,876,737
25K1	$4,034,746	$174,598,538	$227,789,433	$267,869,268
25L1	$5,187,555	$174,597,295	$227,788,189	$267,868,023
25M1	$4,770,584	$174,877,820	$228,136,917	$268,340,172
25N1	$4,770,584	$174,877,820	$228,136,917	$268,340,172
25O1	$4,611,160	$174,892,738	$228,151,842	$268,355,110
25P1	$4,880,975	$174,890,666	$228,149,769	$268,353,035
25A2	$4,819,617	$173,861,463	$226,895,447	$266,691,334
25B2	$4,819,617	$173,861,463	$226,895,447	$266,691,334
25C2	$4,427,181	$174,143,481	$227,235,459	$267,136,291
25D2	$4,402,665	$174,507,875	$227,678,305	$267,721,109
25E2	$4,451,717	$173,856,490	$226,890,473	$266,686,355
25F2	$4,451,717	$173,856,490	$226,890,473	$266,686,355
25G2	$4,427,181	$174,143,481	$227,235,459	$267,136,291
25H2	$4,402,665	$174,507,875	$227,678,305	$267,721,109
25I2	$4,696,996	$175,599,400	$229,005,188	$269,473,901
25J2	$4,696,996	$175,599,400	$229,005,188	$269,473,901
25K2	$4,758,316	$175,231,691	$228,559,024	$268,885,764
25L2	$4,598,892	$175,220,917	$228,548,246	$268,874,976

25M2	$4,721,513	$175,942,660	$229,426,892	$270,037,557
25N2	$4,721,513	$175,942,660	$229,426,892	$270,037,557
25O2	$4,243,241	$176,316,171	$229,878,859	$270,631,503
25P2	$4,672,480	$176,324,873	$229,887,565	$270,640,217
25A3	$3,556,474	$175,977,055	$229,461,301	$270,071,997
25B3	$3,556,474	$175,977,055	$229,461,301	$270,071,997
25C3	$4,194,208	$176,806,866	$230,468,486	$271,400,164
25D3	$4,365,881	$177,224,879	$230,975,188	$272,067,360
25E3	$4,402,684	$176,397,140	$229,970,076	$270,741,267
25F3	$4,402,684	$176,397,140	$229,970,076	$270,741,267
25G3	$4,488,520	$177,219,492	$230,969,799	$272,061,966
25H3	$4,280,044	$177,221,978	$230,972,286	$272,064,456
25I3	$4,304,580	$177,028,635	$230,738,009	$271,756,104
25J3	$4,304,580	$177,028,635	$230,738,009	$271,756,104
25K3	$3,654,578	$177,844,771	$231,731,514	$273,070,579
25L3	$3,814,021	$177,857,617	$231,744,365	$273,083,442
25M3	$4,647,944	$177,427,172	$231,225,226	$272,403,798
25N3	$4,647,944	$177,427,172	$231,225,226	$272,403,798
25O3	$4,280,025	$177,411,839	$231,209,887	$272,388,446
25P3	$4,304,561	$177,420,956	$231,219,008	$272,397,574
11A1	$3,495,173	$170,250,850	$223,167,517	$262,750,847
11B1	$3,495,173	$170,250,850	$223,167,517	$262,750,847
11C1	$3,605,526	$170,250,854	$223,167,521	$262,750,850
11D1	$3,053,648	$170,250,851	$223,167,519	$262,750,848
11E1	$3,630,081	$170,696,982	$223,740,714	$263,570,956
11F1	$3,630,081	$170,696,982	$223,740,714	$263,570,956
11G1	$3,617,794	$170,696,982	$223,740,714	$263,570,957
11H1	$3,139,503	$170,696,982	$223,740,713	$263,570,956
11I1	$3,409,318	$171,366,170	$224,600,498	$264,801,111
11J1	$3,409,318	$171,366,170	$224,600,498	$264,801,111
11K1	$3,961,177	$171,366,173	$224,600,501	$264,801,114
11L1	$3,274,410	$171,366,174	$224,600,502	$264,801,115
11M1	$3,286,697	$172,481,493	$226,033,482	$266,851,379
11N1	$3,286,697	$172,481,493	$226,033,482	$266,851,379
11O1	$3,728,166	$172,481,491	$226,033,479	$266,851,376
11P1	$3,433,834	$172,481,494	$226,033,482	$266,851,379
11A2	$4,083,836	$171,165,411	$224,342,560	$264,432,062
11B2	$4,083,836	$171,165,411	$224,342,560	$264,432,062
11C2	$3,826,289	$171,165,415	$224,342,564	$264,432,066
11D2	$3,237,607	$171,165,415	$224,342,564	$264,432,066

11E2	$3,274,429	$171,678,461	$225,001,734	$265,375,186
11F2	$3,274,429	$171,678,461	$225,001,734	$265,375,186
11G2	$3,176,306	$171,934,986	$225,331,321	$265,846,749
11H2	$2,587,625	$171,934,987	$225,331,322	$265,846,750
11I2	$3,409,318	$172,448,031	$225,990,490	$266,789,869
11J2	$3,409,318	$172,448,031	$225,990,490	$266,789,869
11K2	$3,262,162	$172,191,506	$225,660,903	$266,318,306
11L2	$3,065,915	$172,191,510	$225,660,907	$266,318,310
11M2	$3,482,905	$173,474,125	$227,308,832	$268,676,112
11N2	$3,482,905	$173,474,125	$227,308,832	$268,676,112
11O2	$3,421,567	$173,764,109	$227,681,407	$269,209,181
11P2	$3,323,462	$174,020,628	$228,010,988	$269,680,737
11A3	$2,918,759	$173,373,752	$227,179,869	$268,491,593
11B3	$2,918,759	$173,373,752	$227,179,869	$268,491,593
11C3	$3,188,574	$173,953,723	$227,925,024	$269,557,736
11D3	$2,869,726	$175,113,664	$229,415,332	$271,690,020
11E3	$3,102,719	$173,663,738	$227,552,447	$269,024,665
11F3	$3,102,719	$173,663,738	$227,552,447	$269,024,665
11G3	$3,151,771	$174,533,689	$228,670,173	$270,623,873
11H3	$2,869,726	$175,113,664	$229,415,332	$271,690,020
11I3	$3,200,842	$174,243,706	$228,297,598	$270,090,804
11J3	$3,200,842	$174,243,706	$228,297,598	$270,090,804
11K3	$3,249,894	$175,113,657	$229,415,325	$271,690,013
11L3	$2,440,487	$175,403,648	$229,787,908	$272,223,089
11M3	$3,482,886	$174,823,665	$229,042,741	$271,156,935
11N3	$3,482,886	$174,823,665	$229,042,741	$271,156,935
11O3	$3,593,277	$175,403,631	$229,787,891	$272,223,072
11P3	$3,507,441	$176,273,586	$230,905,621	$273,822,284
12A1	$3,495,173	$170,418,616	$223,335,547	$262,919,403
12B1	$3,495,173	$170,418,616	$223,335,547	$262,919,403
12C1	$3,605,526	$170,419,280	$223,336,212	$262,920,070
12D1	$3,053,648	$170,418,847	$223,335,778	$262,919,635
12E1	$3,630,081	$170,865,524	$223,909,520	$263,740,292
12F1	$3,630,081	$170,865,524	$223,909,520	$263,740,292
12G1	$3,617,794	$170,865,582	$223,909,578	$263,740,350
12H1	$3,139,503	$170,865,466	$223,909,462	$263,740,234
12I1	$3,409,318	$171,533,994	$224,768,585	$264,969,725
12J1	$3,409,318	$171,533,994	$224,768,585	$264,969,725
12K1	$3,961,177	$171,534,514	$224,769,106	$264,970,248
12L1	$3,274,410	$171,534,745	$224,769,337	$264,970,480

12M1	$3,286,697	$172,649,862	$226,202,115	$267,020,541
12N1	$3,286,697	$172,649,862	$226,202,115	$267,020,541
12O1	$3,728,166	$172,649,371	$226,201,624	$267,020,048
12P1	$3,433,834	$172,650,007	$226,202,260	$267,020,687
12A2	$4,083,836	$171,332,889	$224,510,301	$264,600,330
12B2	$4,083,836	$171,332,889	$224,510,301	$264,600,330
12C2	$3,826,289	$171,333,583	$224,510,996	$264,601,026
12D2	$3,237,607	$171,333,727	$224,511,140	$264,601,171
12E2	$3,274,429	$171,846,428	$225,169,964	$265,543,945
12F2	$3,274,429	$171,846,428	$225,169,964	$265,543,945
12G2	$3,176,306	$172,103,327	$225,499,926	$266,015,883
12H2	$2,587,625	$172,103,471	$225,500,071	$266,016,028
12I2	$3,409,318	$172,615,998	$226,158,721	$266,958,627
12J2	$3,409,318	$172,615,998	$226,158,721	$266,958,627
12K2	$3,262,162	$172,359,099	$225,828,759	$266,486,689
12L2	$3,065,915	$172,359,850	$225,829,511	$266,487,444
12M2	$3,482,905	$173,642,006	$227,476,976	$268,844,783
12N2	$3,482,905	$173,642,006	$227,476,976	$268,844,783
12O2	$3,421,567	$173,932,018	$227,849,580	$269,377,881
12P2	$3,323,462	$174,187,675	$228,178,298	$269,848,571
12A3	$2,918,759	$173,542,638	$227,349,021	$268,661,275
12B3	$2,918,759	$173,542,638	$227,349,021	$268,661,275
12C3	$3,188,574	$174,123,673	$228,095,241	$269,728,487
12D3	$2,869,726	$175,285,310	$229,587,248	$271,862,474
12E3	$3,102,719	$173,833,343	$227,722,319	$269,195,070
12F3	$3,102,719	$173,833,343	$227,722,319	$269,195,070
12G3	$3,151,771	$174,703,553	$228,840,304	$270,794,537
12H3	$2,869,726	$175,285,310	$229,587,248	$271,862,474
12I3	$3,200,842	$174,413,541	$228,467,700	$270,261,440
12J3	$3,200,842	$174,413,541	$228,467,700	$270,261,440
12K3	$3,249,894	$175,283,924	$229,585,859	$271,861,081
12L3	$2,440,487	$175,575,467	$229,959,996	$272,395,717
12M3	$3,482,886	$174,992,121	$229,211,461	$271,326,184
12N3	$3,482,886	$174,992,121	$229,211,461	$271,326,184
12O3	$3,593,277	$175,572,000	$229,956,525	$272,392,235
12P3	$3,507,441	$176,443,019	$231,075,320	$273,992,515
13A1	$3,495,173	$170,923,260	$223,840,456	$263,424,842
13B1	$3,495,173	$170,923,260	$223,840,456	$263,424,842
13C1	$3,814,021	$170,921,992	$223,839,187	$263,423,572
13D1	$3,777,218	$170,923,260	$223,840,456	$263,424,842

13E1	$3,630,081	$171,448,257	$224,496,127	$264,327,432
13F1	$3,630,081	$171,448,257	$224,496,127	$264,327,432
13G1	$3,826,289	$171,183,626	$224,166,158	$263,874,000
13H1	$3,863,073	$171,186,162	$224,168,695	$263,876,541
13I1	$3,470,638	$172,229,011	$225,472,887	$265,674,559
13J1	$3,470,638	$172,229,011	$225,472,887	$265,674,559
13K1	$4,120,620	$171,966,800	$225,145,340	$265,223,553
13L1	$3,544,206	$171,968,990	$225,147,531	$265,225,748
13M1	$3,777,237	$173,534,301	$227,104,857	$267,923,814
13N1	$3,777,237	$173,534,301	$227,104,857	$267,923,814
13O1	$4,329,096	$173,534,647	$227,105,203	$267,924,161
13P1	$2,869,726	$173,533,840	$227,104,396	$267,923,352
13A2	$4,194,189	$171,692,810	$224,802,747	$264,751,331
13B2	$4,194,189	$171,692,810	$224,802,747	$264,751,331
13C2	$3,801,753	$172,034,802	$225,229,677	$265,338,759
13D2	$3,237,626	$172,033,073	$225,227,947	$265,337,027
13E2	$3,176,306	$172,294,938	$225,555,149	$265,787,686
13F2	$3,176,306	$172,294,938	$225,555,149	$265,787,686
13G2	$3,151,771	$172,935,746	$226,356,031	$266,891,040
13H2	$2,587,644	$172,934,017	$226,354,301	$266,889,307
13I2	$3,409,318	$173,795,935	$227,431,828	$268,374,243
13J2	$3,409,318	$173,795,935	$227,431,828	$268,374,243
13K2	$2,857,439	$173,533,148	$227,103,704	$267,922,659
13L2	$3,176,306	$173,535,569	$227,106,126	$267,925,085
13M2	$3,654,597	$174,991,432	$228,927,865	$270,438,174
13N2	$3,654,597	$174,991,432	$228,927,865	$270,438,174
13O2	$3,421,586	$174,994,082	$228,930,518	$270,440,831
13P2	$2,906,510	$174,995,350	$228,931,787	$270,442,101
13A3	$3,004,596	$173,903,885	$227,565,914	$268,557,718
13B3	$3,004,596	$173,903,885	$227,565,914	$268,557,718
13C3	$3,814,021	$173,300,720	$226,812,475	$267,520,323
13D3	$2,980,098	$173,638,217	$227,234,907	$268,103,246
13E3	$2,734,800	$174,242,188	$227,989,154	$269,141,450
13F3	$2,734,800	$174,242,188	$227,989,154	$269,141,450
13G3	$3,311,195	$173,978,364	$227,659,992	$268,688,826
13H3	$2,477,272	$174,315,861	$228,082,424	$269,271,750
13I3	$3,433,834	$175,938,777	$230,110,427	$272,065,192
13J3	$3,433,834	$175,938,777	$230,110,427	$272,065,192
13K3	$3,176,287	$175,673,801	$229,780,111	$271,611,414
13L3	$3,139,503	$175,672,994	$229,779,304	$271,610,605

13M3	$2,747,067	$176,606,857	$230,948,371	$273,224,108
13N3	$2,747,067	$176,606,857	$230,948,371	$273,224,108
13O3	$3,114,986	$177,632,831	$232,229,162	$274,986,393
13P3	$3,114,986	$177,632,831	$232,229,162	$274,986,393
14A1	$3,544,225	$171,763,506	$224,680,967	$264,265,884
14B1	$3,544,225	$171,763,506	$224,680,967	$264,265,884
14C1	$4,047,033	$171,762,729	$224,680,190	$264,265,105
14D1	$3,936,642	$171,766,615	$224,684,078	$264,268,997
14E1	$3,679,133	$172,368,144	$225,419,888	$265,251,726
14F1	$3,679,133	$172,368,144	$225,419,888	$265,251,726
14G1	$4,059,300	$172,063,105	$225,047,706	$264,756,080
14H1	$4,022,497	$172,368,663	$225,420,407	$265,252,245
14I1	$3,519,690	$173,259,946	$226,513,106	$266,715,309
14J1	$3,519,690	$173,259,946	$226,513,106	$266,715,309
14K1	$4,353,632	$172,960,347	$226,146,367	$266,225,112
14L1	$3,703,630	$173,265,127	$226,518,290	$266,720,499
14M1	$3,740,452	$174,753,535	$228,342,394	$269,161,880
14N1	$3,740,452	$174,753,535	$228,342,394	$269,161,880
14O1	$3,311,195	$174,748,354	$228,337,209	$269,156,690
14P1	$3,580,991	$174,755,090	$228,343,949	$269,163,437
14A2	$3,764,969	$172,979,348	$226,172,077	$266,263,156
14B2	$3,764,969	$172,979,348	$226,172,077	$266,263,156
14C2	$3,679,114	$173,329,729	$226,599,671	$266,832,733
14D2	$3,789,504	$174,028,418	$227,452,787	$267,969,812
14E2	$2,955,562	$173,671,042	$227,018,194	$267,393,229
14F2	$2,955,562	$173,671,042	$227,018,194	$267,393,229
14G2	$3,029,131	$174,362,218	$227,863,793	$268,522,782
14H2	$3,139,522	$175,060,906	$228,716,909	$269,659,861
14I2	$3,286,678	$175,052,875	$228,708,873	$269,651,817
14J2	$3,286,678	$175,052,875	$228,708,873	$269,651,817
14K2	$3,016,882	$175,046,916	$228,702,911	$269,645,849
14L2	$3,605,545	$176,416,055	$230,380,890	$271,891,722
14M2	$3,605,545	$176,416,055	$230,380,890	$271,891,722
14N2	$3,605,545	$176,416,055	$230,380,890	$271,891,722
14O2	$3,053,667	$176,757,627	$230,799,671	$272,452,477
14P2	$3,397,050	$176,764,622	$230,806,670	$272,459,483
14A3	$3,286,678	$175,562,426	$229,332,563	$270,485,384
14B3	$3,286,678	$175,562,426	$229,332,563	$270,485,384
14C3	$3,433,834	$175,174,217	$228,857,072	$269,849,400
14D3	$3,384,782	$175,261,791	$228,964,787	$269,994,150

14E3	$3,225,358	$175,948,822	$229,806,238	$271,119,552
14F3	$3,225,358	$175,948,822	$229,806,238	$271,119,552
14G3	$2,931,008	$175,949,340	$229,806,757	$271,120,071
14H3	$2,881,956	$176,036,914	$229,914,472	$271,264,820
14I3	$3,078,183	$177,513,575	$231,720,123	$273,675,424
14J3	$3,078,183	$177,513,575	$231,720,123	$273,675,424
14K3	$2,918,759	$177,904,374	$232,198,206	$274,314,002
14L3	$2,980,079	$177,900,747	$232,194,577	$274,310,370
14M3	$3,225,358	$178,263,826	$232,644,924	$274,921,184
14N3	$3,225,358	$178,263,826	$232,644,924	$274,921,184
14O3	$2,771,603	$179,840,238	$234,570,473	$277,488,732
14P3	$3,274,429	$179,833,502	$234,563,734	$277,481,986
15A1	$3,311,214	$172,670,040	$225,587,765	$265,173,211
15B1	$3,311,214	$172,670,040	$225,587,765	$265,173,211
15C1	$3,728,166	$172,678,328	$225,596,057	$265,181,510
15D1	$3,421,567	$172,676,670	$225,594,399	$265,179,850
15E1	$3,446,121	$173,002,777	$225,988,730	$265,697,642
15F1	$3,446,121	$173,002,777	$225,988,730	$265,697,642
15G1	$3,740,433	$173,002,363	$225,988,315	$265,697,227
15H1	$3,507,422	$173,005,264	$225,991,217	$265,700,131
15I1	$3,286,678	$173,959,965	$227,150,579	$267,229,856
15J1	$3,286,678	$173,959,965	$227,150,579	$267,229,856
15K1	$4,034,765	$173,968,253	$227,158,871	$267,238,154
15L1	$3,188,555	$173,969,910	$227,160,529	$267,239,814
15M1	$3,826,289	$175,225,855	$228,689,348	$269,262,434
15N1	$3,826,289	$175,225,855	$228,689,348	$269,262,434
15O1	$3,654,578	$175,235,800	$228,699,298	$269,272,392
15P1	$3,298,946	$175,247,403	$228,710,906	$269,284,010
15A2	$3,286,678	$173,605,349	$226,724,323	$266,673,954
15B2	$3,286,678	$173,605,349	$226,724,323	$266,673,954
15C2	$3,703,649	$173,982,174	$227,179,607	$267,271,220
15D2	$3,360,266	$175,101,463	$228,534,266	$269,051,813
15E2	$2,477,272	$174,351,956	$227,627,843	$267,861,431
15F2	$2,477,272	$174,351,956	$227,627,843	$267,861,431
15G2	$3,053,667	$175,094,004	$228,526,803	$269,044,344
15H2	$2,710,283	$176,213,293	$229,881,462	$270,824,938
15I2	$3,213,091	$175,843,097	$229,432,811	$270,234,311
15J2	$3,213,091	$175,843,097	$229,432,811	$270,234,311
15K2	$2,722,551	$175,822,378	$229,412,082	$270,213,564
15L2	$3,446,102	$175,894,230	$229,494,179	$270,314,200

15M2	$3,691,381	$176,920,533	$230,745,598	$271,972,996
15N2	$3,691,381	$176,920,533	$230,745,598	$271,972,996
15O2	$3,041,399	$176,925,506	$230,750,573	$271,977,975
15P2	$3,311,195	$176,936,694	$230,761,766	$271,989,179
15A3	$3,139,503	$176,334,453	$230,029,908	$271,022,760
15B3	$3,139,503	$176,334,453	$230,029,908	$271,022,760
15C3	$3,507,422	$175,935,502	$229,542,276	$270,374,651
15D3	$3,568,742	$176,339,012	$230,034,468	$271,027,324
15E3	$3,078,183	$176,749,152	$230,533,293	$271,686,636
15F3	$3,078,183	$176,749,152	$230,533,293	$271,686,636
15G3	$3,004,596	$176,768,628	$230,552,778	$271,706,138
15H3	$3,065,915	$177,172,138	$231,044,970	$272,358,811
15I3	$3,605,526	$178,445,655	$232,584,561	$274,379,900
15J3	$3,605,526	$178,445,655	$232,584,561	$274,379,900
15K3	$2,268,777	$178,440,682	$232,579,586	$274,374,921
15L3	$2,845,172	$178,448,970	$232,587,877	$274,383,220
15M3	$3,519,690	$178,825,959	$233,053,537	$275,009,337
15N3	$3,519,690	$178,825,959	$233,053,537	$275,009,337
15O3	$2,697,996	$179,230,297	$233,546,558	$275,662,840
15P3	$3,360,266	$179,266,349	$233,582,626	$275,698,939
31A1	$5,886,589	$170,251,328	$223,167,996	$262,751,327
31B1	$5,886,589	$170,251,328	$223,167,996	$262,751,327
31C1	$6,364,880	$170,251,324	$223,167,992	$262,751,322
31D1	$5,788,466	$170,251,323	$223,167,990	$262,751,321
31E1	$5,653,578	$171,143,585	$224,314,381	$264,391,539
31F1	$5,653,578	$171,143,585	$224,314,381	$264,391,539
31G1	$6,168,653	$171,143,579	$224,314,376	$264,391,534
31H1	$6,548,821	$171,143,578	$224,314,375	$264,391,533
31I1	$4,807,349	$172,928,093	$226,607,147	$267,671,959
31J1	$4,807,349	$172,928,093	$226,607,147	$267,671,959
31K1	$5,187,555	$172,928,087	$226,607,141	$267,671,953
31L1	$5,813,002	$172,928,090	$226,607,144	$267,671,956
31M1	$6,413,932	$175,158,736	$229,473,112	$271,772,492
31N1	$6,413,932	$175,158,736	$229,473,112	$271,772,492
31O1	$5,629,042	$175,158,731	$229,473,106	$271,772,486
31P1	$5,739,414	$175,158,731	$229,473,106	$271,772,486
31A2	$5,481,867	$171,567,404	$224,858,911	$265,170,637
31B2	$5,481,867	$171,567,404	$224,858,911	$265,170,637
31C2	$5,923,374	$172,336,976	$225,847,670	$266,585,321
31D2	$5,346,979	$172,336,978	$225,847,671	$266,585,323

31E2	$5,334,692	$172,336,976	$225,847,669	$266,585,321
31F2	$5,334,692	$172,336,976	$225,847,669	$266,585,321
31G2	$6,426,200	$173,106,546	$226,836,425	$268,000,003
31H2	$5,383,782	$173,106,550	$226,836,429	$268,000,007
31I2	$4,427,181	$174,645,691	$228,813,942	$270,829,372
31J2	$4,427,181	$174,645,691	$228,813,942	$270,829,372
31K2	$5,678,113	$174,132,636	$228,154,763	$269,886,242
31L2	$5,199,823	$174,132,641	$228,154,768	$269,886,247
31M2	$6,033,746	$176,274,055	$230,906,091	$273,822,755
31N2	$6,033,746	$176,274,055	$230,906,091	$273,822,755
31O2	$5,923,374	$176,274,051	$230,906,087	$273,822,751
31P2	$6,646,925	$176,274,055	$230,906,091	$273,822,755
31A3	$4,831,866	$174,177,250	$228,212,083	$269,968,254
31B3	$4,831,866	$174,177,250	$228,212,083	$269,968,254
31C3	$4,500,769	$175,917,152	$230,447,536	$273,166,670
31D3	$5,089,413	$175,917,158	$230,447,542	$273,166,675
31E3	$4,831,866	$174,177,250	$228,212,083	$269,968,254
31F3	$4,831,866	$174,177,250	$228,212,083	$269,968,254
31G3	$4,647,925	$176,207,134	$230,820,111	$273,699,738
31H3	$5,028,112	$176,207,136	$230,820,112	$273,699,739
31I3	$4,218,705	$176,274,060	$230,906,095	$273,822,759
31J3	$4,218,705	$176,274,060	$230,906,095	$273,822,759
31K3	$4,525,286	$176,274,058	$230,906,094	$273,822,758
31L3	$4,905,472	$176,274,060	$230,906,095	$273,822,759
31M3	$5,150,770	$176,274,059	$230,906,095	$273,822,759
31N3	$5,150,770	$176,274,059	$230,906,095	$273,822,759
31O3	$4,905,510	$176,274,055	$230,906,091	$273,822,755
31P3	$6,291,293	$176,274,064	$230,906,100	$273,822,764
32A1	$5,960,158	$170,512,669	$223,429,748	$263,013,899
32B1	$5,960,158	$170,512,669	$223,429,748	$263,013,899
32C1	$5,175,268	$170,512,554	$223,429,632	$263,013,783
32D1	$5,212,071	$170,513,074	$223,430,153	$263,014,306
32E1	$5,555,455	$170,734,607	$223,715,215	$263,422,820
32F1	$5,555,455	$170,734,607	$223,715,215	$263,422,820
32G1	$5,457,332	$170,735,704	$223,716,315	$263,423,923
32H1	$4,979,060	$170,736,860	$223,717,472	$263,425,084
32I1	$5,763,931	$173,188,599	$226,868,062	$267,933,693
32J1	$5,763,931	$173,188,599	$226,868,062	$267,933,693
32K1	$5,923,374	$173,189,726	$226,869,190	$267,934,824
32L1	$5,886,570	$173,189,004	$226,868,467	$267,934,099

32M1	$6,107,333	$175,422,012	$229,736,801	$272,037,008
32N1	$6,107,333	$175,422,012	$229,736,801	$272,037,008
32O1	$6,328,077	$175,421,348	$229,736,135	$272,036,340
32P1	$6,548,821	$175,421,492	$229,736,280	$272,036,485
32A2	$5,555,436	$172,085,328	$225,450,308	$265,904,830
32B2	$5,555,436	$172,085,328	$225,450,308	$265,904,830
32C2	$6,745,029	$172,598,895	$226,110,000	$266,848,474
32D2	$5,898,838	$172,891,507	$226,485,208	$267,384,184
32E2	$5,530,919	$172,598,000	$226,109,103	$266,847,575
32F2	$5,530,919	$172,598,000	$226,109,103	$266,847,575
32G2	$6,033,727	$173,111,769	$226,768,997	$267,791,422
32H2	$5,616,775	$173,147,510	$226,814,272	$267,855,223
32I2	$5,445,064	$174,907,492	$229,076,154	$271,092,406
32J2	$5,445,064	$174,907,492	$229,076,154	$271,092,406
32K2	$6,033,727	$173,111,769	$226,768,997	$267,791,422
32L2	$5,616,775	$173,147,510	$226,814,272	$267,855,223
32M2	$5,665,827	$176,536,841	$231,169,289	$274,086,779
32N2	$5,665,827	$176,536,841	$231,169,289	$274,086,779
32O2	$6,487,501	$176,537,390	$231,169,839	$274,087,330
32P2	$6,462,984	$176,537,130	$231,169,579	$274,087,069
32A3	$5,960,158	$174,730,687	$228,848,526	$270,766,018
32B3	$5,960,158	$174,730,687	$228,848,526	$270,766,018
32C3	$5,702,611	$175,021,594	$229,222,027	$271,300,015
32D3	$5,763,950	$175,958,319	$230,425,586	$273,022,093
32E3	$5,960,158	$175,020,092	$229,220,523	$271,298,506
32F3	$5,960,158	$175,020,092	$229,220,523	$271,298,506
32G3	$5,629,023	$175,601,705	$229,967,322	$272,366,298
32H3	$5,763,950	$175,958,319	$230,425,586	$273,022,093
32I3	$5,236,569	$176,536,927	$231,169,376	$274,086,866
32J3	$5,236,569	$176,536,927	$231,169,376	$274,086,866
32K3	$6,095,047	$176,471,452	$231,084,844	$273,965,301
32L3	$6,377,148	$176,537,707	$231,170,157	$274,087,650
32M3	$5,163,000	$176,536,379	$231,168,826	$274,086,315
32N3	$5,163,000	$176,536,379	$231,168,826	$274,086,315
32O3	$5,923,374	$176,536,205	$231,168,653	$274,086,140
32P3	$6,573,356	$176,537,794	$231,170,244	$274,087,737
33A1	$5,371,514	$172,342,955	$225,521,790	$265,600,596
33B1	$5,371,514	$172,342,955	$225,521,790	$265,600,596
33C1	$6,131,850	$172,086,737	$225,200,240	$265,155,597
33D1	$6,082,798	$172,085,124	$225,198,626	$265,153,979

33E1	$5,579,990	$172,604,820	$225,848,992	$266,051,256
33F1	$5,579,990	$172,604,820	$225,848,992	$266,051,256
33G1	$6,291,274	$172,606,779	$225,850,952	$266,053,219
33H1	$6,389,378	$172,606,433	$225,850,606	$266,052,873
33I1	$6,696,015	$174,168,171	$227,804,357	$268,747,358
33J1	$6,696,015	$174,168,171	$227,804,357	$268,747,358
33K1	$6,340,326	$174,431,880	$228,133,404	$269,199,866
33L1	$6,119,582	$174,430,151	$228,131,674	$269,198,133
33M1	$6,291,293	$176,784,975	$231,074,525	$273,252,105
33N1	$6,291,293	$176,784,975	$231,074,525	$273,252,105
33O1	$5,898,838	$176,786,818	$231,076,370	$273,253,954
33P1	$5,297,908	$176,786,588	$231,076,140	$273,253,723
33A2	$5,530,900	$173,256,139	$226,663,650	$267,174,555
33B2	$5,530,900	$173,256,139	$226,663,650	$267,174,555
33C2	$5,862,073	$174,086,522	$227,699,847	$268,599,654
33D2	$5,506,403	$174,383,955	$228,072,415	$269,114,193
33E2	$5,788,428	$173,557,491	$227,040,139	$267,693,021
33F2	$5,788,428	$173,557,491	$227,040,139	$267,693,021
33G2	$6,303,560	$174,985,968	$228,824,702	$270,150,433
33H2	$6,095,065	$174,685,653	$228,449,250	$269,633,006
33I2	$5,555,455	$176,559,370	$230,793,382	$272,866,018
33J2	$5,555,455	$176,559,370	$230,793,382	$272,866,018
33K2	$6,303,560	$174,985,968	$228,824,702	$270,150,433
33L2	$6,095,065	$174,685,653	$228,449,250	$269,633,006
33M2	$5,518,670	$178,353,282	$233,034,850	$275,953,175
33N2	$5,518,670	$178,353,282	$233,034,850	$275,953,175
33O2	$5,064,934	$178,348,902	$233,030,467	$275,948,785
33P2	$5,310,176	$178,351,784	$233,033,350	$275,951,673
33A3	$5,518,670	$178,353,282	$233,034,850	$275,953,175
33B3	$5,518,670	$178,353,282	$233,034,850	$275,953,175
33C3	$5,064,934	$178,348,902	$233,030,467	$275,948,785
33D3	$5,310,176	$178,351,784	$233,033,350	$275,951,673
33E3	$6,438,449	$175,028,245	$228,880,039	$270,230,445
33F3	$6,438,449	$175,028,245	$228,880,039	$270,230,445
33G3	$5,346,979	$177,418,613	$231,864,975	$274,338,864
33H3	$5,518,670	$177,759,567	$232,290,867	$274,925,252
33I3	$5,825,270	$178,347,404	$233,028,968	$275,947,284
33J3	$5,825,270	$178,347,404	$233,028,968	$275,947,284
33K3	$5,113,986	$178,100,291	$232,716,529	$275,511,410
33L3	$5,567,741	$178,098,908	$232,715,145	$275,510,024

33M3	$5,518,670	$178,353,282	$233,034,850	$275,953,175
33N3	$5,518,670	$178,353,282	$233,034,850	$275,953,175
33O3	$5,555,455	$178,349,018	$233,030,582	$275,948,901
33P3	$5,555,455	$178,349,709	$233,031,274	$275,949,594
34A1	$5,911,087	$172,597,459	$225,515,358	$265,101,151
34B1	$5,911,087	$172,597,459	$225,515,358	$265,101,151
34C1	$6,095,047	$172,595,128	$225,513,025	$265,098,815
34D1	$6,242,222	$172,587,874	$225,505,767	$265,091,550
34E1	$6,033,727	$172,597,977	$225,515,876	$265,101,670
34F1	$6,033,727	$172,597,977	$225,515,876	$265,101,670
34G1	$6,389,378	$172,593,314	$225,511,211	$265,096,999
34H1	$7,149,751	$172,587,874	$225,505,767	$265,091,550
34I1	$5,040,361	$174,688,692	$228,076,568	$268,526,558
34J1	$5,040,361	$174,688,692	$228,076,568	$268,526,558
34K1	$5,346,941	$174,385,725	$227,706,460	$268,032,988
34L1	$6,683,728	$174,397,124	$227,717,865	$268,044,405
34M1	$5,862,054	$177,070,197	$230,995,185	$272,432,820
34N1	$5,862,054	$177,070,197	$230,995,185	$272,432,820
34O1	$6,168,634	$176,767,230	$230,625,077	$271,939,250
34P1	$6,205,418	$177,385,858	$231,377,995	$272,939,104
34A2	$6,512,018	$175,185,893	$228,684,551	$269,338,249
34B2	$6,512,018	$175,185,893	$228,684,551	$269,338,249
34C2	$6,720,531	$176,520,053	$230,317,485	$271,520,570
34D2	$5,579,990	$176,540,519	$230,337,963	$271,541,069
34E2	$6,561,070	$175,532,646	$229,108,517	$269,904,193
34F2	$6,561,070	$175,532,646	$229,108,517	$269,904,193
34G2	$6,561,107	$176,864,475	$230,739,118	$272,084,179
34H2	$5,579,990	$176,540,519	$230,337,963	$271,541,069
34I2	$5,101,662	$178,157,439	$232,320,787	$274,196,721
34J2	$5,101,662	$178,157,439	$232,320,787	$274,196,721
34K2	$6,487,520	$177,556,946	$231,586,013	$273,215,030
34L2	$5,273,372	$179,906,755	$234,466,220	$277,070,534
34M2	$5,273,372	$179,906,755	$234,466,220	$277,070,534
34N2	$5,273,372	$179,906,755	$234,466,220	$277,070,534
34O2	$5,616,756	$180,679,631	$235,410,308	$278,329,448
34P2	$4,463,966	$180,578,500	$235,292,378	$278,180,627
34A3	$6,622,389	$176,451,998	$230,235,998	$271,414,383
34B3	$6,622,389	$176,451,998	$230,235,998	$271,414,383
34C3	$5,935,641	$179,698,960	$234,208,079	$276,719,818
34D3	$5,874,322	$179,601,283	$234,090,255	$276,564,949

34E3	$6,671,441	$176,843,575	$230,714,858	$272,053,740
34F3	$6,671,441	$176,843,575	$230,714,858	$272,053,740
34G3	$6,033,746	$179,693,002	$234,202,117	$276,713,850
34H3	$5,310,176	$179,991,305	$234,567,560	$277,202,749
34I3	$5,113,929	$180,204,366	$234,827,621	$277,549,234
34J3	$5,113,929	$180,204,366	$234,827,621	$277,549,234
34K3	$6,033,746	$179,693,002	$234,202,117	$276,713,850
34L3	$5,310,176	$179,991,305	$234,567,560	$277,202,749
34M3	$5,273,372	$180,668,750	$235,399,421	$278,318,550
34N3	$5,273,372	$180,668,750	$235,399,421	$278,318,550
34O3	$5,052,628	$180,679,631	$235,410,308	$278,329,448
34P3	$4,929,989	$180,652,169	$235,382,832	$278,301,943
35A1	$6,070,511	$173,975,780	$226,894,077	$266,480,666
35B1	$6,070,511	$173,975,780	$226,894,077	$266,480,666
35C1	$6,757,297	$173,983,654	$226,901,954	$266,488,550
35D1	$6,021,459	$173,967,907	$226,886,200	$266,472,782
35E1	$6,524,285	$173,989,455	$226,907,758	$266,494,359
35F1	$6,524,285	$173,989,455	$226,907,758	$266,494,359
35G1	$6,315,790	$173,980,338	$226,898,637	$266,485,230
35H1	$5,898,819	$173,973,708	$226,892,004	$266,478,592
35I1	$5,592,239	$173,952,160	$226,870,447	$266,457,015
35J1	$5,592,239	$173,952,160	$226,870,447	$266,457,015
35K1	$6,279,025	$173,950,502	$226,868,788	$266,455,355
35L1	$5,800,734	$173,955,889	$226,874,178	$266,460,749
35M1	$5,923,374	$174,889,871	$228,012,812	$267,969,727
35N1	$5,923,374	$174,889,871	$228,012,812	$267,969,727
35O1	$6,610,160	$174,888,214	$228,011,153	$267,968,067
35P1	$6,033,746	$174,889,457	$228,012,397	$267,969,312
35A2	$5,996,942	$174,395,866	$227,402,852	$267,149,937
35B2	$5,996,942	$174,395,866	$227,402,852	$267,149,937
35C2	$6,929,007	$174,391,722	$227,398,706	$267,145,787
35D2	$5,763,950	$174,756,945	$227,842,382	$267,731,435
35E2	$5,714,860	$174,754,458	$227,839,895	$267,728,945
35F2	$5,714,860	$174,754,458	$227,839,895	$267,728,945
35G2	$6,512,036	$174,387,992	$227,394,975	$267,142,053
35H2	$5,506,422	$174,741,612	$227,827,043	$267,716,082
35I2	$5,322,424	$175,846,397	$229,167,192	$269,482,153
35J2	$5,322,424	$175,846,397	$229,167,192	$269,482,153
35K2	$6,548,821	$175,120,510	$228,284,400	$268,315,422
35L2	$6,095,084	$175,103,105	$228,266,988	$268,297,995

35M2	$5,727,147	$176,175,154	$229,574,386	$270,031,286
35N2	$5,727,147	$176,175,154	$229,574,386	$270,031,286
35O2	$6,193,189	$176,183,442	$229,582,677	$270,039,585
35P2	$6,144,118	$176,177,640	$229,576,873	$270,033,776
35A3	$5,616,756	$175,968,554	$229,309,827	$269,661,847
35B3	$5,616,756	$175,968,554	$229,309,827	$269,661,847
35C3	$5,874,322	$177,523,009	$231,198,560	$272,155,500
35D3	$6,119,601	$177,518,451	$231,194,000	$272,150,936
35E3	$5,334,673	$176,375,379	$229,805,335	$270,317,839
35F3	$5,334,673	$176,375,379	$229,805,335	$270,317,839
35G3	$6,009,229	$177,543,729	$231,219,289	$272,176,247
35H3	$6,119,601	$177,518,451	$231,194,000	$272,150,936
35I3	$4,991,309	$177,501,876	$231,177,417	$272,134,339
35J3	$4,991,309	$177,501,876	$231,177,417	$272,134,339
35K3	$6,009,229	$177,543,729	$231,219,289	$272,176,247
35L3	$6,119,601	$177,518,451	$231,194,000	$272,150,936
35M3	$5,727,147	$177,477,427	$231,152,957	$272,109,857
35N3	$5,727,147	$177,477,427	$231,152,957	$272,109,857
35O3	$6,389,397	$177,489,858	$231,165,394	$272,122,305
35P3	$5,555,436	$177,493,588	$231,169,125	$272,126,040