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Hui Xu

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THE RELATIONSHIP OF BREAK-BULK SHIP LOADING PRACTICE TO OCEAN TRANSIT DAMAGE CLAIMS FOR MULTI-WALL PAPER BAGS

By

Hui Xu

A THESIS

Submitted to
Michigan State University
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1997

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ABSTRACT

THE RELATIONSHIP OF BREAK-BULK SHIP LOADING PRACTICE TO OCEAN TRANSIT DAMAGE CLAIMS FOR MULTI-WALL PAPER BAGS

By

Hui Xu

During the USDA/CCC food aid programs' ship loading operation, it is very common for some bags to be damaged. The leaking bags can cause even more damage as the spilled food contaminate other bags.

The purpose of this study was to find the effectiveness of a vessel loading observation procedure (VLOP) instituted by the USDA. VLOP removes damaged bags during loading. Furthermore, it investigates whether some other elements which are involved in the overseas shipment have an influence on the damage statistics.

Conclusions include:

1) VLOP resulted in a decrease of damaged bags.

2) VLOP did not always reduce damage in origin ports.

3) Containerization is the best way to ship moisture sensitive products.

4) The season has more effect on the percentage of bags wet than on the percentage of bags torn.

5) Water damage may be as much related to the shipping company and its operation as to the shipping mode.

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I would also like to thank Mrs. Winn Bedford. Her support while I wrote the thesis has been invaluable.

Finally, I want to thank Andy Taylor, Scott Kibler and Jason Vallier for their patience and support during the two years' data entry process. And I thank Laura Bix, Kiley Thayler and Josh Emerson for their friendship.

I dedicate the thesis to my parents and brother in People's Republic of China and thank them for their support and understanding.

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Chapter 1

INTRODUCTION

Background

The United States Government purchases a variety of American agricultural products, including corn soya blend, cornmeal, milled rice and vegetable oil, and ships them to food aid programs in developing countries all over the world. The United States Department of Agriculture's Commodity Credit Corporation (USDA/CCC) is responsible for administering the purchase and distribution of the food. This includes specifying packages and monitoring the quality of logistical systems.

The packages of interest in this thesis are multi-wall paper bags used for corn soya blend (CSB), USDA/CCC's most complex blended and fortified grain product. The multi-wall paper bags have an inner plastic liner and the bags are sealed in a manner that protects the CSB from moisture, insects and mold.

But paper bags are vulnerable to breakage, especially in break bulk logistical systems, like that used by USDA/CCC. In break bulk systems, packages are not unitized or containerized, and so each bag is repeatedly handled one by one. Breakbulk loading occurs in all USDA shipments except when containerized. It is common for a few bags to break during the ship loading operation. Prior to 1994, damaged bags were left in the ship's hold, in time causing mold to grow and weakening the undamaged bags.

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USDA contracts with the steamship carriers who are responsible for loading the ship, and the carriers hire the stevedores. Several steamship carriers participate in this program: Sealand, Waterman, Afram, Crowley Caribbean and etc. They are responsible for the cargo damage and loss which occurs in loading, unloading and the overseas transportation. On the behalf of USDA/CCC, the consignees in discharge ports make the marine claim computation and file claims against the steamship companies.

In the past, the steamship companies allowed bags which are broken during loading to remain onboard ship in order to improve the ship loading productivity. Furthermore, it was easier to account for damaged bags at discharge than to justify a short count when loading.

The MSU School of Packaging has developed two shipping damage databases for USDA/CCC. One is for ocean transit damage claims. The second database documents vessel loading observations. The vessel loading observation procedure (VLOP) was instituted in August, 1994 to document whether damaged bags are removed from the ocean vessel and are not shipped, in order to prevent mold and other contamination from damaging the sound bags.

Purpose of the Study

The purpose of this study is to investigate whether overall shipping damage is reduced by removing torn bags from the hold. If damage is reduced, it seeks to find how much. At the same time, it statistically analyzes whether there are some other possible elements correlated with damage. This research is designed to achieve 3 goals related to the effective method to reduce damage during overseas transportation, which are as follows:

a. To analyze whether (and by how much) the vessel loading observation procedure has really reduced damage.

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b. To determine whether some other elements are related to damage, such as loading dates, shipping vessels (container, barge), loading ports and discharge ports.

c. To predict the best conditions to ensure the least damage during transportation.

Research Questions

a. Is there any damage reduction due to the vessel loading observation procedure? How much?

When it implemented VLOP, USDA hypothesized that the damage would be reduced. Because when the leaking bags are left in the ship's hold, interspersed with sound bags, they can cause even more damage as the spilled food contaminates other bags. Removing damaged bags from holds before shipping should reduce the damaged claims.

b. Which ports (origin and discharge) have the least damage? Which have the most?

Memphis and Tennessee might be assumed to be the origin ports which have the least damage. Memphis handles more USDA/CCC CSB tonnage than any other port and would be expected to have more experience with quality control. Furthermore, Memphis is the only port which does not use unionized labor, and the workers may be easier to supervise.

Discharge ports in India might have a relatively lower damaged rate, because USDA has investigated the performance of multi-wall paper CSB bags in India. Such attention may help to reduce the damage rate.

c. Which kind of shipping vessel (container, LASH barge, break bulk) has the least damage? Which has the most?

Previous studies show that CSB is best shipped via container and least effectively via LASH barge (Miteff and Twede 1990). Containerized cargo is handled fewer times than break-bulk loaded cargo. We assume that it will still be true in this study, although it has

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been reported that the single LASH barge carrier (Waterman) has improved operations since 1990.

d. Which month has the least damage? Which has the most?

Moisture which is ever present during ocean shipping, is most prevalent in some barges and break-bulk vessels in transit from cold to warm climate, condensing on the cargo . When handled, wet paper bags can easily break or become moldy (Miteff and Twede 1990). Since the CSB is shipped to hot destinations, it could be hypothesized that winter should cause the most damage (because of temperature changes during shipment result in condensation) while summer should cause the least.

e. Which shipping company has the least damage? Which has the most?

APL and Sealand are the shipping companies which are using containerized shipping vessels. If containerization is supposed to reduce damage, it can be hypothesized that APL and Sealand would have the least damage. Afram, Crowley Caribbean and Lykes are the shipping companies which are using break-bulk ships, which are expected to have the most damage. The Waterman company's LASH barges are also loaded break-bulk. Previous studies have found that Waterman was the shipping company which has the most damage.

The answers to these questions will provide important feedback to USDA/CCC about the quality of their logistical system. Most importantly, the thesis shows the effect of the vessel loading observation procedure (VLOP) as a quality management tool.

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Chapter 2

LITERATURE REVIEW

The Product: Corn Soya Blend

One of the main products shipped by USDA/CCC is corn soya blend (CSB). It is a nutritionally blended and fortified cereal product of enriched cornmeal and soy flour, which comprised 70% of all commodities shipped CARE/India during calendar year 1989 (Miteff and Twede 1990).

CSB plays a very important role in rescuing children from starving in developing countries, because it is a high protein nutritious food. For example, CSB is provided to the Indian Government's Integrated Child Development Services where preschool and day-care children, at approximately 140,000 sites, obtain educational, health, and food assistance. Any loss of product, as well as program disruptions resulting form delays in delivery (e.g., reconditioning damaged bags), is considered significant.

CSB is also vulnerable to damage from moisture, mold and insects. Therefore it is packaged in strong multi-wall paper bags of the following construction: the outer ply is 60 LB, wet strength natural kraft, the two mid plies are 50-LB kraft paper, and the inner liner is 2.5 mil linear low density polyethylene. The bags are heat sealed, including a fully sealed liner (Miteff and Twede 1992).

Types of Cargo Vessels

USDA/CCC employs three types of cargo vessels: break-bulk ships, LASH barges and container ships. Each type of ship and its loading operation will be described in this section.

Break-bulk cargo vessels can be classified according to their hull design and construction. The 'tween-deck type of vessel has decks below the main deck, which may run the full length of the vessel or be divided into sections, creating separate hatches. A vessel with 'tween decks is very suitable for general cargo, as not only is the cargo space divided into separate tiers, but also the 'tween deck prevents too much weight from bearing on the cargo at the bottom of the hold. This type of vessel also makes for better stowage of heavy bagged cargo, such as sugar and cement, as the weight pressure in the lower holds, which sometimes causes the bags to split, is reduced (Branch 1989). The ships are loaded in a break-bulk manner.

A number of cargo ships are designed for carrying a particular commodity, or group of commodities. Grain products like CSB utilize barge carriers, container vessels and break-bulk ships. USDA/CCC chooses carriers on the basis of lowest landed cost, and bids are submitted for each contract. There is a cargo preference program which ensures that some of the carriers are U.S. owned.

"Break-bulk" is used to describe cargo consisting of items which can be handled manually, and are stowed piece by piece into the hold of a ship. There are of course variations in the manner in which break-bulk cargo can be transported to and from the port; it can be transported by rail or by road. Typically, break-bulk cargo for export passes through the following sequence of events: (Packing for Profit 1973)

Packing for export: After manufacture, goods are packed to protect them from the hazards of the export journey.

Storage: Typically, each package may be loaded by hand on to a trolley, taken to storage, and stacked by hand on the floor or in racks until required. Most CSB bags are conveyed directly into a waiting railcar.

Dispatch: Goods are taken from store and prepared for export. Each package must be labeled, and then loaded by hand on to the vehicle for transport.

Unloading the vehicle and removing the cargo to store: To unload the vehicle, each package is transferred on to a pallet belonging to the port concerned. A large number of packages are stacked on to each pallet, which is picked up by a fork lift truck and placed in store in the transit shed.

Transport to quay: When the ship is to be loaded with cargo stored in the transit shed, the pallet loads are transported by fork lift truck on to the quay, where they are exposed to the weather until stored in the ship's hold. The cargo is also exposed to accidental damage and to pilferage.

Loading into hold: The pallet-loads are lifted by crane, either on the quay or on the ship, or by the ship's own derrick and lowered into the hold. Each package is removed by hand and stacked into the hold.

Unloading the ship: Instead of pallets for unloading, cargo nets may be used. Packages are loaded by hand into the net, suspended from the crane or ship's derrick, which transfers the goods to the quay. Each package is again unloaded by hand, either on to a pallet for transfer to shed by fork truck, or on to a trolley, from which it is again manually unloaded into the shed.

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Tallying: The tallying operation is complicated by the haphazard methods of unloading. Labeling or shipping marks are often obscured or removed by the intensive handling of individual packages, increasing both the time taken over tallying and the risk of loss.

Loading to vehicle: Cargo stored in the transit shed is taken to the vehicle, typically on a storage pallet handled by a fork lift truck, or on a trolley loaded by hand. Further manual handling is required to transfer the goods on to the lorry or into a rail wagon.

Unloading of vehicle: At its final destination, the consignment is manually unloaded once again from the vehicle to the consignee's premises.

An increasing number of ocean-going barge carriers are now in operation throughout the world. The USDA/CCC often uses LASH barges. The LASH (lighter-aboard-ship) type of vessel emerged in the late 1960s and a limited number are now operating throughout the world. This type of ship enables barges to be carried from one port to another, thus combining inland waterway with ocean transportation. Each barge is hauled onboard over the stern by a 510-ton traveling gantry crane and then dropped into the desired position on the mother ship. After offloading in ocean ports the barges are towed along the various inland waterways, providing a form of door-to-door service with a high speed delivery (Branch 1989).

Advantages of LASH service include through rates/bills of lading; no intermediate handling during transfer to and from the ship, thereby reducing cost and permitting competitive rates to be quoted and faster transits attained; less risk damage/pilferage low risk of cargo delay as the barges are lowered into water immediately on arrival at each port and likewise the barges are lifted on the LASH vessel, thus reducing time spent in port or

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its environs to a minimum. LASH barges can be loaded in shallow ports. Moreover, through the individual barges serving a variety of ports, it permits the LASH vessel to rationalize severely the ports of call to maintain good ship utilization.

In the USDA logistical system, the LASH barges are loaded in a break-bulk manner at a port on the Mississippi River (usually Memphis), and are towed to New Orleans where they are lifted onto a mother ship. The mother ship then sails for a discharge port where the barges are lifted off and towed into port. The Waterman steamship line operates the barge system, and is a U.S. owned ship line.

Container vessels are becoming increasingly predominant in many cargo liner trades (Wood 1980). Containerization is considered the most successful solution to the problem of moving cargo in international trade (Sauerbier and Meurn 1985). Containerization has achieved its primary purpose of minimizing the handling of cargo. It ensures the efficient, reliable, and rapid delivery of the undamaged goods with through-transportation that can utilize all modes of transport. A shipper will stow (a term preferable to "stuff") a container, and the consignee will unload ("strip") the container. The cargo is only handled twice, which fulfills the objective of containerization. There is no doubt that this type of tonnage which permits complete integration with other forms of transport, thereby offering a door-to-door service, has become very popular (Branch 1989).

Most of the commercial tonnage on liner cargo services today is containerized. In the long run containerization keeps costs to a minimum and somewhat below the displaced 'tween-deck tonnage, thereby helping to stimulate international trade. Containerization also reduces damage because cargo is not handled at the ports. More recently the multi-purpose type of container vessel has been developed with an integral ramp being provided

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as part of the ship's equipment. This permits both container and vehicular cargo to be conveyed and enables flexibility of berth/port operation as no portal is required.

USDA uses some containerized service, but less than most international shippers. The reasons include: higher cost, inadequate facilities in receiving ports, and cargo preference rules which favor break-bulk carriers. Two containerized steamship lines carry USDA/CCC cargo: American President Lines (APL) and Sealand.

Break-bulk vessels, lash barges, and containers are the 3 types of ocean conveyance used in shipments. The volume of cargo, breadth of the logistical system, and congressional cargo preference mandates, require that all types of conveyances are used. Each mode provides advantages and disadvantages. For example, LASH barges carry very little draft and require minimal berthing space at port; they are ideal for use in discharging cargo in shallow ports and congested ports where berthing space is at a minimum. Break bulk vessels offer the ability to carry large volumes of cargo efficiently in their cavernous hatches. The use of containers minimizes handling-related damage by circumventing the use of port labor and , in comparison, better protects cargo from moisture and handling. Experts recommend giving consideration to the type of product intended for shipment in relation to the mode of its transportation overseas.

The Possible Aspects Which May Influence the Damage Rate of Loading Ports

Before starting to load the vessel, it is necessary to proceed with cleaning and inspection of the holds. Cleaning of various compartments may be undertaken as they start to clear during the previous process of unloading. Each compartment should be carefully swept. After carrying a bulk cargo this operation is important. Carrying certain goods after a bulk cargo even necessitates washing the hold. Without this operation, it might be

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possible for the residue leakage of oil, syrups, etc., to contaminate the newly loaded cargo. This is the most important reason that might be related to damage (Reische 1970).

A careful examination of cargo before loading will generally disclose bad conditions if they exist. All goods are not equally susceptible to damage before loading. Products perishable through fermentation are perhaps the first to be considered. Their condition almost always gets worse during their stay in the hold. Such products not only arrive at their place of delivery in bad condition, but can also damage other products stowed near them. Therefore, it is not sufficient of require statements of reservations in order to avoid future trouble. It is also necessary to take all precautions relative to their stowage. One should even refuse to take on board questionable goods, if this is necessary (Stowage Handling and Transport of Ship Cargoes, Garrote).

USDA's Federal Grain Inspection Service (FGIS) is responsible to ensure that ships' holds are clean. FGIS also inspects the cargo before loading to ensure that it is sound and free from infestation.

In dry weather the ventilators may be trimmed to force the wind down into the hold, and the hatches left open. If, on the contrary, the air is extremely damp the holds may be ventilated by suction. During rain the hatches must be closed. This operation is very helpful for loading moisture sensitive cargoes, like corn soya blend (Sauerbier 1985). Unfortunately, many vessels employed by USDA, especially LASH barges, do not have adequate ventilation ability.

The 'tween-decks are closed in the course of loading as the compartments below them are filled. It is advisable to place a tarpaulin over each on of the intermediary hatches, even in cases where the nature of the cargo carried does no require it, so that the steam

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smothering lines can be used without any risk of the steam entering a compartment where no fire has broken out. At the time of closing the hatches make sure that the cases contained in the compartment of compartments below are well stowed and cannot shift.

At sea, it is still necessary to watch carefully the condition of the cargo on board. The ventilators should be open and turned in the proper direction to ventilate the holds if the weather is good. On the contrary, they should be turned to leeward so that they will not catch the wind if it is very cold or rainy, and closed hermetically in rain or bad weather when spray and seas come over the deck. Certain ventilators of special design can remain open without fear of water entering, especially if their stacks are long enough to raise the cowls high above the deck level. Nevertheless, it is best to be able to close them, in order to regulate ventilation properly. The temperature of the air, and that of the sea water have a considerable influence on the formation of condensations and vapors in the hold. Ventilation must be watched especially closely when there are abrupt variations in sea and air temperatures.

General regulations determining the rules governing stowage of cargo on board merchant vessels say that "all goods susceptible to humidity must be protected by suitable flooring and protection". In all cases, dunnage and protection must be sufficient and suited to prevent damage to the cargo. It is important to make sure that all the water condensed on the sides of the ship runs into the bilges. To obtain this result place pieces of dunnage across the limber boards up to just above the filling boards in the rounding part of the hold (Schumer 1974).

Before loading is started, the condition of the equipment to be used should be examined. See that the winches and blocks are in good working order, that the cargo

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booms and their rigging are correctly trimmed to support the strain to be put on them. The number, quality , and fitness of the various slings must be checked, the separating cloths and the dunnage must be ready (Schumer 1974).

Loading includes in practice two distinct operations: loading in itself and stowage. Bags are loaded by means of rope slings, bag slings or pallet slings. In the hold, bags must be carried manually by workers and moved to stowage position. The use of hooks should be absolutely prohibited, especially for paper bags. Crosswise dunnage is helpful. The protection should be effective, and contact with iron absolutely avoided.

The bags should be stowed, laid flat, end to end, on one another in vertical piles. One must be very careful, in the course of the stowage, to prevent all contact with the frames between the side battens or with the uprights of the watertight bulkheads. The longitudinal stringers should be protected with wood, and contact between the cargo and all protruding parts such as ringbolts, brackets, etc., should be avoided, or the bags will be cut under the pressure of the load (Cargo Ship Loading, 1957).

The Possible Aspects Which May Influence the Damage Rate of Discharge Ports

The form of cargo-handling equipment employed is basically determined by the nature of the actual cargo and the type of packing used. In developing countries, there might be a problem of according equipment lack.

An adequate supply of skilled longshore labor is the prime requisite of any ocean terminal. Regardless of how well a port may be equipped to handle cargo mechanically, the efficiency obtained is dependent upon labor.

Use of unsuitable or badly adjusted slings causes the dislocation or breakage of packing and the damaging of their contents. Lack of care on the part of the stowers, the

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use of hooks or bars, make up the damage for which the stevedore is responsible and which should be charged to him. Badly supervised unloading and banging of loads underneath hatch coamings, hatch beams, and against obstacles on deck are frequently causes of handling damage.

Those on board must decide the moment at which the rain tents should be placed over the hatches, when rain comes in the midst of operations. It is prudent in tropical ports to take this precaution in advance, because when a heavy rain begins to fall the men seek shelter for themselves rather than protect the cargo. Without generally being very heavy, damage from handling almost always takes place. It is the most frequent in practice, and is also the easiest to take safety precautions against (Garrote 1952).

The Possible Aspects Which May Influence the Damage Rate in Different Seasons

The factors related to month which can influence damage are temperature and humidity.

A rise in temperature can cause condensation on the cold cargo. This condensation can be combated by increasing the ventilation. In tropical water, the rule is to ventilate during the hours of the day when the air is not overheated by the sun.

Loading in rain or snow brings a great quantity of water into the holds. This should always be avoided, even if the cargo loaded at the time will not suffer from dampness; because goods which may be loaded a few days later in the same port of at another port of call might not be able to stand it. Be careful of ores, sand, etc. in bulk, as well as floated timber, all of which give out a great quantity of moisture, especially if the ship is going into warm regions. An intense evaporation may then take place capable of damaging goods stowed nearby and even in upper compartments, when the intermediary hatches are

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not closed absolutely tight. Certain kinds of goods, coming out factories still warm and loaded at once, give out a large quantity of moisture, which condenses on the overhead. The water thus formed may drop down on the bags at certain points only, causing quite serious damage. To avoid this, leave the hatch open for several hours if possible and ventilate thoroughly.

It is important, when passing directly from a temperate country in winter to not regions in the tropics, to be sure that the temperature of the cargo is not lower than that of the saturation. For this purpose a hygrometer of wet bulb thermometer may be used. Reading such instruments will make it possible to determine the degree of humidity of the atmosphere and to know if ventilation is advisable. If not, wait till the temperature of the cargo has risen sufficiently (Wood 1983).

In passing from warm countries to cold countries, on the contrary, it is necessary to ventilate energetically from the very beginning of the passage. All the more so because one can expect bad weather which may require stopping all ventilation at the very time that the temperature is continuing to drop outside. The cooling of the cargo and consequently of the air in the different compartments should be carried out with all the speed possible in view of such an eventuality. When the temperature outside nears the freezing point, it is almost always preferable to cease ventilating, because even if the cargo itself will not suffer from the effects of a low temperature, installations on the ship (water pipes, etc.) may be damaged (Abrahamsson 1980).

In conclusion, when the exterior temperature is rising, control ventilation very carefully. When it is falling, ventilate very energetically as long as possible.

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The Stowage of Bags and the Way to Reduce Leakage

The CSB bag specified by the USDA/CCC is designed to withstand the multiple handlings and impacts in a break-bulk system. Over sixty percent of USDA cargo was carried on break -bulk ships during 8/3/93-8/2/94 and over seventy percent during 8/3/94-8/2/95. The USDA/CCC requires CSB packages to have a moisture barrier, since the dry blended and fortified food can easily grow mold if it becomes moist. Multi-wall paper bags, heat sealed with a plastic liner, are the generally accepted standard package for such moisture sensitive products. But paper bags, are vulnerable to breakage when they are handled carelessly (Miteff and Twede 1990).

Since they are vulnerable to impact and puncture damage, paper bags need to be handled with special care. Handbooks and manuals dealing with marine cargo operations recommend specific handling and stowage practices. For example, if the bags contain coffee, cocoabeans, or any other commodity that may leak and must not touch the ship's deck, the bags should be stowed over separation cloths. Any leakage will be caught in the cloth and can be rebagged before being contaminated. The use of these separation cloths is also advisable when stowing bagged commodities over other cargoes (Sauerbier and Meurn 1985).

Paper bags of cement or plaster are very vulnerable to the hook, but they are often small enough and light enough to allow the longshoremen to lift them easily. USDA/CCC's CSB bags weigh 55 lbs. Every effort should be made to prevent hooks being used on such cargoes. In addition, the bags must not be allowed to rest on the edges of the sweat battens, stringers, upper ends of vertical dunnage, or other surfaces that might

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be present along the periphery of the hold. If they rest on these surfaces, they will be torn as the cargo settles during the voyage.

Another important factor which can result is severe damage is mold. When open-hatch vessels are loaded in wet weather, moisture is trapped in the hold. Depending upon how early during the voyage that the bags became wet, and how many broken CSB bags were stowed during loading, mold can easily grow on the surface of bags throughout the stow. The spillage concentrates on bag ends in the stow because the contents of broken bags dribble through stacks of sound bags depositing CSB on the exposed bag ends. The mold eats through the bag ends, which are more exposed to spillage sifting through stacks and to moisture. Lack of quality control during vessel loading operations can result in a boatful of moldy bags.

It has been recommended that damage could be reduced by better supervision of ship loading operations stateside and providing an incentive for taking broken bags out of the stow. This will require a change in behavior, and can be aimed at either the longshoremen themselves or their supervisors. It is also recommended to consider a performance evaluation of vessels and stevedores based on their ability to provide quality service. CSB and commodities packed in paper bags must be shipped clean and dry. This may require more direct supervision or inspection of loading procedures (Miteff and Twede 1990).

From August 94, vessel loading observation procedure (VLOP) started to be instituted. An FGIS inspector observes the ship loading to make sure that bags that are damaged during loading removed from the ocean vessel and are not shipped. The inspector submits a certificate of inspection detailing the number of bags damaged and removed (or damaged and not removed) from the ship's hold.

Copies of the VLOP certificates, as well as copies of damage claims, have been used to form the data in this thesis.

Chapter 3

RESEARCH METHOD

Research Questions

a. Is there any damage reduction due to the vessel loading observation procedure? How much?

b. Which ports (origin and discharge) have the least damage? Which have the most?

c. Which kind of shipping vessel (container, barge, break bulk) has the least damage? Which has the most?

d. Which month has the least damage?`

e. Which shipping company has the least damage? Which has the most?

Research Instrument

There are two primary databases used in this research. The claim database deals with the overseas transportation claims issued from the discharge ports. The claims have all been sent to MSU from the USDA/CCC's Kansas City Commodity office which collects for the damage caused by carriers. MSU enters the data into a computer database. The relevant fields about damage include: "bags torn", "bags wet and others" and "total damage". The claim database consists of 4,214 reports including 52 kinds of product, from 10/11/90 to 7/27/95. This research uses only the CSB claims for a two year period.

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The second database compiles Commodities Inspection Certificates (CIC) which are issued by the FGIS inspector who observed the ship loading operation. This database contains 987 reports.

The vessel loading observation started in August, 1994. From then on, the practice was instituted of having a USDA/FGIS inspector observe the ship loading for all USDA/CCC commodities packaged in paper bags, including corn soya blend, cornmeal, wheat soya blend, soy-fortified corn meal, soy-fortified sorghum grits, and flour. The inspector is responsible to make sure damaged multi-wall paper bags are removed from the vessel holds or barge. He/she counts the number of damaged bags removed from the ship. Copies of the commodity inspection certificates are sent to the MSU School of Packaging where they are entered into a computer database. The most important information on the certificate includes: loading port, steamship company, stevedore company(loading company), total bags loaded, bags removed, damaged bag loaded. The data from the commodity inspection certificates is entered into corresponding fields.

It is important to note, however, that while the certificates list the commodities being observed, they do not separate the damage data by commodity. The number of CSB bags damaged can not be ascertained because more than one commodity is usually listed on a certificate. But since the commodities are all packed in multi-wall paper bags, this research will assume that the package perform in a similar manner. Thus, average rates of damage, including the percentage of damaged bags removed and the percentage left in the hold will be used in this research.

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For this study, the research objective is to compare damage situation of corn soya blend between the periods of 8/3/93-8/2/94 and 8/3/94-8/2/95, one year before and one year after the VLOP was implemented.

The database program which we are using is Reflex database 2.0.

Analysis Method

1. Method for question a: Is there any damage reduction due to the vessel loading observation procedure?

Not all of the loading ports on claim database have implemented VLOP, just a few of them have. To figure them out we enter "corn soya blend" in the product field of VLOP database during 8/94-8/95 period. The report coming out shows that only six ports have implemented VLOP: Lake Charles, Memphis, New Orleans, Orange, Pascagoula, Pensacola.

First of all, we need to know whether there is any damage reduction for corn soya blend after the vessel loading observation was implemented in above six ports, i.e. whether the vessel loading observation plays an important role in the efforts we make to decrease overseas transportation damage. To evaluate whether there is obvious damage decrease between the two periods mentioned above, the primary parameter which can describe this situation is the total damage percent. There are other four important parameters in the claim database which are related to damage analysis: bags torn percent, wet bags and other damage percent, salvage percent and lost pounds. Their calculation formulas are shown below:

1) Total damage percent
   = (Bags torn + Wet bags and other damage) / Total bags loaded

2) Bags torn percent
   = Bags torn / Total bags loaded

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3) Wet bags and other damage %
= Wet bags & other damage / Total bags loaded

4) Salvage percent
= (Salvage weight / (Total damage bags x Package weight)) / Total bags loaded

5) Lost pounds
= (Total damage x Package weight) - Salvage weight

As mentioned above, the claim database includes a great variety of agricultural products for Food for Peace Program. To analyze only the data for corn soya blend, the whole database is filtered by entering "corn soya blend" in the product field, forming a new Corn Soya Blend Database(CSBDB). Next the filtered database is sorted by the two periods of interest: 8/3/93-8/2/94 and 8/3/94-8/2/95 and only 6 ports that have implemented VLOP are selected. Then the program can automatically add up the numbers in the fields we need during the specific period and get the percent for each port.

2. Method for question b: Which ports (origin and discharge) have the least damage? Which have the most?

We need to do five statistical reports separately to know the above five parameters for each port (loading port or discharge port). All of the reports are sorted by origin port (discharge port) from the CSBDB. For total damage percent report, four columns are created with the headings: loading port (discharge port), total bags, total damage and total damage percent. From the results, it will be very clear which loading ports have the least total damage percent, and which have the most in the specific period. Then the same work is done for the second period. Comparison of the results between the two periods will show that whether the total damage percent has been reduced for each loading port (discharge port), or for some of them.

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Figuring out which ports have the least damage is not enough. It is important to learn that what is the main part of the damage which has been reduced: torn bags or wet bags and other damage. This leads to the other reports: Bags Torn Report and Wet Bags and Other Damage Report.

After damage occurs, there are actions can save part of the cargo. Some of the products that are not contaminated can be salvaged to reduce damage. When cargo arrives at the discharge ports, broken or excessively moldy bags are salvaged. They are dumped into locally procured "reconstitution bags". The shelf life of these commodities are reduced. High rates of reconstitution represent a potential health hazard since reconstituted bags could contain bacteria and/or insects. It is important to study reconstitution rates and loss rates when evaluating packaging or carrier performance with respect to loss and damage. Furthermore, salvage is a hidden cost, which also obscures real package and carrier performance measures. So salvage and lost pounds are also important criteria for damage statistics for discharge port. By comparing reports for the two different periods, 8/3/93-8/2/94 and 8/3/94-8/4-95, the following can be identified:

(1) Did all of the VLOP origin ports reduce the damage after VLOP? Did non-VLOP origin ports reduce the damage?

(2) If the damage was decreased, what was primarily responsible for damage reduce, torn bags or wet and others?

(3) Which ports (loading ports and discharge ports) always have the least damage? Which have the most?

(4) Which ports (discharge ports) have the most salvage percent? Which have the least?

(5) Which ports (discharge ports) have the least lost pounds? Which have the most?

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There is a field called Damage Loaded in VLOP. The number of damaged bags which are not unloaded is entered in this field. We are interested to know:

(6) Is damaged bags loaded responsible to the resulting percentage of damaged bags received?

The loading ports which have been active in the food aid program are located in different region, we are curious to know:

(7) Is geographical position of the loading ports related to the damage rate?

3. Method for question c: Which shipping vessel has the least damage? Which has the most?

Using the same five parameters-- bags torn percent, wet bags and other damage percent, total damage percent, salvage percent and lost pounds --the data can be analyzed to identify which shipping method has the least damage and which has the most.

From the above analysis, the following can be identified:

(1) Which shipping method always has the least damage? Which has the most?

(2) Which shipping method has the most salvage percent? Which has the least?

(3) Which shipping method has the least lost pounds? Which has the most?

4. Method for question d. (Which month has the least damage? Which has the most?)

By analyzing the three parameters: bags torn percent, wet bags and other damage percent, total damage percent, the shipping months with the least damage and those with the most can be identified.

5. Method for question e: Which shipping company has the least damage? Which has the most?)

Using the three parameters: bags torn percent, wet bags and other damage percent, total damage percent, the shipping company which has least damage and the one with the most can be identified.

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Chapter 4

DATA ANALYSIS

Analysis for Research Question a: Is There any Damage Reduction Due to the Vessel Loading Observation Procedure? How Much?

To answer this question, analysis is limited to the six VLOP ports mentioned in Chapter 2, comparing the damage situation one year before and one year after VLOP was implemented.

Table 1. Comparison of general shipping information of the six VLOP ports between 8/3/93-8/2/94 and 8/3/94-8/2/95. (Claim database)

	8/3/93-8/2/94	8/3/94-8/2/95
Total CSB Bags Loaded	3,077,437	3,928,836
Total Bags Damaged	74,940	68,000
% Damaged	2.44%	1.73%
Total Bags Torn	66,059	49,913
Percentage of Bags Torn	2.15%	1.27%
Total Bags Wet & Others	8,881	18,087
Percentage of Bags Wet & Others	0.29%	0.46%
Total Percentage of Salvage	82.54%	82.33%
Total Percentage of Lost Pound	0.42%	0.31%

Table 1 shows that 3,077,437 bags corn soya blend were shipped through the six VLOP ports during 8/3/93-8/2/94, while 3,928,836 bags were shipped during 8/3/94-8/2/95, after the VLOP was implemented. This is an increase of 851,399 bags.

But 6,940 fewer bags were damaged in the year after the VLOP was implemented, representing a 29.1% reduction in damage, from 2.44% to 1.73%, as shown in Table 2.

The damage decrease can be attributed to the vessel loading observation instituted in August 1994. The percentage of bags torn was decreased greatly by 43.26%, and the percentage of lost pounds were also significantly reduced by 26.19%. Unfortunately, the Reflex database was unable to calculate the statistical significance of the difference.

Table 2. Bags removed and loaded in different VLOP ports during 8/94-8/95. (VLOP database)

Loading Port	Total Bags	Bags Removed	% Removed	Dmd. Bags Ld.	% dmg. Ld.
Lake Charles	1,395,823	8,194	0.59	1,270	0.09
Memphis	4,446,703	14,497	0.33	72	0.00
New Orleans	566,613	3,182	0.56	1,114	0.20
Orange	83,102	732	0.88	12	0.01
Pascagoula	124,715	331	0.27	83	0.07
Pensacola	3,633,557	4,007	0.11	2,183	0.06
Total	10,250,513	30,943	0.30	4,734	0.05

On the other hand, from the VLOP database, Table 2 shows that there were 0.3% damaged multi-wall paper bags removed from the hold of the ship in the loading process during 8/3/94-8/2/95. Since the VLOP data does not differentiate among its over eight commodities, the percentage numbers are most relevant.

By adding the 0.30% of bags removed from the hold due to VLOP to the 1.73% claimed in damage after VLOP, it can be seen that a combined 2.03% of bags were damaged.

This result shows that VLOP did reduce the number of damaged bags received and the cost of shipping damaged cargo, meanwhile it also reduce overall damage.

The percentage of wet and others was increased by 72.41%. This result indicates that while VLOP helped to reduce the percentage of bags torn, it did nothing helpful to reduce

the percentage of the percentage of wet and others. Water damage is related more to climatic conditions.

Despite the large increase in wet bags, the salvage rate was actually reduced slightly by 0.25%. This may be due to the absence of spilled product which exacerbates the deterioration and mold due to water. Unfortunately the claim database does not differentiate mold damage.

Analysis for Research Question b. Which Ports (Origin and Discharge) Have the Least Damage? Which Have the Most?

- **Loading ports:**

Question a. investigated the six ports which have implemented VLOP to analysis the comparison results. The balance of this thesis' analysis will include some other ports which have not implemented VLOP to compare their performance. This can also help the government to find whether there are some other ports which need to implement VLOP.

Loading ports which serve the USDA/CCC food aid programs vary from 1993 through 1995. Because the research objective is to compare the damage rate of the same ports before and after the vessel loading observation procedure, only the ports which have been active in both years were chosen for analysis. There are nine such loading ports : Lake Charles, Long Beach, Memphis, New Orleans, Orange, Pascagoula, Pensacola, Seattle, Tacoma.

Table 3 shows that six of the nine ports experienced reduced damage. Among the VLOP ports, four out of six experienced reduced damage: Pensacola, Orange, New Orleans and Memphis.

Table 3. Comparison of percentage damaged decreased after VLOP by loading port. (Claim database)

VLOP	Loading port	% Dmgd. 93-94	% Dmgd. 94-95	% Decreased
•	Pensacola	1.56	0.17	89.10%
•	Orange	1.67	0.60	64.07%
	Long Beach	1.28	0.47	63.28%
•	New Orleans	2.35	1.33	43.40%
•	Memphis	2.87	1.73	39.72%
	Tacoma	1.02	0.72	29.41%

The two ports which had the highest damage reduction are VLOP ports: Pensacola and Orange. Pensacola is the loading port which had the least damage after VLOP and also experienced the greatest damage reduction after VLOP, 89.1%. New Orleans and Memphis had almost the highest percentage of damaged during the first period, but they reduced damage by about 40%. Long Beach and Tacoma also experienced less damage, unrelated to VLOP.

Two VLOP ports actually increased damage: Lake Charles (9% increase) and Pascagoula (40% increase). See Table 4. Seattle also had a high damage increase (along with tonnage decrease), unrelated to VLOP.

Table 4. Comparison of percentage damaged increased after VLOP by loading port. (Claim database)

VLOP	Loading port	% Dmgd. 93-94	% Dmgd. 94-95	% Increased
•	Lake Charles	2.14	2.33	8.88%
•	Pascagoula	2.41	3.38	40.25%
	Seattle	1.04	3.28	215.38%

All of the VLOP origin ports except Pascagoula reduced their percentage of torn bags received. Again, Pensacola, Orange and Memphis experienced the greatest decrease. See Table 5 and Table 6.

Table 5. Comparison of bags torn percent decreased after VLOP by loading port. (Claim database)

VLOP	Loading Port	% Bags Torn 93-94	% Bags Torn 94-95	% Decreased
•	Pensacola	1.56	0.17	89.10%
•	Orange	1.67	0.60	64.07%
•	Memphis	2.68	1.31	51.12%
	Long Beach	0.76	0.47	38.16%
	Tacoma	0.93	0.59	36.56%
•	New Orleans	1.69	1.22	27.81%
•	Lake Charles	1.81	1.25	25.00%

Table 6. Comparison of bags torn percent increased after VLOP by loading port. (Claim database)

VLOP	Loading port	% Bags Torn 93-94	% Bags Torn 94-95	% Increased
•	Pascagoula	2.38	3.22	35.29%
	Seattle	0.82	3.28	300.00%

As explained earlier, water damage is expected to be unrelated to the VLOP. Table 7 and 8 reflect this fact, and show that Lake Charles and Memphis are primarily responsible for the large total increase in wet and other bags reported earlier.

Table 7. Comparison of the wet and other damage percent decreased of 93-94 and 94-95. (Claim database)

VLOP	Loading Port	% wet & others 93-94	% wet & others 94-95	% Decreased
	Long Beach	0.53	0	100%
	Seattle	0.22	0	100%
•	New Orleans	0.66	0.10	84.85%
•	Orange	0	0	----
•	Pensacola	0	0	----

Table 8. Comparison of the wet and other damage percent increased of 93-94 and 94-95. (Claim database)

VLOP	Loading Port	% wet & others 93-94	% wet & others 94-95	% Increased
	Tacoma	0.1	0.13	30.00%
•	Memphis	0.19	0.42	121.05%
•	Lake Charles	0.33	1.08	227.27%
•	Pascagoula	0.03	0.16	433.33%

Table 9. Relationships between percentage of damaged bags loaded and percentage of bags torn and percentage of wet and others during 8/3/94-8/2/95.

VLOP		% damaged loaded	% damaged	% bags torn
		(VLOP database)	(Claim database	(Claim database)
•	Lake Charles	0.09	2.33	1.25
•	Memphis	0	1.73	1.31
•	New Orleans	0.20	1.33	1.22
•	Orange	0.01	0.60	0.60
•	Pascagoula	0.07	3.38	3.22
•	Pensacola	0.06	0.17	0.17

The VLOP database shows that all damage is not removed. Some ports are better than others. It would be expected that the ports that leave the most damaged bags aboard ship would be positively correlated with high damage out-turn results.

Table 9, in part, confirms this expectation. The three ports with the highest percentage of damaged bags loaded (New Orleans, Lake Charles and Pascagoula) also have high corresponding damage claims for total damage and torn bags. Pascagoula had the highest corresponding damage claims, over 3%. Orange had the least percentage of damaged bags loaded, and the lowest resulting percentage of damaged and percentage of bags torn.

But when the percentage of damaged bags loaded is low, that does not necessarily mean that the resulting percentage of damaged bags received is low. Memphis has the very low percentage of damaged bags loaded of zero, but the percentage of damage is still

relatively high, 1.73%. (The "zero" damaged bags loaded could indicate that a different VLOP procedure is followed in Memphis.) However, Memphis' overall damage has been dramatically reduced (from 2.87%) since VLOP, as shown in Table 3.

The effect of a loading port's geographical location can be shown by classifying them by region, like Mississippi River, gulf coast and west coast, as shown in Table 10. The gulf coast ports and Memphis, the only Mississippi River port, have implemented VLOP; the west coast ports have not.

Table 10. Geographical positions of the loading ports. (Claim database)

VLOP	Loading port	State	Region
•	Memphis	Tennessee	Mississippi River
•	Orange	Texas	Gulf Coast
•	Pascagoula	Mississippi	Gulf Coast
•	Lake Charles	Louisiana	Gulf Coast
•	New Orleans	Louisiana	Gulf Coast
•	Pensacola	Florida	Gulf Coast
	Long Beach	California	West Coast
	Seattle	Washington	West Coast
	Tacoma	Washington	West Coast

Table 11. Comparison of percentage of damaged bags by region. (Claim database)

	8/2/93-8/2/94			8/2/94-8/3/95		
	Tot. Pkg.	Pkg.Dmg.	% Dmg	Tot. Pkg.	Pkg.Dmg.	% Dmg
Mississippi River	1,417,884	40,717	2.87%	2,930,284	50,595	1.73%
Gulf Coast	1,659,553	34,223	2.06%	998,552	17,405	1.74%
West Coast	915,612	10,917	1.19%	410,564	4,525	1.10%

Table 11 shows that the west coast has the least tonnage and the lowest damage percentage. It also shows that the VLOP ports (gulf coast and Memphis) have a lower damage rate after VLOP was implemented.

Table 11 and 12 also classify the ports by region to show the relationship to percentage of bags torn and the percentage of wet and other damage.

Table 12. Comparison of percentage bags torn by region. (Claim database)

	8/2/93-8/2/94			8/2/94-8/3/95		
	Tot. Pkg.	Pkg. Torn	% Torn	Tot. Pkg.	Pkg. Torn	% Torn
Mississippi River	1,417,884	38,055	2.68%	2,930,284	38,416	1.31%
Gulf Coast	1,659,553	28,004	1.69%	998,552	11,497	1.15%
West Coast	915,612	7,315	0.80%	410,564	4,242	1.03%

Table 13. Comparison of percentage bags wet and others by region. (Claim database)

	8/2/93-8/2/94			8/2/94-8/3/95		
	Tot. Pkg.	Pkg. Wet	% Wet	Tot. Pkg.	Pkg. Wet	% Wet
Mississippi River	1,417,884	2,662	0.19%	2,930,284	12,179	0.42%
Gulf Coast	1,659,553	6,219	0.37%	998,552	5,908	0.59%
West Coast	915,612	3,602	0.39%	410,564	283	0.07%

Table 12 shows that Memphis, on the Mississippi River, has the greatest percentage of bags torn, followed by the gulf coast; the west coast is still the best. This result matches the total damage results. It shows a relationship between the percentage of damaged and torn bags and the geographical position of loading ports. A possible explanation is due to the differences in port labor pools in the three regions. Gulf coast longshoremen, in particular, have a reputation for roughness.

Table 13 shows little relationship between water damage and geographic region. This is not surprising, given the fact that all three port regions are, by nature, wet.

- **Discharge Ports:**

Discharge ports which serve the USDA/CCC food aid programs did not vary much from 8/93 through 8/95. Eighteen discharge ports are involved in the two years: Assab, Bombay, Calcutta, Callao, Djibouti, Jamnagar, Madras, Manila, Maputo, Massawa, Matarani, Mombassa, Paradip, Puerto Cortes, Salaverry, Santo Tomas, Tamatave, Visakhapatnam.

Table 14. Comparison of discharge ports' percentage damaged decreased of 93-94 and 94-95. (Claim database)

Discharge port	% Dmgd. 93-94	% Dmgd. 94-95	Change
Jamnagar	5.26	2.80	-2.46
Tamatave	4.28	5.67	1.39
Matarani	2.82	1.27	-1.55
Bombay	2.56	5.85	3.29
Paradip	2.53	2.33	-0.20
Calcutta	2.15	1.54	-0.61
Visakhapatnam	1.64	1.44	-0.20
Salaverry	1.64	0	-1.64
Madras	1.31	1.16	-0.15
Santa Tomas	1.13	0.81	-0.32
Manila	1.11	1.32	0.21
Callao	0.61	0.24	-0.37
Djibouti	0.43	0.10	-0.33
Mombasa	0.28	0.30	0.02
Assab	0	1.19	1.19
Puerto Cortes	0	0	0
Maputo	0	0	0
Massawa	0	0	0

Table 14 shows that six discharge ports experienced more than two percent damage: Tamatave, Jamnagar, Bombay, Paradip, Matarani and Calcutta. Four of these experienced reduced damage after VLOP.

Table 14 shows that most of the discharge ports experienced reduced damage after VLOP. But five of the eighteen ports had more damage. Among the discharge ports which have higher percentage of damage after VLOP, Bombay is the worst. Its damage increased from 2.56% to 5.58%, due primarily to one shipment with a very large water damage loss, 4.01%.

It has been shown that the percentage of damage is closely related to the percentage of bags torn. Table 15 shows that this is the case for the discharge data as well (except for Bombay where the large loss due to water damage). The ports of Jamnagar, Tamatave,

Matarani, Paradip and Calcutta had over 2% damage. All of these except Tamatave experienced fewer torn bags after VLOP. Table 16 shows that the majority of the discharge ports received fewer torn bags after VLOP.

Table 15. Comparison of the percentage of bags torn decreased after VLOP by discharge port. (Claim database)

Discharge Port	% Bags Torn 93-94	% Bags Torn 94-95	Change
Jamnagar	4.66	2.66	-2.00
Tamatave	3.98	5.42	1.44
Matarani	2.82	1.27	-1.55
Paradip	2.53	1.50	-1.03
Calcutta	2.15	1.25	-0.90
Salaverry	1.62	0	-1.62
Visakhapatnam	1.50	1.23	-0.27
Madras	1.27	0.91	-0.36
Santo Tomas	1.13	0.81	-0.32
Bombay	1.01	1.58	0.57
Manila	0.93	1.26	0.33
Callao	0.61	0.23	-0.38
Djibouti	0.43	0.1	-0.33
Mombassa	0.28	0.30	0.02
Maputo	0	0	0
Massawa	0	0	0
Puerto Cortes	0	0	0
Assab	0	0.92	0.92

Table 16. Comparison of percentage wet and other damage decreased after VLOP by discharge port. (Claim database)

Discharge Port	% wet & others 93-94	% wet & others 94-95	Change
Bombay	1.54	4.01	2.47
Jamnagar	0.59	0.14	-0.45
Tamatave	0.3	0.24	-0.06
Manila	0.18	0.06	-0.12
Visakhapatnam	0.15	0.26	0.11
Madras	0.04	0.25	0.21
Salaverry	0.02	0	-0.02
Calcutta	0	0.29	0.29
Callao	0	0.01	0.01
Assab	0	0.01	0.01
Paradip	0	0.83	0.83
Maputo	0	0	0
Massawa	0	0	0
Matarani	0	0	0
Mombasa	0	0	0
Puerto Cortes	0	0	0
Djibouti	0	0	0
Santa Tomas	0	0	0

Table 16 shows that Bombay and Madras had a big increase in the percentage of wet and other damage due to a couple of wet shipments. VLOP does not have any effect on whether bags get wet.

Table 16 also shows that most of the discharge ports had zero or very tiny percentage of wet and other damage, except for five ports: Bombay, Visakhapatnam, Tamatave, Madras and Jamnagar. These five discharge ports contribute primarily to the total percentage of wet and other damage. Research could to be done at these specific ports which experienced a high wet rate to figure out how to improve the situation.

Table 17. Comparison of percentage salvaged increased after VLOP by discharge port. (Claim database)

Discharge Port	% salvaged 93-94	% salvaged 94-95	Change
Djibouti	95.92	60.00	-35.92
Jamnagar	95.74	95.57	-0.17
Callao	91.96	54.22	-37.74
Bombay	90.55	90.81	0.26
Salaverry	84.97	---	---
Calcutta	83.03	85.33	2.30
Visakhapatnam	82.41	64.70	-17.71
Madras	82.35	89.60	7.25
Matarani	82.27	84.03	1.76
Santo Tomas	77.02	93.36	16.34
Tamatave	74.42	84.15	9.73
Manila	73.11	88.98	15.87
Paradip	54.31	80.34	26.03
Mambasa	0	78.11	78.11
Assab	---	3.14	---
Maputo	---	---	---
Massawa	---	---	---
Puerto Cortes	---	---	---

Table 17 shows that the ports with the highest (over 90%) salvage rate in 8/93-8/94 were Jamnagar, Djibouti, Callao, and Bombay. Most ports had a better salvage rate after VLOP, except for Djibouti, Callao and Visakapatnam.

Analysis for research question c. Which kind of shipping vessel (container, barge, break bulk) has the least damage? Which has the most?

It should be expected that CSB is best shipped via container and least effectively via barge. Table 18 below indicates that this hypothesis is true. In the consecutive 2 years, barges suffered the highest percentage of damage, while container is the best choice. However, all types of vessel experienced reduced damage after VLOP, even though containerized shipments were rarely involved in VLOP.

Table 18. Comparison of percentage damaged for 3 different shipping vessels. (Claim database)

	Barge	Break-bulk	Container
93-94	2.59	1.72	1.19
94-95	1.86	1.37	0.75
Decrease	28.19%	20.35%	36.97%

Table 19. Comparison of the percentage of bags torn and bags wet and others by different shipping method. (Claim database)

	8/3/93-8/2/94			8/3/94-8/2/95		
	Barge	Breakbulk	Container	Barge	Breakbulk	Container
Bags Torn	2.30	1.53	0.80	1.36	1.05	0.71
Bags Wet	0.28	0.19	0.39	0.50	0.32	0.05

Table 19 shows similar results for torn bags both periods, 8/93-8/94 and 8/94-8/95. Containers were best, followed by breakbulk, and barges were the worst. However, the barge and breakbulk vessels experienced a greater reduction of torn bags after VLOP than did containerized shipments, consistent with the fact that VLOP applied to more barge and breakbulk shipments

The wet and other damage results are more inconsistent. Containerized shipments would be expected to be most dry, but the 93-94 data shows that they had the most water damage. See table 19. This is possibly due to some exceptional conditions not explored by this research.

Regardless, it is still recommended to ship CSB via container as much as possible to reduce damage rates.

Analysis for research question d. Which month has the least damage? Which month has the most?

The 12 months were classified as four seasons: August to October as Fall, November to January as Winter, February to April as Spring and May to July as Summer. Loading

date were used. It is expected that a greater difference will appear in percentage of wet & others, rather than bags torn.

Table 20. Comparison of percentage of damage by season. (Claim database)

	8/2/93-8/2/94			8/2/94-8/3/95		
	Tot. Pkg.	Pkg.Dmd	% Dmd	Tot. Pkg.	Pkg. Dmd	% Dmd
Fall	966,553	22,895	2.37%	636,842	5,064	0.80%
Winter	1,033,458	19,916	1.93%	1,128,507	11,979	1.06%
Spring	526,263	15,689	2.98%	1,391,312	36,701	2.64%
Summer	1,721,405	33,578	1.95%	1,072,238	16,193	1.51%

Table 21. Comparison of percentage of bags torn by season. (Claim database)

	8/2/93-8/2/94			8/2/94-8/3/95		
	Tot. Pkg.	Pkg. Torn	% Torn	Tot. Pkg.	Pkg. Torn	% Torn
Fall	966,553	22,552	2.33%	636,842	5,047	0.79%
Winter	1,033,458	17,670	1.71%	1,128,507	10,271	0.91%
Spring	526,263	12,925	2.46%	1,391,312	20,207	1.45%
Summer	1,721,405	26,451	1.54%	1,072,238	15,825	1.48%

Table 22. Comparison of percentage bags wet by season. (Claim database)

	8/2/93-8/2/94			8/2/94-8/3/95		
	Tot. Pkg.	Pkg. Wet	% Wet	Tot. Pkg.	Pkg. Wet	% Wet
Fall	966,553	343	0.035%	636,842	17	0.0027%
Winter	1,033,458	2,246	0.22%	1,128,507	1,708	0.15%
Spring	526,263	2,764	0.53%	1,391,312	16,494	1.19%
Summer	1,721,405	7,127	0.41%	1,072,238	368	0.034%

Table 20-21 confirm this expectation. There is no apparent correlation between the seasons and torn bags. However, there does seem to be a relationship between wet bags and the time of year. Table 22 shows that Fall suffers the least water damage and Spring has the most. This is consistent with the fact that there is more rain in the spring coupled with a tendency for wide temperature variations a cargo is shipped from cool to warm climates. Table 20 shows a similar pattern for overall damage, largely affected by the water damage component.

Analysis for question e. Which shipping company has the least damage? Which has the most?

Every shipping company has its own certain shipping vessel, break-bulk, barge or container. Table 23 shows the vessel types operated by each company. It should be again noted that the Waterman barges are also loaded in a breakbulk manner.

Analysis of question d. above shows that containerization is the best shipping vessel for CSB, followed by barge; breakbulk is the worst. Similarly, it would be expected that APL and Sealand should experience the lowest damage rate, while Waterman and other breakbulk carriers should be worst.

Table 23. Shipping vessels of different steamship companies.

Shipping Company	Shipping Vessel
Afram	Break-bulk
Crowley Caribbean	Break-bulk
Lykes	Break-bulk
APL	Container
Sealand	Container
Waterman	Barge

The expectation is confirmed for 93-94. APL and Sealand had low total damage rates and Waterman's damage rate is high. See table 24. After VLOP, all of the breakbulk carriers (including Waterman) reduced damage-except for Lykes.

Table 25 shows that the containerized carriers suffered fewer torn bags than the breakbulk carriers. Waterman had the highest number of torn bags. Again, all breakbulk carriers decreased the number of torn bags after VLOP -- except for Lykes. Crowley Caribbean had very low damage rates and torn bag rates for both years.

Table 24. Percentage of damage by steamship companies. (Claim database)

Steamship Company	% Dmgd. 93-94	% Dmgd. 94-95	Change
Waterman	2.58	1.84	-0.74
Afram	2.02	0.36	-1.66
Lykes	1.77	2.63	0.86
Sealand	1.22	0.63	-0.59
Crowley Caribbean	1.12	0.57	-0.55
APL	1.04	1.91	0.87

Lykes and APL suffered an increase in total damage and torn bags after VLOP. While APL's situation is unrelated to VLOP (because there are no containerized shipments involved in VLOP). Lykes' damage increase is inconsistent.

Table 25. Comparison of percentage bags torn decreased after VLOP by shipping company (Claim database)

Steamship Company	% Bags Torn 93-94	% Bags Torn 94-95	Change
Waterman	2.30	1.32	-0.98
Lykes	1.72	2.53	0.81
Afram	1.22	0.36	-0.86
Crowley Caribbean	1.11	0.57	-0.54
APL	0.82	1.9	1.08
Sealand	0.80	0.55	-0.25

Table 26. Comparison of the percentage wet and other damage decreased after VLOP by shipping company. (Claim database)

Steamship Company	% wet & others 93-94	% wet & others 94-95	Change
Afram	0.80	0.01	-0.79
Sealand	0.42	0.08	-0.34
Waterman	0.28	0.52	0.24
APL	0.22	0.01	-0.21
Lykes	0.06	0.10	0.04
Crowley Caribbean	0	0	0

Table 26 shows that water damage may be as much related to the company and its operation as to the mode. Afram and Sealand experienced some wet shipments, but Lykes

and Crowley Caribbean, breakbulk carriers, were largely dry. Crowley Caribbean had no water damage, which may be related to its short voyage and nearly ports of discharge in the Caribbean.

The containerized carriers, Sealand and APL experienced some large wet losses in 93-94. But they had very little water damage in 94-95, as would be expected for a containerized carrier.

Chapter 5

CONCLUSIONS AND RECOMMENDATIONS

Conclusions and Implications

1. The Vessel Loading Observation Procedure resulted in a decrease of overall percentage of damage in the six VLOP ports. VLOP reduced the number of damaged bags received and the overall damaged bags. It is the same situation for the overall percentage of bags torn. VLOP helped some to reduce the pounds lost and the percentage salvaged did not decrease significantly. VLOP does not seem to be very related to the other parameter: bags wet and others.

2. The origin ports that leave the most damaged bags aboard ship were positively correlated with high damage out-turn results. But when the percentage of damaged bags loaded is low, it does not necessarily mean that the resulting percentage of damaged bags received is low. Furthermore, there may be variations in the VLOP recording procedure.

3. Thirteen of the eighteen discharge ports experienced reduced damage after VLOP. Bombay is an exception and had the percentage of bags damaged increased from 2.56% to 5.85% largely due to one large loss. Six discharge ports experienced more than two percent damage: Tamatave, Jamnagar, Bombay, Paradip, Matarani and Calcutta. Only a couple of the discharge which had large wet shipments are responsible for the overall percentage of bags wet and other damage.

4. VLOP does not guarantee reduced damage in origin ports, other factors like transport and discharge conditions also cause damage. Some ports which have not implemented VLOP also reduced damage. Meanwhile, VLOP does not necessarily reduce damage in all VLOP ports. Among VLOP ports which reduced damage, Pensacola and Orange experienced the greatest damage reduction. Pensacola had the least damage of all parts after VLOP. Lake Charles and Pascagoula actually increased damage after VLOP. Except Pascagoula, all of the VLOP origin ports reduced their percentage of torn bags received. Water damage proved to be unrelated to VLOP.

5. Loading Ports on the US west coast experienced the least damage, secondly ports on the gulf coast, then the port on Mississippi River.

6. After VLOP, all of the loading ports in different regions reduced damage, especially the port on the Mississippi River, Memphis. There was greater reduction in damage in the gulf and Mississippi river ports, which implemented VLOP, than in the west coast ports without VLOP.

7. All loading ports, participating in VLOP, except Pascagoula, reduced damage and the percentage of torn bags. Pensacola experienced the greatest damage reduction to become the leading port with least damage after VLOP.

8. Containers experience the least damage; barges experience the most. The choice of shipping method has more effect on the percentage of bags torn than the percentage of wet and others. Generally speaking, containerization is the best way for shipping moisture sensitive products, like CSB.

9. The season has more effect on the percentage of bags wet and others than the percentage of bags torn; Spring is worst.

10. Afram and Crowley Caribbean have the highest percentage of damage before VLOP and also had the highest decrease after VLOP. Waterman also dramatically reduced damage after the vessel loading observation was implemented.

Recommendations for Action

1. Since removing broken bags during loading has proven to be a successful strategy, it is recommended that USDA take further responsibility to ensure damage-free shipments. The VLOP inspector should have move authority to enforce bag removal.

2. Since there are clear difference between ports with respect to damage. It is recommended that damage claim and VLOP reports be prepared and reviewed on a periodic basis. USDA should work with loading ports and shipping companies to reduce damage.

3. Since containerization has proven to reduce damage, it is recommended that USDA cargo be shipped via containers whenever possible.

4. Since the USDA's distribution channels have an unusual arrangement regarding product ownership and responsibility, it is recommended that the process flow be analyzed to find other sources and responsibility for damage.

Recommendations for Further Study

1. This research did not have a lot of first-hand information about the shipping companies, loading ports and discharge ports. If possible, a future researcher can do a survey about the details of the shipping company or ports to discover other reasons for damage.

2. A future research should employ more statistical analysis of the significance of differences. A database program with more statistical functions than the Reflex database will be required.

3. This research did not examine the relationship between the trip time and damage, the weather situation in different loading ports or relative humidity during shipping. Continuous study for this is recommended.

4. A future researcher may examine the relationship of month and damage by shipping vessel, loading ports, discharge ports, shipping company, etc. in a regression model. This will be a very time consuming project because there is not a "month" field in the claim database, the computer can not sort the data by month. The researcher needs to search the records month by month and put them together manually.

5. This research did not address the short landed change due to the VLOP. Future research might include this point, especially since removing damaged bags from the ships' hold at loading may result in a short landed count at receipt.

6. Since there are different solutions for wet damage, the damage category "wet and others" needs better differentiated in order to learn how much is wet and how much is "other".

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APPENDIX

CLAIM DATABASE REPORTS

CLAIM DATABASE REPORT
Total Damage Percentage Between 8/3/93 and 8/2/94

	TOT PKG	TOT PKGS DAMAGED	% DMGED
REPORT TOTALS	4,277,279.00	92,194.00	2.16

File Name: RP1

CLAIM DATABASE REPORT
Total Damage Persentage Between 8/3/94 and 8/2/95

	TOT PKG	TOT PKGS DAMAGED	% DMGED
REPORT TOTALS	4,529,833.00	74,341.00	1.64

File Name: RP2

CLAIM DATABASE REPORT
Bags Torn Percentage Between 8/3/93 and 8/2/94

	TOT PKG	TOT PKGS TORN	% BAGS TORN
REPORT TOTALS	4,277,279.00	79,711.00	1.86

File Name: RP3

CLAIM DATABASE REPORT
Bags Torn Persentage Between 8/3/94 and 8/2/95

	TOT PKG	TOT PKGS TORN	% BAGS TORN
REPORT TOTALS	4,529,833.00	55,754.00	1.23

File Name: RP4

CLAIM DATABASE REPORT
Bags Wet & Other Damage Persentage Between 8/3/93 and 8/2/94

	TOT PKG	WET & OTHERS	% BAGS WET
REPORT TOTALS	4,277,279.00	12,483.00	0.29

File Name: RP5

CLAIM DATABASE REPORT
Bags Wet & Other Damage Persentage Between 8/3/94 and 8/2/95

	TOT PKG	WET & OTHERS	% BAGS WET
REPORT TOTALS	4,529,833.00	18,587.00	0.41

File Name: RP6

CLAIM DATABASE REPORT
Results by Loading Port

Total Damage Percentage Between 8/3/93 and 8/2/94

LOAD PORT	TOT PKG	TOT PKG DAMAGED	% DMGED
Cambria	23,600	841	3.56
Corpus Christi	13,187	20	0.15
Houston	58,750	1,068	1.82
Lake Charles	374,445	8,011	2.14
Long Beach	594,366	7,610	1.28
Memphis	1,417,884	40,717	2.87
New Orleans	751,483	17,637	2.35
Orange	44,056	734	1.67
Pascagoula	23,610	569	2.41
Pensacola	465,959	7,272	1.56
Richmond	188,693	4,408	2.34
Seattle	136,252	1,414	1.04
Tacoma	184,994	1,893	1.02
REPORT TOTALS	4,277,279	92,194	2.16

File Name: Load1

CLAIM DATABASE REPORT
Results by Loading Port

Total Damage Percentage Between 8/3/94 and 8/2/95

LOAD PORT	TOT PKG	TOT PKG DAMAGED	% DMGED
Jacinto Port	11,996	0	0.00
Lake Charles	516,874	12,019	2.33
Long Beach	117,785	550	0.47
Los Angeles	33,088	293	0.89
Memphis	2,930,284	50,595	1.73
New Orleans	244,998	3,255	1.33
Oakland	40,000	113	0.28
Orange	22,541	136	0.60
Pascagoula	50,656	1,712	3.38
Pensacola	163,483	283	0.17
Savannah	105,349	1,410	1.34
Seattle	72,514	2,382	3.28
Tacoma	220,265	1,593	0.72
REPORT TOTALS	4,529,833	74,341	1.64

File Name: Load2

CLAIM DATABASE REPORT
Results by Loading Port

Bags Torn Percentage Between 8/3/93 and 8/2/94

LOAD PORT	TOT PKG	TOT PKG TORN	% BAGS TORN
Cambria	23,600	841	3.56
Corpus Christi	13,187	20	0.15
Houston	58,750	1,068	1.82
Lake Charles	374,445	6,778	1.81
Long Beach	594,366	4,488	0.76
Memphis	1,417,884	38,055	2.68
New Orleans	751,483	12,665	1.69
Orange	44,056	734	1.67
Pascagoula	23,610	562	2.38
Pensacola	465,959	7,265	1.56
Richmond	188,693	4,408	2.34
Seattle	136,252	1,113	0.82
Tacoma	184,994	1,714	0.93
REPORT TOTALS	4,277,279	79,711	1.86

File Name: Load3

CLAIM DATABASE REPORT
Results by Loading Port

Bags Torn Percentage Between 8/3/94 and 8/2/95

LOAD PORT	TOT PKG	TOT PKG TORN	% BAGS TORN
Jacinto Port	11,996	0	0.00
Lake Charles	516,874	6,445	1.25
Long Beach	117,785	550	0.47
Los Angeles	33,088	276	0.83
Memphis	2,930,284	38,416	1.31
New Orleans	244,998	3,000	1.22
Oakland	40,000	113	0.28
Orange	22,541	136	0.60
Pascagoula	50,656	1,633	3.22
Pensacola	163,483	283	0.17
Savannah	105,349	1,210	1.15
Seattle	72,514	2,382	3.28
Tacoma	220,265	1,310	0.59
REPORT TOTALS	4,529,833	55,754	1.23

File Name: Load4

CLAIM DATABASE REPORT
Results by Loading Port

Bags Wet & Other Damage Percentage Between 8/3/93 and 8/2/94

LOAD PORT	TOT PKG	WET & OTHERS	% BAGS WET
Cambria	23,600	0	0.00
Corpus Christi	13,187	0	0.00
Houston	58,750	0	0.00
Lake Charles	374,445	1,233	0.33
Long Beach	594,366	3,122	0.53
Memphis	1,417,884	2,662	0.19
New Orleans	751,483	4,972	0.66
Orange	44,056	0	0.00
Pascagoula	23,610	7	0.03
Pensacola	465,959	7	0.00
Richmond	188,693	0	0.00
Seattle	136,252	301	0.22
Tacoma	184,994	179	0.10
REPORT TOTALS	4,277,279	12,483	0.29

File Name: Load5

CLAIM DATABASE REPORT
Results by Loading Port

Bags Wet & Other Damage Percentage Between 8/3/94 and 8/2/95

LOAD PORT	TOT PKG	WET & OTHERS	% BAGS WET
Jacinto Port	11,996	0	0.00
Lake Charles	516,874	5,574	1.08
Long Beach	117,785	0	0.00
Los Angeles	33,088	17	0.05
Memphis	2,930,284	12,179	0.42
New Orleans	244,998	255	0.10
Oakland	40,000	0	0.00
Orange	22,541	0	0.00
Pascagoula	50,656	79	0.16
Pensacola	163,483	0	0.00
Savannah	105,349	200	0.19
Seattle	72,514	0	0.00
Tacoma	220,265	283	0.13
REPORT TOTALS	4,529,833	18,587	0.41

File Name: Load6

CLAIM DATABASE REPORT
Results by Loading Port

Salvage Pound Percentage Between 8/3/93 and 8/2/94

LOAD PORT	SALVAGE POUND	DAMAGE POUND	% SALVAGE
Cambria	44,753.00	46,351.72	96.55
Corpus Christi	926.00	1,102.30	84.01
Houston	53,501.00	58,862.82	90.89
Lake Charles	298,238.00	441,526.27	67.55
Long Beach	355,297.00	416,585.15	85.29
Memphis	1,889,949.00	2,244,117.46	84.22
New Orleans	816,635.00	972,063.25	84.01
Orange	31,085.00	40,454.41	76.84
Pascagoula	24,780.00	31,360.43	79.02
Pensacola	348,447.00	400,796.28	86.94
Richmond	161,102.00	242,946.92	66.31
Seattle	37,103.00	77,933.29	47.61
Tacoma	87,122.00	104,332.70	83.50
REPORT TOTALS	4,148,938.00	5,078,432.99	81.70

File Name: Load7

CLAIM DATABASE REPORT
Results by Loading Port

Salvage Pound Percentage Between 8/3/94 and 8/2/95

LOAD PORT	SALVAGE POUND	DAMAGE POUND	% SALVAGE
Jacinto Port	0.00	0.00	ERROR
Lake Charles	571,261.00	662,427.18	86.24
Long Beach	27,392.00	30,313.25	90.36
Los Angeles	15,212.00	16,148.69	94.20
Memphis	2,268,484.00	2,788,543.42	81.35
New Orleans	144,720.00	179,399.33	80.67
Oakland	5,897.00	6,227.99	94.69
Orange	6,356.00	7,495.64	84.80
Pascagoula	80,521.00	94,356.88	85.34
Pensacola	14,414.00	15,597.55	92.41
Savannah	71,870.00	77,712.15	92.48
Seattle	108,632.00	131,283.93	82.75
Tacoma	75,121.00	87,798.20	85.56
REPORT TOTALS	3,389,880.00	4,097,304.21	82.73

File Name: Load8

CLAIM DATABASE REPORT
Results by Loading Port

Lost Pound Percentage Between 8/3/93 and 8/2/94

LOAD PORT	TOT POUND	LOST POUND	% LOST POUND
Cambria	1,300,714.00	1,598.72	0.12
Corpus Christi	726,801.51	176.30	0.02
Houston	3,238,006.25	5,361.82	0.17
Lake Charles	20,637,536.18	143,288.27	0.69
Long Beach	33,733,122.09	59,881.15	0.18
Memphis	78,256,906.66	354,168.46	0.45
New Orleans	41,417,985.55	155,428.26	0.38
Orange	2,428,146.44	9,369.41	0.39
Pascagoula	1,301,265.15	6,580.43	0.51
Pensacola	25,681,330.29	52,349.28	0.20
Richmond	10,399,814.70	81,844.92	0.79
Seattle	7,510,184.74	40,830.29	0.54
Tacoma	10,195,944.31	17,210.69	0.17
REPORT TOTALS	236,827,757.84	928,087.99	0.39

File Name: Load9

CLAIM DATABASE REPORT
Results by Loading Port

Lost Pound Percentage Between 8/3/94 and 8/2/95

LOAD PORT	TOT POUND	LOST POUND	% LOST POUND
Jacinto Port	661,159.54	0.00	0.00
Lake Charles	28,487,510.51	91,166.19	0.32
Long Beach	6,491,720.28	2,921.25	0.04
Los Angeles	1,823,645.12	936.69	0.05
Memphis	161,502,602.66	520,059.43	0.32
New Orleans	13,503,064.77	34,679.33	0.26
Oakland	2,204,600.00	330.99	0.02
Orange	1,242,347.22	1,139.64	0.09
Pascagoula	2,791,905.44	13,835.88	0.50
Pensacola	9,010,365.54	1,183.54	0.01
Savannah	5,806,310.13	5,842.15	0.10
Seattle	3,996,609.11	22,651.93	0.57
Tacoma	12,139,905.48	12,677.20	0.10
REPORT TOTALS	249,661,745.80	707,424.22	0.28

File Name: Load10

CLAIM DATABASE REPORT
Results by Discharge Port

Total Damage Percentage Between 8/3/93 and 8/2/94

DISCHARGE PORT	TOT PKG	TOT PKG DAMAGED	% DMGED
Assab	35,042	0	0.00
Banjul	54,855	1,313	2.39
Bombay	457,644	11,701	2.56
Cagayan De Oro	10,798	11	0.10
Calcutta	619,587	13,323	2.15
Callao	205,503	1,247	0.61
Cebu	9,200	207	2.25
Davao	15,902	366	2.30
Djibouti	35,671	152	0.43
Freetown	9,587	102	1.06
Ilo Ilo	13,958	269	1.93
Jamnagar	434,008	22,827	5.26
Madras	702,292	9,181	1.31
Manila	194,953	2,162	1.11
Maputo	9,207	0	0.00
Massawa	73,653	0	0.00
Matarani	112,241	3,164	2.82
Mombasa	34,408	95	0.28
Paradip	432,290	10,928	2.53
Puerto Cortes	800	0	0.00
Salaverry	51,194	839	1.64
Santo Tomas	88,353	995	1.13

DISCHARGE PORT	TOT PKG	TOT PKG DAMAGED	% DMGED
Tamatave	83,895	3,587	4.28
Visakhapatnam	592,238	9,725	1.64
REPORT TOTALS	4,277,279	92,194	2.16

File Name: Dis1

CLAIM DATABASE REPORT
Results by Discharge Port

Total Damage Percentage Between 8/3/94 and 8/2/95

DISCHARGE PORT	TOT PKG	TOT PKG DAMAGED	% DMGED
Alaverry	19,444	232	1.19
Assab	169,641	1,594	0.94
Bombay	165,855	9,261	5.58
Calcutta	879,419	13,539	1.54
Callao	231,964	550	0.24
Djibouti	28,515	28	0.10
Durban	24,856	116	0.47
Jamnagar	432,305	12,123	2.80
Madras	605,599	7,011	1.16
Manila	133,290	1,760	1.32
Maputo	12,821	0	0.00
Massawa	2,395	0	0.00
Matarani	77,137	979	1.27
Mombasa	384,816	1,173	0.30
Paradip	681,724	15,905	2.33
Puerto Cortes	31,180	0	0.00
Salaverry	13,575	0	0.00
Santo Tomas	73,984	601	0.81
Tamatave	32,317	1,831	5.67
Visakhapatnam	528,996	7,638	1.44
REPORT TOTALS	4,529,833	74,341	1.64

File Name: Dis2

CLAIM DATABASE REPORT
Results by Discharge Port

Bags Torn Percentage Between 8/3/93 and 8/2/94

DISCHARGE PORT	TOT PKG	TOT PKG TORN	% BAGS TORN
Assab	35,042	0	0.00
Banjul	54,855	326	0.59
Bombay	457,644	4,641	1.01
Cagayan De Oro	10,798	10	0.09
Calcutta	619,587	13,323	2.15
Callao	205,503	1,247	0.61
Cebu	9,200	204	2.22
Davao	15,902	262	1.65
Djibouti	35,671	152	0.43
Freetown	9,587	102	1.06
Ilo Ilo	13,958	253	1.81
Jamnagar	434,008	20,246	4.66
Madras	702,292	8,930	1.27
Manila	194,953	1,806	0.93
Maputo	9,207	0	0.00
Massawa	73,653	0	0.00
Matarani	112,241	3,164	2.82
Mombasa	34,408	95	0.28
Paradip	432,290	10,928	2.53
Puerto Cortes	800	0	0.00
Salaverry	51,194	830	1.62
Santo Tomas	88,353	994	1.13

DISCHARGE PORT	TOT PKG	TOT PKG TORN	% BAGS TORN
Tamatave	83,895	3,337	3.98
Visakhapatnam	592,238	8,861	1.50
REPORT TOTALS	4,277,279	79,711	1.86

File Name: Dis3

CLAIM DATABASE REPORT
Results by Discharge Port

Bags Torn Percentage Between 8/3/94 and 8/2/95

DISCHARGE PORT	TOT PKG	TOT PKG TORN	% BAGS TORN
Alaverry	19,444	232	1.19
Assab	169,641	1,569	0.92
Bombay	165,855	2,617	1.58
Calcutta	879,419	10,968	1.25
Callao	231,964	531	0.23
Djibouti	28,515	28	0.10
Durban	24,856	116	0.47
Jamnagar	432,305	11,498	2.66
Madras	605,599	5,484	0.91
Manila	133,290	1,683	1.26
Maputo	12,821	0	0.00
Massawa	2,395	0	0.00
Matarani	77,137	978	1.27
Mombasa	384,816	1,173	0.30
Paradip	681,724	10,241	1.50
Puerto Cortes	31,180	0	0.00
Salaverry	13,575	0	0.00
Santo Tomas	73,984	600	0.81
Tamatave	32,317	1,752	5.42
Visakhapatnam	528,996	6,284	1.19
REPORT TOTALS	4,529,833	55,754	1.23

File Name: Dis4

CLAIM DATABASE REPORT
Results by Discharge Port

Bags Wet & Other Damage Percentage Between 8/3/93 and 8/2/94

DISCHARGE PORT	TOT PKG	WET & OTHERS	% BAGS WET
Assab	35,042	0	0.00
Banjul	54,855	987	1.80
Bombay	457,644	7,060	1.54
Cagayan De Oro	10,798	1	0.01
Calcutta	619,587	0	0.00
Callao	205,503	0	0.00
Cebu	9,200	3	0.03
Davao	15,902	104	0.65
Djibouti	35,671	0	0.00
Freetown	9,587	0	0.00
Ilo Ilo	13,958	16	0.11
Jamnagar	434,008	2,581	0.59
Madras	702,292	251	0.04
Manila	194,953	356	0.18
Maputo	9,207	0	0.00
Massawa	73,653	0	0.00
Matarani	112,241	0	0.00
Mombasa	34,408	0	0.00
Paradip	432,290	0	0.00
Puerto Cortes	800	0	0.00
Salaverry	51,194	9	0.02
Santo Tomas	88,353	1	0.00

DISCHARGE PORT	TOT PKG	WET & OTHERS	% BAGS WET
Tamatave	83,895	250	0.30
Visakhapatnam	592,238	864	0.15
REPORT TOTALS	4,277,279	12,483	0.29

File Name: Dis5

CLAIM DATABASE REPORT
Results by Discharge Port

Bags Wet & Other Damage Percentage Between 8/3/94 and 8/2/95

DISCHARGE PORT	TOT PKG	WET & OTHERS	% BAGS WET
Alaverry	19,444	0	0.00
Assab	169,641	25	0.01
Bombay	165,855	6,644	4.01
Calcutta	879,419	2,571	0.29
Callao	231,964	19	0.01
Djibouti	28,515	0	0.00
Durban	24,856	0	0.00
Jamnagar	432,305	625	0.14
Madras	605,599	1,527	0.25
Manila	133,290	77	0.06
Maputo	12,821	0	0.00
Massawa	2,395	0	0.00
Matarani	77,137	1	0.00
Mombasa	384,816	0	0.00
Paradip	681,724	5,664	0.83
Puerto Cortes	31,180	0	0.00
Salaverry	13,575	0	0.00
Santo Tomas	73,984	1	0.00
Tamatave	32,317	79	0.24
Visakhapatnam	528,996	1,354	0.26
REPORT TOTALS	4,529,833	18,587	0.41

File Name: Dis6

CLAIM DATABASE REPORT
Results by Discharge Port

Salvage Pound Percentage Between 8/3/93 and 8/2/94

DISCHARGE PORT	SALVAGE POUND	DAMAGE POUND	% SALVAGE
Assab	0.00	0.00	ERROR
Banjul	8,988.00	72,366.00	12.42
Bombay	583,944.00	644,900.61	90.55
Cagayan De Oro	0.00	606.26	0.00
Calcutta	609,684.00	734,297.14	83.03
Callao	63,203.00	68,728.40	91.96
Cebu	10,703.00	11,408.81	93.81
Davao	13,613.00	20,172.09	67.48
Djibouti	8,036.00	8,377.48	95.92
Freetown	3,862.00	5,621.73	68.70
Ilo Ilo	0.00	14,825.94	0.00
Jamnagar	1,204,482.00	1,258,110.10	95.74
Madras	414,381.00	503,170.81	82.35
Manila	87,122.00	119,159.31	73.11
Maputo	0.00	0.00	ERROR
Massawa	0.00	0.00	ERROR
Matarani	143,464.00	174,383.86	82.27
Mombasa	0.00	5,235.93	0.00
Paradip	327,107.00	602,296.72	54.31
Puerto Cortes	0.00	0.00	ERROR
Salaverry	39,291.00	46,241.49	84.97
Santo Tomas	42,235.00	54,839.43	77.02

DISCHARGE PORT	SALVAGE POUND	DAMAGE POUND	% SALVAGE
Tamatave	147,132.00	197,697.51	74.42
Visakhapatnam	441,691.00	535,993.38	82.41
REPORT TOTALS	4,148,938.00	5,078,432.99	81.70

File Name: Dis7

CLAIM DATABASE REPORT
Results by Discharge Port

Salvage Pound Percentage Between 8/3/94 and 8/2/95

DISCHARGE PORT	SALVAGE POUND	DAMAGE POUND	% SALVAGE
Alaverry	6,777.00	12,786.68	53.00
Assab	2,756.00	87,853.31	3.14
Bombay	463,505.00	510,420.02	90.81
Calcutta	636,707.00	746,201.99	85.33
Callao	16,437.00	30,313.25	54.22
Djibouti	926.00	1,543.22	60.00
Durban	3,373.00	6,393.34	52.76
Jamnagar	638,563.00	668,159.15	95.57
Madras	346,206.00	386,411.27	89.60
Manila	86,310.00	97,002.40	88.98
Maputo	0.00	0.00	ERROR
Massawa	0.00	0.00	ERROR
Matarani	45,339.00	53,957.58	84.03
Mombasa	50,496.00	64,649.90	78.11
Paradip	704,261.00	876,604.07	80.34
Puerto Cor	0.00	0.00	ERROR
Salaverry	0.00	0.00	ERROR
Santo Toma	30,924.00	33,124.12	93.36
Tamatave	84,921.00	100,915.57	84.15
Visakhapat	272,379.00	420,968.37	64.70
REPORT TOTALS	3,389,880.00	4,097,304.21	82.73

File Name: Dis8

CLAIM DATABASE REPORT
Results by Discharge Port

Lost Pound Percentage Between 8/3/93 and 8/2/94

DISCHARGE PORT	TOT POUND	LOST POUND	% LOST POUND
Assab	1,931,339.83	0.00	0.00
Banjul	3,023,333.33	63,378.00	2.10
Bombay	25,223,049.06	60,956.62	0.24
Cagayan De Oro	595,131.77	606.26	0.10
Calcutta	34,148,537.50	124,613.15	0.36
Callao	11,326,297.84	5,525.41	0.05
Cebu	507,058.00	705.81	0.14
Davao	876,438.73	6,559.09	0.75
Djibouti	1,966,007.17	341.48	0.02
Freetown	528,387.51	1,759.73	0.33
Ilo Ilo	769,295.17	14,825.94	1.93
Jamnagar	23,920,350.92	53,628.11	0.22
Madras	39,681,463.58	87,382.82	0.22
Manila	10,745,490.35	32,037.31	0.30
Maputo	507,443.80	0.00	0.00
Massawa	4,169,615.10	0.00	0.00
Matarani	6,186,162.71	30,919.86	0.50
Mombasa	1,896,396.92	5,235.93	0.28
Paradip	23,825,663.35	275,189.72	1.16
Puerto Cortes	44,092.00	0.00	0.00
Salaverry	2,821,557.31	6,950.48	0.25
Santo Tomas	4,869,575.60	12,604.43	0.26

DISCHARGE PORT	TOT POUND	LOST POUND	% LOST POUND
Tamatave	4,623,872.93	50,565.51	1.09
Visakhapatnam	32,641,197.37	94,302.38	0.29
REPORT TOTALS	236,827,757.85	928,087.99	0.39

File Name: Dis9

CLAIM DATABASE REPORT
Results by Discharge Port

Lost Pound Percentage Between 8/3/94 and 8/2/95

DISCHARGE PORT	TOT POUND	LOST POUND	% LOST POUND
Alaverry	1,071,656.06	6,009.68	0.56
Assab	9,349,763.71	85,097.31	0.91
Bombay	9,141,098.33	46,915.02	0.51
Calcutta	48,469,178.19	109,494.99	0.23
Callao	12,784,695.86	13,876.25	0.11
Djibouti	1,571,604.23	617.22	0.04
Durban	1,369,938.44	3,020.34	0.22
Jamnagar	23,826,490.07	29,596.15	0.12
Madras	33,377,588.89	40,205.27	0.12
Manila	7,346,278.35	10,692.40	0.15
Maputo	706,629.42	0.00	0.00
Massawa	132,000.43	0.00	0.00
Matarani	4,251,405.76	8,618.58	0.20
Mombasa	21,209,133.84	14,153.90	0.07
Paradip	37,573,218.26	172,343.08	0.46
Puerto Cortes	1,718,485.70	0.00	0.00
Salaverry	748,186.13	0.00	0.00
Santo Tomas	4,077,628.16	2,200.12	0.05
Tamatave	1,781,151.46	15,994.57	0.90
Visakhapatnam	29,155,614.54	148,589.37	0.51
REPORT TOTALS	249,661,745.79	707,424.22	0.28

File Name: Dis10

CLAIM DATABASE REPORT
Results by Shipping Method

Total Damage Percentage Between 8/3/93 and 8/2/94

SHIPPING METHOD	TOT PKG	TOT PKG DAMAGED	% DMGED
BARGE	2,703,738	69,935	2.59
BREAKBULK	657,929	11,342	1.72
CONTAINER	915,612	10,917	1.19

File Name: sm1

CLAIM DATABASE REPORT
Results by Shipping Method

Total Damage Persentage Between 8/3/94 and 8/2/95

SHIPPING METHOD	TOT PKG	TOT PKG DAMAGED	% DMGED
BARGE	3,266,188	60,776	1.86
BREAKBULK	655,495	8,975	1.37
CONTAINER	608,150	4,590	0.75

File Name: sm2

CLAIM DATABASE REPORT
Results by Shipping Method

Bags Torn Percentage Between 8/3/93 and 8/2/94

SHIPPING METHOD	TOT PKG	TOT PKG TORN	% BAGS TORN
BARGE	2,703,738	62,301.00	2.30
BREAKBULK	657,929	10,095.00	1.53
CONTAINER	915,612	7,315.00	0.80

CLAIM DATABASE REPORT
Results by Shipping Method

Bags Torn Persentage Between 8/3/94 and 8/2/95

SHIPPING METHOD	TOT PKG	TOT PKG TORN	% BAGS TORN
BARGE	3,266,188	44,550.00	1.36
BREAKBULK	655,495	6,897.00	1.05
CONTAINER	608,150	4,307.00	0.71

CLAIM DATABASE REPORT
Results by Shipping Method

Bags Wet & Other Damage Percentage Between 8/3/93 and 8/2/94

SHIPPING METHOD	TOT PKG	WET & OTHERS	% BAGS WET
BARGE	2,703,738	7,634.00	0.28
BREAKBULK	657,929	1,247.00	0.19
CONTAINER	915,612	3,602.00	0.39

CLAIM DATABASE REPORT
Results by Shipping Method

Bags Wet & Other Damage Persentage Between 8/3/94 and 8/2/95

SHIPPING METHOD	TOT PKG	WET & OTHERS	% BAGS WET
BARGE	3,266,188	16,226.00	0.50
BREKABULK	655,495	2,078.00	0.32
CONTAINER	608,150	283.00	0.05

CLAIM DATABASE REPORT
Results by Steamship Company

Total Damage Percentage Between 8/3/93 and 8/2/94

STEAMSHIP COMPANY	TOT PKG	TOT PKG DAMAGED	% DMGED
Afram	123,992	2,503	2.02
APL	136,252	1,414	1.04
Crowley Caribbean	89,153	995	1.12
Lykes	442,063	7,844	1.77
Sealand	779,360	9,503	1.22
Waterman	2,706,459	69,935	2.58
REPORT TOTALS	4,277,279	92,194	2.16

File Name: Stea1

CLAIM DATABASE REPORT
Results by Steamship Company

Total Damage Persentage Between 8/3/94 and 8/2/95

STEAMSHIP COMPANY	TOT PKG	TOT PKG DAMAGED	% DMGED
Afram	262,778	955	0.36
APL	145,602	2,788	1.91
Crowley Caribbean	105,164	601	0.57
Lykes	132,964	3,495	2.63
Sealand	338,050	2,143	0.63
Sealift	76,713	596	0.78
Waterman	3,468,562	63,763	1.84
REPORT TOTALS	4,529,833	74,341	1.64

File Name: Stea2

CLAIM DATABASE REPORT
Results by Steamship Company

Bags Torn Percentage Between 8/3/93 and 8/2/94

LOAD PORT	TOT PKG	TOT PKG TORN	% BAGS TORN
Afram	123,992	1,516	1.22
APL	136,252	1,113	0.82
Crowley Caribbean	89,153	994	1.11
Lykes	442,063	7,585	1.72
Sealand	779,360	6,202	0.80
Waterman	2,706,459	62,301	2.30
REPORT TOTALS	4,277,279	79,711	1.86

File Name: Stea3

CLAIM DATABASE REPORT
Results by Steamship Company

Bags Torn Persentage Between 8/3/94 and 8/2/95

LOAD PORT	TOT PKG	TOT PKG TORN	% BAGS TORN
Afram	262,778	940	0.36
APL	145,602	2,771	1.90
Crowley Caribbean	105,164	600	0.57
Lykes	132,964	3,365	2.53
Sealand	338,050	1,860	0.55
Sealift	76,713	596	0.78
Waterman	3,468,562	45,622	1.32
REPORT TOTALS	4,529,833	55,754	1.23

File Name: Stea4

CLAIM DATABASE REPORT
Results by Steamship Company

Bags Wet & Other Damage Percentage Between 8/3/93 and 8/2/94

LOAD PORT	TOT PKG	WET & OTHERS	% BAGS WET
Afram	123,992	987	0.80
APL	136,252	301	0.22
Crowley Caribbean	89,153	1	0.00
Lykes	442,063	259	0.06
Sealand	779,360	3,301	0.42
Waterman	2,706,459	7,634	0.28
REPORT TOTALS	4,277,279	12,483	0.29

File Name: stea5

CLAIM DATABASE REPORT
Results by Steamship Company

Bags Wet & Other Damage Persentage Between 8/3/94 and 8/2/95

LOAD PORT	TOT PKG	WET & OTHERS	% BAGS WET
Afram	262,778	15	0.01
APL	145,602	17	0.01
Crowley Caribbean	105,164	1	0.00
Lykes	132,964	130	0.10
Sealand	338,050	283	0.08
Sealift	76,713	0	0.00
Waterman	3,468,562	18,141	0.52
REPORT TOTALS	4,529,833	18,587	0.41

File Name: stea6

CLAIM DATABASE REPORT
Results by Steamship Company

Salvage Pound Percentage Between 8/3/93 and 8/2/94

LOAD PORT	SALVAGE POUND	DAMAGE POUND	% SALVAGE
Afram	67,277.00	137,952.85	48.77
APL	37,103.00	77,933.29	47.61
Crowley Caribbean	42,235.00	54,839.43	77.02
Lykes	338,663.00	432,322.06	78.34
Sealand	442,419.00	520,917.84	84.93
Waterman	3,221,241.00	3,854,467.52	83.57
REPORT TOTALS	4,148,938.00	5,078,432.99	81.70

File Name: stea7

CLAIM DATABASE REPORT
Results by Steamship Company

Salvage Pound Persentage Between 8/3/94 and 8/2/95

LOAD PORT	SALVAGE POUND	DAMAGE POUND	% SALVAGE
Afram	44,111.00	52,634.83	83.81
APL	129,741.00	153,660.62	84.43
Crowley Caribbean	30,924.00	33,124.12	93.36
Lykes	155,896.00	192,626.93	80.93
Sealand	102,513.00	118,111.45	86.79
Sealift	24,442.00	32,848.54	74.41
Waterman	2,902,253.00	3,514,297.74	82.58
REPORT TOTALS	3,389,880.00	4,097,304.21	82.73

File Name: Stea8

CLAIM DATABASE REPORT
Results by Steamship Company

Lost Pound Percentage Between 8/3/93 and 8/2/94

LOAD PORT	TOT POUND	LOST POUND	% LOST POUND
Afram	6,833,819.08	70,675.85	1.03
APL	7,510,184.74	40,830.29	0.54
Crowley Caribbean	4,913,667.60	12,604.43	0.26
Lykes	24,364,302.25	93,659.06	0.38
Sealand	43,929,066.40	78,498.85	0.18
Waterman	149,276,717.78	633,226.52	0.42
REPORT TOTALS	236,827,757.84	929,494.99	0.39

File Name: Stea9

CLAIM DATABASE REPORT
Results by Steamship Company

Lost Pound Persentage Between 8/3/94 and 8/2/95

LOAD PORT	TOT POUND	LOST POUND	% LOST POUND
Afram	14,483,009.47	8,523.82	0.06
APL	8,024,854.23	23,919.62	0.30
Crowley Caribbean	5,796,113.86	2,200.12	0.04
Lykes	7,328,310.86	36,730.92	0.50
Sealand	18,631,625.75	15,598.45	0.08
Sealift	4,228,037.00	8,406.54	0.20
Waterman	191,169,794.63	612,044.74	0.32
REPORT TOTALS	249,661,745.79	707,424.22	0.28

File Name: Stea10

CLAIM DATABASE REPORT
Results by Month

Total Damage Percentage Between 8/3/93 and 8/2/94

MONTH	TOT PKG	TOT PKG DAMAGED	% DMGED
August, 93	348,162	8,566	2.46
September, 93	214,402	3,812	1.78
October, 93	403,989	10,517	2.60
November, 93	334,310	3,858	1.15
December, 93	198,150	6,516	3.29
January, 94	500,998	9,542	1.90
February, 94	92,215	3,878	4.21
March, 94	122,536	1,177	0.96
April, 94	311,512	10,634	3.41
May, 94	1,081,147	24,750	2.29
June, 94	300,338	4,836	1.61
July, 94	339,920	3,992	1.17

CLAIM DATABASE REPORT
Results by Month

Bags Torn Percentage Between 8/3/93 and 8/2/94

MONTH	TOT PKG	TOT PKG TORN	% BAGS TORN
August, 93	348,162	8,535	2.45
September, 93	214,402	3,709	1.73
October, 93	403,989	10,308	2.55
November, 93	334,310	3,707	1.11
December, 93	198,150	4,598	2.32
January, 94	500,998	9,365	1.87
February, 94	92,215	3,765	4.08
March, 94	122,536	1,172	0.96
April, 94	311,512	7,988	2.56
May, 94	1,081,147	18,744	1.73
June, 94	300,338	4,487	1.49
July, 94	339,920	3,220	0.95

CLAIM DATABASE REPORT
Results by Month

Bags Wet & Other Damage Percentage Between 8/3/93 and 8/2/94

MONTH	TOT PKG	WET & OTHERS	% BAGS WET
August, 93	348,162	31	0.01
September, 93	214,402	103	0.05
October, 93	403,989	209	0.05
November, 93	334,310	151	0.05
December, 93	198,150	1,918	0.97
January, 94	500,998	177	0.04
February, 94	92,215	113	0.12
March, 94	122,536	5	0.00
April, 94	311,512	2,646	0.85
May, 94	1,081,147	6,006	0.56
June, 94	300,338	349	0.12
July, 94	339,920	772	0.23

CLAIM DATABASE REPORT
Results by Month

Lost Pound Percentage Between 8/3/93 and 8/2/94

MONTH	TOT POUND	LOST POUND	% LOST POUND
August, 93	19,188,948.63	77,744.09	0.41
September, 93	11,816,766.23	62,060.38	0.53
October, 93	22,265,853.73	119,324.46	0.54
November, 93	18,425,495.65	117,715.67	0.64
December, 93	11,031,267.25	44,930.34	0.41
January, 94	27,613,160.53	112,104.01	0.41
February, 94	5,082,429.73	27,148.97	0.53
March, 94	6,753,571.64	10,859.36	0.16
April, 94	17,168,983.88	77,681.91	0.45
May, 94	59,349,526.90	209,871.25	0.35
June, 94	17,765,658.87	18,486.14	0.10
July, 94	18,734,690.80	50,246.08	0.27

CLAIM DATABASE REPORT
Results by Month

Salvage Pound Percentage Between 8/3/93 and 8/2/94

MONTH	SALVAGE POUND	DAMAGE POUND	% SALVAGE
August, 93	394,371.00	472,115.09	83.53
September, 93	148,038.00	210,098.38	70.46
October, 93	460,320.00	579,644.45	79.41
November, 93	94,918.00	212,633.67	44.64
December, 93	314,199.00	359,129.34	87.49
January, 94	413,804.00	525,908.01	78.68
February, 94	186,587.00	213,735.97	87.30
March, 94	54,011.00	64,870.36	83.26
April, 94	508,411.00	586,092.91	86.75
May, 94	1,151,385.00	1,361,256.25	84.58
June, 94	248,050.00	266,536.14	93.06
July,94	169,773.00	220,019.08	77.16

CLAIM DATABASE REPORT
Results by Month

Total Damage Percentage Between 8/3/94 and 8/2/95

MONTH	TOT PKG	TOT PKG DAMAGED	% DMGED
August, 94	318,294	3,547	1.11
September, 94	146,776	986	0.67
October, 94	171,772	531	0.31
November, 94	276,315	219	0.08
December, 94	371,862	3,980	1.07
January, 95	480,330	7,780	1.62
February, 95	427,158	9,841	2.30
March, 95	476,712	14,645	3.07
April, 95	487,442	12,215	2.51
May, 95	100,042	1,233	1.23
June, 95	393,721	5,980	1.52
July, 95	578,475	8,980	1.55

CLAIM DATABASE REPORT
Results by Month

Bags Wet & Other Damage Percentage Between 8/3/94 and 8/2/95

MONTH	TOT PKG	WET & OTHERS	% BAGS WET
August, 94	318,294	17	0.01
September, 94	146,776	0	0.00
October, 94	171,772	0	0.00
November, 94	276,315	67	0.02
December, 94	371,862	265	0.07
January, 95	480,330	1,376	0.29
February, 95	427,158	5,644	1.32
March, 95	476,712	5,214	1.09
April, 95	487,442	5,636	1.16
May, 95	100,042	11	0.01
June, 95	393,721	57	0.01
July, 95	578,475	300	0.05

CLAIM DATABASE REPORT
Results by Month

Bags Torn Percentage Between 8/3/94 and 8/2/95

MONTH	TOT PKG	TOT PKG TORN	% BAGS TORN
August, 94	318,294	3,530	1.11
September, 94	146,776	986	0.67
October, 94	171,772	531	0.31
November, 94	276,315	152	0.06
December, 94	371,862	3,715	1.00
January, 95	480,330	6,404	1.33
February, 95	427,158	4,197	0.98
March, 95	476,712	9,431	1.98
April, 95	487,442	6,579	1.35
May, 95	100,042	1,222	1.22
June, 95	393,721	5,923	1.50
July, 95	578,475	8,680	1.50

CLAIM DATABASE REPORT
Results by Month

Salvage Pound Percentage Between 8/3/94 and 8/2/95

MONTH	SALVAGE POUND	DAMAGE POUND	% SALVAGE
August, 94	94,102.00	195,492.90	48.14
September, 94	47,571.00	54,343.39	87.54
October, 94	18,664.00	29,266.07	63.77
November, 94	6,228.00	12,070.19	51.60
December, 94	190,745.00	219,357.70	86.96
January, 95	386,198.00	428,794.70	90.07
February, 95	443,181.00	542,386.71	81.71
March, 95	703,378.00	807,159.18	87.14
April, 95	579,148.00	673,229.73	86.03
May, 95	51,256.00	67,956.80	75.42
June, 95	236,085.00	329,587.70	71.63
July, 95	415,565.00	494,932.70	83.96

CLAIM DATABASE REPORT
Results by Month

Lost Pound Percentage Between 8/3/94 and 8/2/95

MONTH	TOT POUND	LOST POUND	% LOST POUND
August, 94	17,542,773.81	101,390.90	0.58
September, 94	8,089,559.24	6,772.39	0.08
October, 94	9,467,213.78	10,602.07	0.11
November, 94	15,229,101.23	5,842.19	0.04
December, 94	20,495,174.13	28,612.70	0.14
January, 95	26,473,387.95	42,596.70	0.16
February, 95	23,542,813.17	99,205.72	0.42
March, 95	26,273,981.88	103,781.18	0.39
April, 95	26,865,365.83	94,081.73	0.35
May, 95	5,513,814.83	16,700.80	0.30
June, 95	21,699,932.92	93,502.70	0.43
July, 95	31,882,649.63	79,367.70	0.25

VESSEL LOADING OBSERVATION DATABASE REPORT
RESULTS BY PORT

Includes CIC's Issued Between 8/3/94 and 8/2/95
Commoditie: Corn Soya Blend

LOAD PORT	TOTAL BAGS	BAGS RMVD	%BAGS RMVD	DMG LOADED	% DMG LOADED	COST
Lake Charl	1395823	8194	0.59	1270	0.09	$13,283.20
Memphis	4446703	14497	0.33	72	0.00	$76,165.60
New Orlean	566613	3182	0.56	1114	0.20	$17,035.20
Orange	83102	732	0.88	12	0.01	$946.40
Pascagoula	124715	331	0.27	83	0.07	$1,724.80
Pensacola	3633557	4007	0.11	2183	0.06	$23,105.60
Savannah	132966	830	0.62	0	0.00	$0.00
REPORT TOTALS:	10383479	31773	0.31	4734	0.05	$132,260.80

File Name: CICLOADP