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Premium Prices for Quality Fish: A Case Study of the F/V ODIN

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PREMIUM PRICES FOR QUALITY FISH:

A CASE STUDY OF THE F/V ODIN

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ABSTRACT

During 1982, the F/V ODIN, a fishing vessel from the Port of New Bedford, participated in a program to improve fish quality on board through use of innovative fish handling techniques. The captain and crew hoped to sell higher quality fish at a premium price. This thesis examines the prices the F/V ODIN received prior to participating in this experiment, the price differentials the vessel actually received for landing higher quality fish, and the impact of the program on the prices received by the ODIN following the project. Overall, the ODIN received a price premium equal to 7.2% of the vessel's gross stock during the period of the project. The reactions of both fishermen and processors to this price premium were examined, and the significance of the project for the future of the New England fishing industry was addressed.

This thesis is dedicated to my wife, Marcia Butman, without whose encouragement, support, and assistance, none of this would have been possible.

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INTRODUCTION

Much of the cod, haddock, or flounder eaten in the United States is either landed or processed in New England. During the hundreds of years that fishing has been an important resource based industry, fish has been sold as a commodity. For the past fifty years, fish products have generally faced inelastic demand. As a result, the price of fish has depended more heavily on the supply available than on any other single factor. When fish is scarce, the price rises. The inelastic relationship between the supply and the price of fish has meant that other important considerations, such as the quality of the fish landed, the reputation of the fishing vessel, or the age of the fish, are not reflected in the price of fish set between a fisherman and a buyer. On any given day, for example, market cod has an average price. The best handled and freshest cod and the oldest cod from the bottom of the pen both are worth the same. This is the essence of the seafood market: prices are set by whether the available supply is over, equal to, or under the market demand. An imbalance of only 2% between supply of fish and demand is generally enough to create large scale price movements, either up or down. (1)

Such a system gives fisherman little incentive to land higher quality fish, because any effort they make to land above average

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(1) Erkins, Robert, "Price and Supply Trends in Seafood" speech at Seafood Expo, Chicago, Illinois, Sept. 25, 1984

quality will not be compensated by the market. As a result, while there has been tremendous technological innovation in the fishing fleet for the purpose of finding and catching fish, the manner in which fish is handled aboard the vessel has not changed appreciably in fifty years.

The ODIN project attempted to change this situation. The New England Fisheries Development Foundation, a trade association involved in many of the fisheries development efforts in New England, assisted the New Bedford fishing vessel ODIN to handle and store fish on board so as to achieve the highest quality possible. The Foundation hoped that buyers, recognizing the improved quality, would break out of the traditional commodity market approach to seafood, and pay the ODIN a higher price for its fish. If such a market incentive became established, then more vessels would adopt better handling methods in order to receive a higher price.

This thesis is a case study of this experiment. The ODIN project was strongly supported by progressive members of the fishing and processing industry in New England, and was widely followed, both in New Bedford, and in the region as a whole. Fisherman hoped the ODIN would receive a higher price, while processors waited to see if the

commodity pricing of fresh seafood showed any signs of change. The background and results of the project are presented in this study organized into six chapters.

Chapter One "Impediments to Quality Addressed by the ODIN" details the dilemma of the seafood industry which hears demands for improved quality from all quarters, but finds it uneconomical to do much about it.

Chapter Two "The ODIN's Achievements" describes how fish were handled on board, what differences were detected between fish handled with the new methods on board the ODIN and fish handled in the traditional manner, and how these fish were paid for.

Chapter Three "Impact of the New Bedford Auction System" elaborates on the manner in which fresh fish prices are actually set in New Bedford and New England as a whole, and how this price setting system determined the outlook of both the skipper and crew of the ODIN.

Chapter Four "Price Differentials for ODIN Fish" analyzes the ODIN price for selected species compared to the New Bedford Auction average price for those same species, to determine whether and to what extent a price differential for high quality fish existed.

Chapter Five "Buyer Reaction to ODIN Fish" discusses the reaction

of both primary buyers, (New Bedford processors) and secondary buyers, such as retail and foodservice buyers, to the ODIN's fish when they were exposed to it.

Chapter Six "Conclusions" sums up the effect of the project, discusses success and failure, and surveys the reaction to the project in the rest of New England.

CHAPTER 1: IMPEDIMENTS TO QUALITY ADDRESSED BY THE ODIN

The passage of the Magnuson Act in 1976, creating a 200 mile Fishery Conservation Zone and regulating foreign fishing, sparked renewed national interest in U.S. fishery resources. One of the objectives of the Magnuson act was to promote full utilization of the United States fisheries resources.

In comparison with other foods, the consumption of fish in the United States has been disappointingly stagnant. Per capita consumption has varied within a narrow range of 10 to 13 lbs. since 1909. (2) This stands in sharp contrast to the usage of other protein foods. Poultry use, for example has increased from 51.1 lbs. per capita to 64.1 lbs. between 1972 and 1982, an increase of 25% in ten years. Cheese consumption has gone up from 13.1 lbs to 20.1 lbs. during the same period. Beef consumption has declined from 94.4 lbs. to 77.2 lbs. per capita between 1976 and 1981. Dramatic changes in per capita consumption are possible within relatively short periods of time. (3)

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2. Fisheries of the U.S. 1983, U.S. Department of Commerce, National Marine Fisheries Service, Washington DC, April 1984, p. 81.

3. Sackton, John T., "Surimi Based Seafoods: The Opportunity for Seafood As a Food Ingredient" National Food Processors Eastern Research Highlights Conference, November 8, 1984, Washington, D.C.

Part of the impetus for these shifts in eating habits is the increased awareness of diet and health, illustrated by American consumers' declining interest in red meat. Poultry consumption has increased because the industry produced a standardized quality product, at a declining price relative to other protein foods. Cheese consumption has benefitted from increased demand for items such as pizza.

Fish is a low calorie, high protein food, that should be a natural beneficiary of changing consumer tastes. The fact that consumption is not increasing dramatically is a source of concern to the industry.

Poor quality has been one of the causes. In 1980 the Congressional General Accounting Office wrote to the Department of Commerce regarding complaints about the poor quality of U.S. fisheries exports, and about the poor quality of fish available for domestic consumption. The G.A.O. said "surveys . . . found the quality levels of seafoods in the domestic market to be very low, with large quantities receiving substandard grades." (4)

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(4) U.S. General Accounting Office, Washington D.C., letter of Oct. 15, 1980, to Philip Klutznick, Secretary of Commerce, the Department of Commerce, Washington D.C.

In 1981, the GAO followed up with a stronger letter, documenting numerous examples of foreign complaints about export products, and claiming that "variable quality impedes U.S. Exports". (5)

At the same time, the issue of poor seafood quality was attracting attention domestically. That year, a consumer survey by the Food Marketing Institute, the trade association representing major supermarket chains, found that one reason consumers were not eating more fish in relation to other sources of protein was fear of poor quality. Consumers reported they had little ability to judge fish quality properly, that they frequently encountered poor quality fish in supermarkets, and that retailers appeared to treat seafood as an inferior commodity compared to meat and poultry. These factors deterred consumers from buying and cooking fish at home. (6)

The persistence of quality problems in the seafood industry is caused by structural impediments in the manner fish is bought,

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(5) U.S. General Accounting Office, letter of June 22, 1981 to Malcolm Baldridge, Secretary of Commerce, Department of Commerce, Washington D.C.

(6) Miklos, Pam "Consumer Attitudes Towards Seafoods", Food Marketing Institute, 1750 K St., N.W., Washington D.C., 1981.

processed and distributed. The GAO letters to the Secretary of Commerce, and the Food Marketing Institute's survey on consumer attitudes towards seafood, reflected a growing concern about quality outside of the industry. This concern was reflected within the industry as well, with many industry spokesmen decrying the bad image of seafood products. (7)

Quality problems existed in many fisheries. Some of the most severe export quality problems were experienced by the salmon industry of the North West. In New England, most groundfish were poorly handled on board and a large portion of most trips contained inferior quality fish. Also many New England companies experienced rejection of their seafood exports.

Even though the GAO recommended "establishing the feasibility of . . . a system of price differentials for higher quality fish", (8) the impetus for the ODIN project did not come from Washington, or the National Marine Fisheries Service. Rather it came from the port of New Bedford.

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(6) See for example, Don Short, President Fishery Products, "The New Era of Seafood Marketing" presented at the International Seafood Conference, London, November 6-8, 1984.

(7) G.A.O. Letter of June 22, 1981.

In New Bedford, two specific factors heightened the concern about quality.

One factor was the rejection of poor quality exports. In the late 1970's, several companies, including Agro Marine, Capeway Seafoods, and others, attempted to export dogfish and squid into Europe. The initial reaction of foreign buyers was severely critical of the quality of the products being offered. Squid producers in particular, were stung by the complaints about their product. Some of the complaints were that New Bedford producers had not learned how to grade and size their product properly. Other complaints came from buyers attempting to discount the shore frozen squid product as much as possible in comparison with sea frozen squid produced on their own vessels. The result of these complaints was a perception in the port that poor export quality was hurting American companies' ability to sell seafood products abroad. (9)

The second factor was a decline in the overall quality of fish landed in New Bedford. Traditionally, New Bedford had been a strong union port. Most vessels belonged to the union, and the terms under which they fished, including number of days out, number of days in port, and the number of men in the crew, were all

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(9) In 1981, the New England Foundation attempted to form a New England exporters association based on these experiences.

subject to negotiations between the International Seafarer's Union, representing the fishermen, and the New Bedford Seafood Producers Association, representing the boat owners.

In the late 70's, some of the union's power began to erode as a large number of new vessels fishing from New Bedford were owned and operated by Portuguese families, who often did not join the union. Non union boats were accused of sailing with too few crew members, of not following the accepted lay in terms of paying the crew, and not following the requirements about length of trips and time between sailings.

As part of their management responsibility, the New England Fishery Management Council imposed a quota of 7500 lbs. per week per vessel on yellowtail flounder in 1978. This made the quality situation worse. The regulation allowed a vessel to land 7500 lbs. for each Saturday they were at sea. As a result, vessels began extending their trips from an average of 7 to 10 days to 15 to 16 days, in order to get the highest quotas by spending three Saturdays at sea. This hurt the general quality of the fish they landed. Furthermore, an underground system of fish dealing sprang up. "Nightriders", as they were called, bought during the night for cash any fish that a vessel carried in excess of the quota. At the next morning's auction, the vessel would hail the legal amount of fsh on the auction board.

The power of the nightriders further eroded traditional quality standards.

The upshot was that industry leaders in New Bedford, representing the mainstream unionized fishing vessels, began to worry increasingly about quality. They saw that improving quality, or imposing certain quality standards in the port, could perhaps reverse the decline occurring around them.

ORIGIN OF THE ODIN PROJECT

The initial idea for a quality demonstration project was proposed to the New England Fisheries Development Foundation by a representative group of industry leaders in New Bedford: Jim Costakes, head of the Seafood Producers Association, Howard Nickerson, head of the New England Fisheries Steering Committee, Brian Veasy, President of the New Bedford Seafood Co-op, and Tom Billy and John Linehan, from the National Marine Fisheries Service.

The New England Foundation represents both fishermen and processors in New England. It was created to replace the New England Fisheries Steering Committee, largely because industry felt New England was not receiving its share of federal Saltonstall-Kennedy fisheries development money. The Foundation's role was to seek and administer federal grant funds for fisheries development.

Saltonstall-Kennedy grants are federal fisheries development grants, derived from a portion of the duties on fishery products imported into the United States. They are collected by the U.S. Department of Agriculture in a manner similar to the funds used to support agricultural research and development, and are turned over to the Department of Commerce for use in promoting the growth and development of the domestic fishing industry. By law, 50% of the funds received by the Commerce Department must be awarded to industry applicants.

One of the first acts of the New England Fisheries Development Foundation was to solicit industry ideas about the best use of federal money. Each idea then was subjected to a rigorous screening, survey, and ranking process. The concept of a quality improvement project put forward from New Bedford, received the highest ranking of any single program, and consequently was submitted to NMFS as the number one priority of the Foundation.

The concept of the project was to demonstrate on board a vessel the best possible techniques of handling and stowing fish. The New Bedford Seafood Producers Association was asked to find a candidate vessel. Captain Gabriel ("Gabe") Skaar, owner of the F/V ODIN volunteered. The ODIN was an 84' steel stern trawler, built in Florida, which was typical of the New Bedford fleet. Although the

ODIN was not one of the largest vessels in New Bedford, the ODIN regularly fished 7 to 10 day trips on the Northeast Peak of Georges Bank. Part of Captain Skaar's personal interest in the project was his feeling that in his native Norway, fish was handled in a manner superior to that in the U.S. He was anxious to apply some of these Norwegian fish handling methods in New Bedford.

The Seafood Producers Association also recruited an experienced New Bedford Fisherman, Mr. Eugene Connors, to work for the Foundation as a vessel quality technician, and train the crew in the handling methods desired.

Captain Skaar and the ODIN made their first trip for the project in February, 1982.

CHAPTER 2: ACHIEVEMENTS OF THE ODIN

One attitude commonly held in the industry was that the highest quality groundfish was produced in Iceland and Norway. This attitude was based on fact. In the late 1960's and early 1970's, Iceland pursued a national policy of strengthening its fish exports. They introduced strict on-board handling procedures based on boxing and bleeding fish and a mandatory grading program. Only fish that were bled and boxed on board were eligible to receive the top price. The government's strategy worked, and by 1982, frozen Icelandic cod commanded a premium in the market as great as 50% over frozen Canadian cod products.

For similar reasons of national policy, Norway followed suit, and also introduced a grading system and a code of strict quality practices, including boxing, bleeding, and use of sufficient ice. The quality standards were enforced through a negotiated price differential backed up by a touch inspection system.

Boxing in specially designed plastic fish boxes was an important part of both countries' quality practices. Fresh fish has traditionally been stored in pens, in the holds of fishing boats. A typical pen is a section of the hold 8 to 16 feet deep, into which fish and ice are loaded for stowage after the fish are cleaned and gutted. If no shelves or supports are present, the fish in the pens suffer a tremendous amount of damage from bruising and crushing. They come out of the hold soft and deteriorate more

rapidly than fish that is not subjected to such abuse.

The truth of this is recognized in New England, where buyers continually request the top of the trip. They mean those fish caught most recently, and therefore on the top of the pen. In this case, the absence of crushing weight on these fish is fully as important as their relative freshness.

The Icelanders and Norwegians found that using rigid plastic boxes that could stack in the hold of a vessel not only served to protect the fish from crushing, but also speeded up unloading, since the fish did not have to be handled twice.

In the traditional manner of unloading a fishing boat, fish are shovelled or pitch forked out of the pen into a basket or bucket, which is then hauled up and dumped onto a dock or culling board. Fish handled in this manner is triply abused. First, it is handled when it is unloaded from the pen, then it is damaged when it is unloaded on the dock, and then it is handled again after it is weighed and packed. Boxing avoids all of these additional handling steps.

Studies done in Westmann Islands in Iceland in 1970 indicated that fish held in pens lost weight during storage compared to fish held in boxes. Total weight loss amounted to 3.6% for haddock

and cod over 10 days. Fish held in boxes lost virtually no weight. (10)

The other difference, in fact the deciding factor for both countries to convert to boxing on board, was that with boxed fish, the percentage of fish going into the highest value products dramatically increased. Frozen cod for example, is packed in three forms. First are individually quick frozen fillets (IQF Fillets, also called shatter-pack), which represents the top quality available. These fillets are frozen separately, and can be individually thawed as needed in a restaurant, for example. IQF fillets are the most expensive frozen cod fillets. Next in value comes "cellos", 5 or 10 lb. blocks of fillets, which must be thawed as a unit. These fish are still in fillet form, but they are not as high quality as the IQF fillets. Finally, the remaining fish is frozen into fish blocks. A fish block is a 10 or 20 kilogram block comprised of pressed fillets and pieces of fillets. It is not possible to pick out individual fillets. Fish blocks are used to make fish sticks, frozen breaded portions, and other prepared foods. Blocks are the cheapest form of frozen fish on the market.

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(10) Einarrson, Hjalta, et al, "Report on Use of Fish Crates Trial Operations in the Vestmanna Islands, Summer 1969", Fish Industry Research Institute, Reykjavik, Iceland, February 1970.

A typical freezing plant in Canada will produce 30% IQF fillets, 30% cellos, and 40% blocks from the catch of a large offshore trawler which lands fish in pens. That same trawler, if using boxes, will produce 70% IQF fillets, 20% cellos, and 10% block. With the price differential between IQF and block ranging from 30 to 50%, it is obvious what a substantial gain boxing is in this situation. (11)

Bleeding fish is also an important handling step, required by law in both Norway and Iceland. Bleeding means cutting the artery of a fish prior to gutting it, and allowing the heart to pump the excess flood out of the body. Bled fish produce whiter fillets, and they do not exhibit discolored bruise marks, which generally have to be removed from the fillet with loss of yield.

Other important handling practices include proper temperature control that keeps the fish chilled, and avoidance of abusive handling such as stabbing fish with pitchforks, or dropping fish 12 feet from the deck into the bottom of a pen.

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(11) These figures were provided by John Lightfoot, Manager of Quality Control, National Sea Products, Lunenberg, Nova Scotia, during a visit made by the author in June, 1981. Similar figures are obtained in Norway and Iceland.

Even though these quality procedures appear so elementary given the benefits, they were not accepted willingly by fishermen in either Norway or Iceland. In each case the fishermen fiercely resisted the new techniques and only the ability of the government in both countries to legislate and enforce binding quality standards, backed by the authority to set fish prices to the fishermen, has brought these techniques into general use. (12)

In adapting these techniques to the ODIN, and to New England trawlers in general, the Foundation had to contend with several major differences between the New England fishery and the Scandinavian fisheries.

First, many of the trawlers using boxes in both Norway and Iceland are far greater than typical New England vessels. In those countries it is not unusual for trawlers to be 200 to 300 feet in length, compared to the 120 foot length of larger New England trawlers. Because of their size, they have hold space large enough to accommodate boxes, they have large hatches and hydraulic winches powerful enough to haul out dozens of boxes at one time, and they have below deck fish processing areas where the crew can gut and

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(12) Based on conversations with Ministry of Fisheries officials in both Norway and Iceland by the author in August, 1982.

clean the fish prior to the fish going into the hold for stowage. All of these factors reduce the labor intensiveness of boxing fish.

Unless a vessel is specifically designed for boxing, using fish boxes is substantially more labor intensive than traditional methods. In the first Icelandic trials of boxing in the Westmann Islands, on board a traditional trawler, it took 71 minutes to handle a ton of fish in the traditional manner, but to box one ton of fish required 273 minutes. This figure represents all operations, including washing, restacking, re-icing and loading the boxes back on the vessel. (13)

The design of most New England vessels is not suitable for boxing. They generally have holds divided into a number of pens, they do not have open room to work below, and they do not have the fish handling and washing equipment that many larger vessels have.

Nevertheless, boxing and bleeding were the prime methods that were chosen to upgrade the quality of fish on-board the ODIN. The Foundation planned to attempt to introduce the same on board handling procedures in use in Iceland and Norway into New England without either legislation or regulation. The strategy was to demonstrate that the benefits were great enough to justify a price

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(13) Einarrson, Ibid.

premium, and then through the price premium, attract an increasing number of vessels to adopt improved on board handling procedures.

HOW THE ODIN HANDLED FISH

Because of the limitations just described, the ODIN never contemplated boxing an entire trip. An average trip for the ODIN was about 40,000 lbs. of mixed groundfish, including cod, haddock, yellowtail flounder, and dabs. Once the project was fully underway the ODIN carried 100 to 130 boxes, and landed between 10 and 12,000 lbs. of boxed fish, representing most of the cod and haddock that were caught.

The rest of the fish was stored on shallow shelves. The traditional New England vessel either uses no shelves whatsoever for lateral support in an 8' deep pen, or uses a single 4' shelf. When shelves are placed closer together, 24 to 30 inches apart, much of the damaging pressure is taken off the fish, and a higher quality product is produced. However, short shelved fish does not have the same protection boxed fish does when it is unloaded. The shelves have to be taken down, and the fish unloaded in the traditional manner.

One of the objectives of the project was to compare the effects

of various handling methods. Table No. 1 reproduced from Quality At Sea shows the relative efficacy of bleeding, boxing, and shelving compared to traditional methods.

TABLE NO. 1

COMPARATIVE VALUE OF DIFFERENT HANDING AND STOWAGE TECHNIQUES

Technique:	Percentage of possible quality
Bled & Boxed	95% - 100%
Boxed, Not Bled	80%
Bled, Short Shelved (24")	80%
Not Bled, Shelved (24")	60%
Not Bled, Shelved (36)	55%
Traditional Method	50%

Source: Quality at Sea, p. 7.

In addition, three other factors are very important to maintain good quality fish on board: washing, proper amounts of ice, and proper workmanship.

During the period of the project, the ODIN took additional ice and the crew was instructed in ways of gutting and ripping the fish that did not reduce yield. In order to produce high quality fish, the following special procedures were carried out on board the ODIN when conditions were favorable.

(1) When the cod end was dumped on deck, fish was sorted by species, and size. As the cod and haddock were sorted, the major artery was severed so the fish could bleed.

(2) The fish were carefully ripped. To gut fish, a crew member made a knife cut to expose the entrails of the fish. A second crewman then removed the entrails by hand, and put the fish into a washing tank. When the tank was full (about 10-20 minutes) it was drained, and the fish were dumped into the hold.

A special chute was installed in the ODIN's hatch to break the fall of fish being dumped from the deck into the hold, in order to

reduce bruising. From the chute, the fish were packed into boxes and iced. Filled boxes were stacked in the hold. Each box contained about 90 lbs. of fish, segregated by species and size.

The crew followed the same procedures for bleeding, ripping, and washing fish that was not boxed. However, this fish was stored on shelves in pens, and covered with ice.

Because these procedures were time consuming, the crew would not attempt them if they had a large tow, for example more than two or three thousand lbs. of fish. Furthermore, flounder were handled differently. In New Bedford, flounder is not gutted, but simply stored in pens in ice.

All these handling steps required the full co-operation of the crew to work properly. This was not always forthcoming. At times, boxed fish was landed that was only partially bled, or that was not sorted well. At other times, the fish exhibited poor workmanship. The level of co-operation the crew gave the project varied according to how much of a price premium the crew felt they received. This phenomenon will be discussed in more detail in later chapters.

RESULTS:

The initial objective of the project was to carry out the bleeding and boxing techniques described, and measure whatever detectable differences there were between specially handled fish, and fish handled in the traditional manner. In order for the ODIN to get a price premium for top quality fish, it was incumbent to demonstrate to New Bedford processors exactly what that fish was, and how it was different than the traditional fish they were used to.

From March 3, 1982 to June 1, 1982, the ODIN landed seven trips including boxed fish. A portion of each trip was used for comparative tests. The objective of the test series was to determine the difference between boxed, boxed and bled, shelved, shelved and bled, and traditionally handled fish. Unfortunately, the manner in which the experiments were carried out was too haphazard to produce more than general results.

The following tables and figures summarize the data as well as possible. Table 2 shows comparative yield data between boxed at sea fish and traditionally stored fish. Most of the tests were done on cod.

TABLE 2.

COMPARATIVE YIELD OF BOXED VS. TRADITIONALLY HANDLED FISH

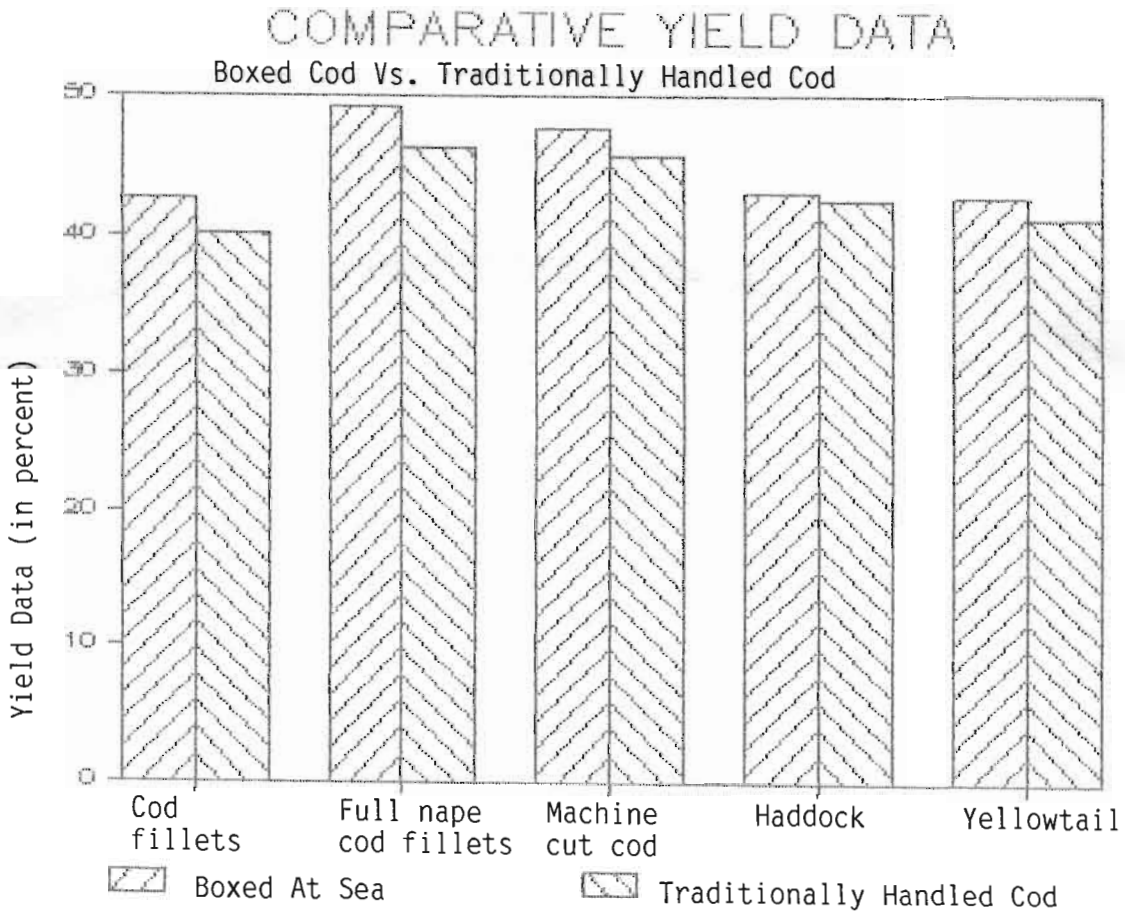
	Boxed	Traditional
cod fillets (napeless)	42.7%	40.25%
cod full nape	49.3%	46.3%
machine cut cod (full nape, pin bone in)	47.7%	45.7%
Haddock	43.0%	42.55%
Yellowtail	42.7%	41.15%

All cutting was done by hand by experienced cutters with the exception of the machine cut cod. Also, these figures are averaged over the seven trips made by the ODIN. Not all tests were done each trip. However, the overall conclusion is clear. Table 2. shows that boxing at sea does provide an increase in yield to the processor

that can be as large at 6% in some cases.

Figure 1. covers the same data, confirming that boxed at sea fish generally shows improved fillet yield compared to traditionally handled fish.

FIGURE 1.



One of the problems in carrying out these tests is that many plants in New Bedford do not routinely calculate their yield figures. In order to calculate yield accurately, the plant owner has to know exactly how much fish is going into the cutting line, as well as how much is coming out as fillets. The practice of putting anywhere from 130 to 145 lbs. of fish in a box that nominally holds 125 lbs. makes accurate calculation of yield figures impossible. This is in marked contrast to Canadian fillet plants, for example, where the yield is calculated very exactly.

A gain of 1 to 6% yield is much more impressive to a plant manager who pays considerable attention to his actual production yield than to a manager who calculates yields by guesswork. The figures do not look impressive to a traditional New Bedford fish plant owner who thinks he is getting 50 to 55% yield on most fish he processes. Yet, by using the nominal weight for fish entering the plant, instead of the actual weight, these unrealistic yield figures are obtained. (14)

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(14) This information comes from Jeff Davis, Executive Vice President of Baader North America, a major supplier of fish processing equipment. He is very familiar with how yields are calculated in New Bedford.

FIGURE 2.

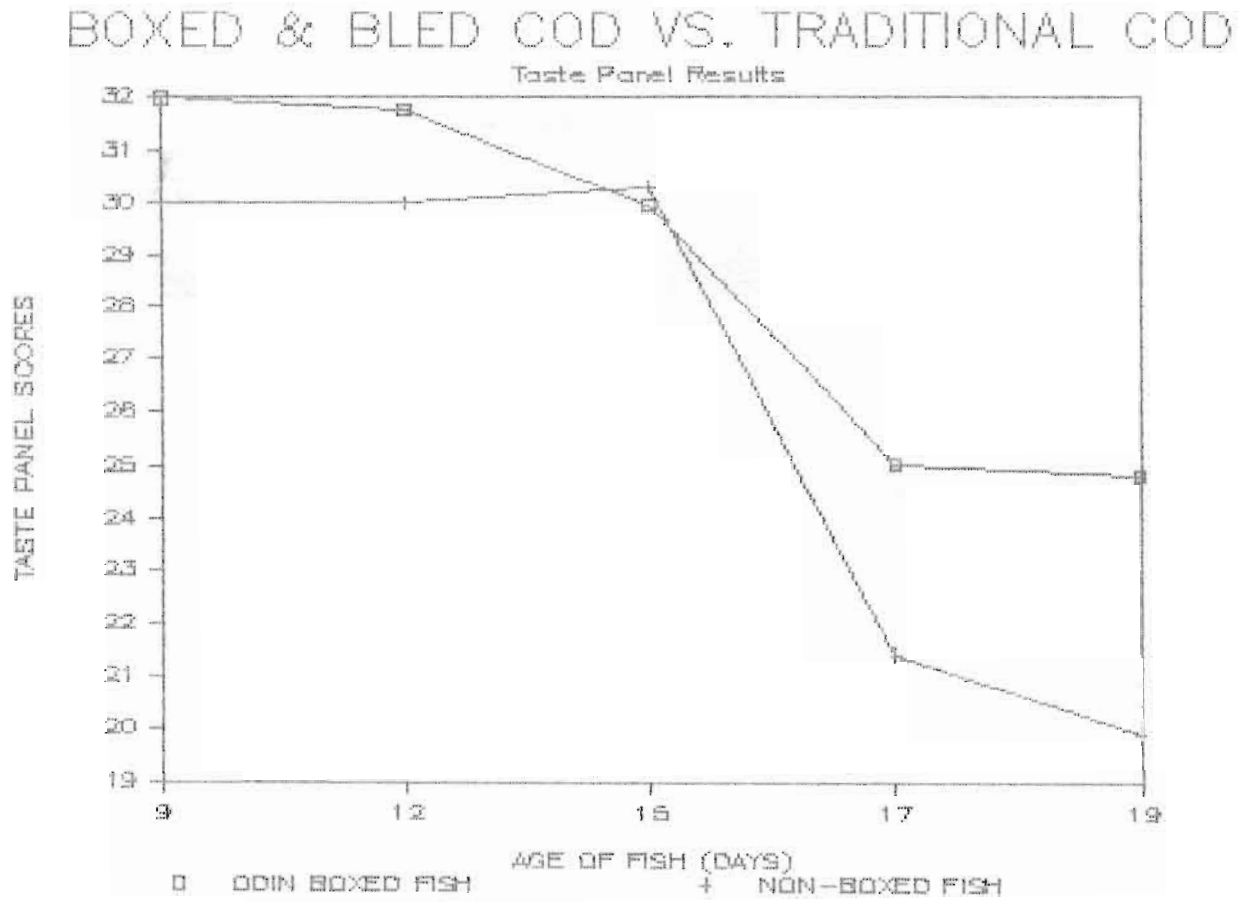

Figure 2 shows data from a taste panel that compared the flavor of cooked samples of cod that had been boxed, vs. those that had been handled traditionally. This test was done on three occasions, and the results are an average of those scores.

The taste panel was not formally trained, but consisted of plant personnel available at the time of the test. Each person was given two unidentified samples of fish, and asked to score them on a scale of 1-5, where 5 was good quality, 3 was acceptable, and a score below 3 was reject. Each taste panel consisted of seven people, so that the maximum score that a sample could achieve was 35.

The overall trend of the test shows that boxed fish has a better shelf life than traditionally stored cod. In fact, the experience of the project has been that these tests understate the actual shelf life difference. In tests conducted in 1983, at Turner Fisheries in Boston, boxed fish consistently had a 4 to 5 day greater shelf life. Turner defined shelf life as how old a fish could be before they would not ship it to their best customer. Boxed and bled fish could be shipped as much as 4 to 5 days after they would refuse to ship traditionally stored fish.

Because the objective of the tests was to convince New Bedford processors of the difference between premium quality fish handled by the ODIN and traditionally handled fish, the tests were conducted in different processing plants around town. Besides the actual test data, the comments and visual observations of different processors were extremely important. For example, Mr. Michael Foley, President of M.F. Foley Co., noted that the "fish were exceptionally well

washed and gutted for New Bedford fish", on both the first and second trip. (15) Mr. Ron Nanfelt, President of Coastal Fisheries, New Bedford's largest processor of flounder, said he thought "boxed at sea yellowtail had an additional 3 days shelf life." (16)

In the spring of 1982, the New Bedford Seafood Co-op manifested problems which led to its closing a few months later. The original plan for the Co-op to buy the ODIN's trips and conduct all comparative tests in their plant, as a control, went out the window. Instead, Gabe Skaar hailed his trips on the New Bedford auction. His hail did not include the boxed and bled fish, which was reserved for particular processors who had agreed to carry out tests. These processors, especially M.F. Foley Inc., and Parisi Inc., who is owned by North-coast Seafood in Boston, Massachusetts, paid a premium for the boxed and bled fish of 5 cents per pound above the ODIN's board price.

To illustrate the logistical problems of the project, the following list shows how the first seven trips were unloaded:

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(15) Quarterly Report, July 30, 1982, New England Fisheries Development Foundation, Boston, Mass.

(16) Ibid.

Trip 1: Purchased by Pilgrim Fish Co.; boxed fish unloaded separately and purchased by M.F. Foley.

Trip 2: Purchased by Golden Eye Seafoods; boxed fish unloaded separately and transferred to M.F. Foley.

Trip 3: Purchased by Golden Eye; lumpers refused to keep boxed fish separate, no tests done.

Trip 4: Bad weather forced ODIN in with broken trip. Golden Eye purchased trip, and boxed fish as well.

Trip 5: Purchased by Tichon Seafoods; boxed fish sold to Golden Eye.

Trip 6: Purchased by Golden Eye; boxed fish sold to Coastal Fisheries.

Trip 7: Purchased by Golden Eye; unloaded at Sea View Fillet Co., boxed fish purchased separately by Foley.

As this list illustrates, the ODIN experienced a great deal of confusion and uncertainty in the unloading of each trip. During several occasions, lumpers, who are unionized fish unloaders in New Bedford, objected to the boxes on the grounds that they threatened their jobs. In fact, the lumpers are paid by the weight unloaded, not by the time it takes. To resolve this problem, a particular

Boss Lumper, who was friendly to the project, was recruited to oversee the unloading of the ODIN whenever the ODIN landed. The objection the lumpers raised did have implications for the future, however, because the ODIN, which could unload up to six boxes at a time, unloaded the boxed fish faster, and with fewer men, than traditionally handled fish.

A second difficulty in the early stages of the project was that the plants buying the trip from ODIN were sometimes not aware that they were not getting the boxed fish as well. Technically, it is against union rules for a vessel to hold back part of its catch, or to sell it to a different buyer. This problem was resolved by securing the agreement of processors to resell the boxed fish to those companies who had agreed to conduct tests. In some cases, the company buying the ODIN kept some of the boxed fish for themselves.

The problem of washing and returning the boxes to the ODIN was taken care of by the staff of the project.

HOW THE FISH WAS PAID FOR:

The New England Fisheries Development Foundation had originally been willing to pay a premium price for the fish from the ODIN in exchange for demonstrating the improved on board handling procedures.

However, this did not prove necessary. From the beginning of the project, certain processors in New Bedford were willing to pay five cents over the ODIN's board price for boxed and bled fish. This premium was not reflected in the ODIN's board price, but was paid separately by the processor involved directly to Gabe Skaar.

So, during the first several months of the project, the ODIN would receive two settlement sheets. The first sheet would be from the buyer of the vessel on the New Bedford auction. The second would be from the buyer of the boxed fish.

In the next chapter, the New Bedford auction is discussed in more detail, and the impact that the auction system had on attempts to get a price premium for quality fish is explained.

CHAPTER 3: THE NEW BEDFORD AUCTION

People characterize the seafood industry as "supply driven". This means that to both processors and their customers, supply is the determining factor that influences every other aspect of the market.

There are several reasons why supply is the determining factor in the buying and selling of seafood. First, because seafood is not cultivated or raised, its harvest is dependent on weather and natural population conditions. In many instances a particular species, size, or type of fish is simply not available, or in very short supply. In such circumstances, a buyer who needs that product cannot quibble over the quality of what's available. Fresh seafood is perishable. Contrary to popular myth, seafood is not more perishable than other foods. What is different about seafood is that it is generally brought to be processed two to nine days after being caught. Therefore, the shelf life of seafood after it is processed is often less than half of its total shelf life. By contrast, chicken, another perishable food, is processed within 20 minutes of being killed. Its entire shelf life remains after it has left the processing plant.

Because seafood is perishable, and processors are often holding fish with half its shelf life gone, processors cannot afford to hold inventory. When a lot of fish s landed, and processors must move their inventories quickly, the price of fresh fish will drop

dramatically. This is why the industry is characterized as supply driven.

In New Bedford, a processor has four ways to buy fish. First, he can buy fish through the auction. Second, he may buy fish directly from a vessel that does not sell through the auction. Third, he may buy directly from another dealer, who has bought fish from vessels, and fourth, he may buy fish from "over the road", meaning fish from other ports in New England, or Canada. Most processors use all four methods to buy fish.

There are two major fish auctions in New England, the New Bedford and the Boston Auction. These auctions are reference points which govern the prices of fish bought over the road. In Boston, only a very small portion of the fish used by local processors is actually bought at the auction. With the exception of Connolly Seafoods, Inc., which is the largest single buyer on the Boston Fish Pier, most processors buy no more than 10% of their total fish on the Boston auction. However, the Boston auction price for cod, haddock, redfish, and pollock, sets the prices for fish landed in Gloucester and Maine, and often for whole fish brought over the road from Canada as well. (17)

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(17) Conversation with Bob Gill, former Vice President, Turner Fisheries, and now Executive Director, Boston Fisheries Association.

In Boston, each vessel's trip is sold by species. For example, three vessels selling haddock all put their hail on the board. The hail is the Captain's estimate of the amount of fish he has on board, broken down into different species and size ranges. Buyers must take all the haddock available in 1000 lb. lots, at a single price. If the initial price is too high to sell all the fish, the price is dropped until all lots are sold. If all lots are sold right away, the auctioneer will raise the rice until some buyers decide to drop out.

The goal is to establish a uniform "Boston" price for each species, although it is often violated in practice. In our example, the haddock price may come out to 90 cents. Other prices are then set in reference to this price. In Gloucester, haddock would be sold for 80 to 85 cents. In Maine, haddock would sell at a deeper discount. Canadian haddock over the road may sell for 70 cents. All these prices will go up and down together based on the Boston Price.

The reason the Boston auction operates this way is because all vessels selling fish at the auction must unload their fish on the Boston Fish Pier which is a public facility operated by Massport. Processors then come and haul away the fish they have bought, i.e. 2000 lbs. of haddock from a particular vessel.

In New Bedford, the auction is set up completely differently. Until recently, there has been no public waterfront space available for unloading fishing vessels. As a result, the auction was only open to buyers who could arrange to unload vessels. At the auction in New Bedford, buyers must buy the entire catch of a particular vessel. They do this by bidding on individual species. Table 3. shows the fish sold on the Auction on July 16, 1982. It was prepared by one of the fish buyers to record prices, and it has more detail than the auction records kept by the National Marine Fisheries Service. This table will be used to illustrate how the New Bedford Auction works. (18)

First, the species listed include haddock and scrod haddock, three sizes of cod, which are called large cod, market cod, and scrod cod, and numerous types of flounder. New Bedford is a major port for flounder. The flounders listed are either from Georges Bank, or Nantucket Shoals, the shallow waters to the east of Nantucket. To a buyer, there are differences in the fish depending on where they were caught. Lemon sole from Georges Bank, for example, tends to run larger than lemon sole from the shoals. The other flounder referred to are blackbacks, small blackbacks, and peewee blackbacks, and large

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(18) The basis for Table 3. is the auction information used by the New Bedford Seafood Co-op, on July 16, 1982.

TABLE 3. THE NEW BEDFORD AUCTION ON JULY 16, 1982

Note: lbs. are in thousands

lbs.	species	price	lbs.	species	price	lbs.	species	price
	BENDER			VILA DE ILHAVO			NIAGARA FALLS	
2	HADD	$0.70	6	HADD	$0.45	17.5	HADD	$0.45
	SCROD	$0.30		SCROD	$0.35		SCROD	$0.35
25	L COD	$0.25	30	L COD	$0.35	45	L COD	$0.30
	M COD	$0.26		M COD	$0.30		M COD	$0.29
	SCROD	$0.20		SCROD	$0.20		SCROD	$0.25
	Georges			Georges			Georges	
	LS			LS		1	LS	$0.80
	BB			BB			BB	$0.70
	SBB			SBB			SBB	$0.40
	PW			PW			PW	
	Shoals			Shoals			Shoals	
	LS	$0.50	1	LS	$0.60	0.5	LS	
0.7	BB	$0.50		BB	$0.60		BB	$0.40
	SBB	$0.40		SBB	$0.50		SBB	$0.30
	PW			PW			PW	
8	LG YT	$0.50	6	LG YT	$0.50	5.5	LG YT	$0.45
	F			J			C	
	IRENE MARIE			FALCON			CAYENNE	
4	HADD	$0.45		HADD		1.5	HADD	$0.60
	SCROD	$0.35		SCROD			SCROD	$0.50
30	L COD	$0.30	15	L COD	$0.30	19	L COD	$0.40
	M COD	$0.30		M COD			M COD	$0.26
	SCROD	$0.25		SCROD			SCROD	$0.20
	Georges			Georges			Georges	
	LS		12	LS	$0.90		LS	
	BB			BB	$0.75		BB	
	SBB			SBB	$0.60		SBB	
	PW			PW			PW	
	Shoals			Shoals			Shoals	
1	LS	$0.60		LS			LS	
	BB	$0.60		BB		6	BB	$0.55
	SBB	$0.40		SBB			SBB	$0.40
	PW			PW			PW	$0.30
5	LG YT	$0.56	5	LG YT	$0.50	6.3	LG YT	$0.50
	R			D			S	

TABLE 3. THE NEW BEDFORD AUCTION ON JULY 16, 1982 (Continued)

ODIN		SEA GULL		CAREVELLE		BRENDA		TRIUNFO	
25 HADD	$0.40	HADD		4 HADD	$0.50	HADD		2 HADD	$0.40
SCROD	$0.30	SCROD		SCROD	$0.40	SCROD		SCROD	$0.30
21 L COD	$0.40	2 L COD	$0.45	22 L COD	$0.40	26 L COD	$0.36	9 L COD	$0.25
M COD	$0.35	M COD	$0.30	M COD	$0.30	M COD	$0.30	M COD	$0.32
SCROD	$0.35	SCROD	$0.21	SCROD	$0.26	SCROD	$0.22	SCROD	$0.20
Georges		Georges		Georges		Georges		Georges	
LS		LS		LS		LS		LS	
BB		BB		BB		4 BB	$0.40	BB	
SBB		SBB		SBB		SBB	$0.30	SBB	
PW		PW		PW		PW	$0.20	PW	
Shoals		Shoals		Shoals		Shoals		Shoals	
1.5 LS	$0.60	10 LS	$0.55	9 LS	$0.55	13 LS	$0.55	1 LS	$0.40
BB	$0.60	BB	$0.55	BB	$0.55	BB	$0.55	BB	$0.40
SBB	$0.50	SBB	$0.40	SBB	$0.45	SBB	$0.40	SBB	$0.30
PW		PW		PW		PW		PW	
2.5 LG YT	$0.40	35 LG YT	$0.45	LG YT		LG YT		12 LG YT	$45.00
B		B		S		D		Y	

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yellowtail. For clarity, approximately seven additional species have been left off the table.

Table No. 3. Illustrates a number of points.

1. Specialization by different vessels:

The boats on the auction board can be subdivided into smaller groups based on where they fished, and what they hailed. For

example, notice that the vessels which hail large amounts of cod and haddock do not generally land significant amounts of flounders. The reason is that these vessels were fishing in different places.

In New Bedford, each buyer must take the vessel's entire catch. No buyer can purchase just part of a vessel's hail. In Table 3. the initial at the bottom of the list of species represents the name of the buyer who bought the entire trip. Just as boats specialize, landing predominantly one type of species during certain times of the year, buyers specialize as well. A particular company, for example, may sell large amounts of yellowtail, and relatively little cod or haddock. The buyer is more likely to bid on boats having a large amount of flounder, because he knows he will just have to resell the cod and haddock to another dealer. Other dealers specialize in cod and haddock, and try to avoid vessels that hail mostly flatfish.

The ODIN has traditionally fished on Georges Bank, and during the year will land more cod than any other species. For most of the year, Gabe Skaar concentrates on cod and haddock. For this reason, the boxing project also concentrated on these species. After the initial experiments with yellowtail flounder, virtually all the boxed and bled fish landed was cod and haddock. The dealers who bought boxed fish from the ODIN also tended to specialize in cod and haddock. Their best customers and accounts took these

species. They did not have customers of their own who took large volumes of flounders, for example.

2. How a vessel is bought.

In order to buy an entire vessel, the buyer has to bid higher than other bidders on just one species. He does not have to bid higher on all species. This is the single feature of the New Bedford auction that leads to the greatest distortion in prices. Table 4. (p. 42) lists the vessels receiving the high and low price for selected species on July 16, 1982.

For example, the F/V BENDER hailed 2,000 lbs. of haddock and scrod haddock. They received $.70 for their haddock. The other prices on the board for haddock were in the $.40 to $.60 range. In this case, a buyer bought the BENDER by bidding up the price of haddock, of which there were only 2000 lbs. on board. In doing so, they secured 25,000 lbs. of cod at $.25. The overall average price for haddock that day was 49.9 cents. The average price for cod was 33.6 cents.

In other cases, competitive bidding occurs on the actual fish that buyers want. For example, the F/V FALCON hailed 12,000 lbs. of lemon sole from Georges Bank. There was not a lot of lemon sole hailed on other vessels, and the FALCON received the highest price

on the board, even though she also had the largest amount. In this case, buyers who specialized in flounder were desperate to line up supplies for their customers.

TABLE 4: HIGH AND LOW PRICES FOR SELECTED SPECIES, 7/16/82

Haddock	F/V Bender	.70	2,000 lbs.
	F/V ODIN	.40	25,000 lbs.
L Cod	F/V Sea Gull	.45	2,000 lbs.
	F/V Bender	.25	25,000 lbs.
Lemon Sole	F/V Falcon	.90	12,000 lbs.
	F/V Triunfo	.40	1,000 lbs.
L Yellowtail	F/V Irene Marie	.56	5,000 lbs.
	F/V ODIN	.40	2,500 lbs.

3. Which is the Highest Paid Vessel on the Board

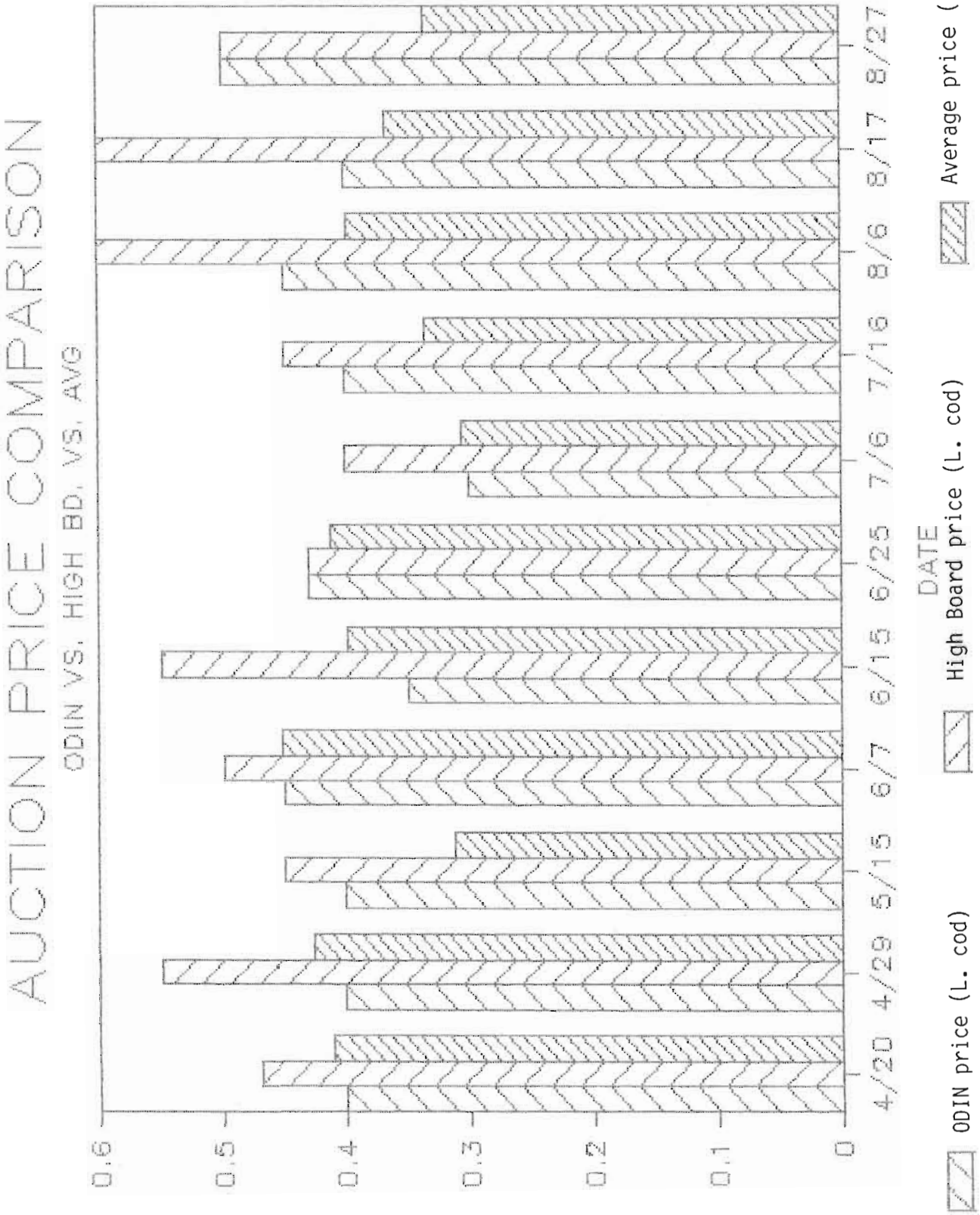
It is almost impossible to judge from the auction board whether a vessel is receiving a price premium or not. In Table 4., it appears that the ODIN, with the lowest price on the board for two species, seems to have fared badly. Yet on cod, the weighted average board price was 31.6 cents (for large cod and market cod), while the ODIN's price was 37.5 cents, which is 6 cents, or 19% over the average price.

Looking at these prices, the crew of the ODIN felt they were not getting compensated for the additional labor they put into caring for their fish. Yet, the buyer of the ODIN's trip, Golden Eye Seafoods, paid the ODIN 6 cents over the average board price for 21,000 lbs. of cod, on a day that 251,000 lbs. of cod were landed in New Bedford.

Figure 3. (p. 44) shows the ODIN's prices for large cod, the highest board price for large cod, and the average board price for large cod, for eleven trips during the spring and summer of 1982.

In only 2 out of 11 cases did the ODIN receive the highest price on the board for large cod. When the crew saw another vessel receive a higher price, they felt taken advantage of. The prices on July 16 are a perfect example of their problem. For months, the

Figure 3.


AUCTION PRICE COMPARISON
ODIN VS. HIGH BD. VS. AVG
PRICE ($0.00)
0
0.1
0.2
0.3
0.4
0.5
0.6
4/20
4/29
5/15
6/7
6/15
6/25
7/6
7/16
8/6
8/17
8/27
DATE
ODIN price (L. cod)
High Board price (L. cod)
Average price (L. cod)

ODIN had been involved in a project to maximize the quality of the fish they landed. Some of their fish was boxed, the rest was short shelved. The crew took exceptional care with gutting and icing the fish. They also had been continually told how great their fish was. It had been praised by outside buyers, tested, and specially sought after. Then, on the auction board, they got 40 cents for their haddock, while the F/V BENDER, whose crew has done nothing more than gut the fish and shovel it into the hold, got 70 cents for haddock. To the crew, average prices do not mean a great deal. They feel that if one processor can pay 70 cents for somebody else's mediocre fish, why will they not pay that price for higher quality fish.

The crew does not stop to calculate average prices, nor do they figure whether they are over the average board price or not. Generally, they compare their price with the highest price on the board. In the case of the ODIN, since the vessel was engaged in a special attempt at improving quality, the crew felt they should be the highest boat on the board trip after trip.

This attitude was shared not only by the ODIN's crew, but by other fishermen in the port as well. Most of them were well aware that the ODIN was attempting to get a price differential based on quality fish. Each time they saw that the ODIN did not get the highest price on the board, it confirmed their belief that processors

would never pay such a premium. That is the single greatest reason why additional vessels did not join the project.

Gabe Skaar, as skipper of the ODIN, shared some of the crew's frustrations, but he had other concerns about the auction as well. First, as an independent fisherman, Gabe did not want to commit his fish to any particular buyer. His feeling was that if he did so, there would be too great a risk that he might be taken advantage of, and that he may miss selling his trip to a buyer who could have paid more. In addition, a union boat is required to sell through the auction. Because competition for fish is fierce, a union vessel that violated the rules by selling to one processor would be threatened with retaliation by other processors denied access to that fish.

In order to minimize the logistical problems of unloading and monitoring the boxed fish, and because he was guaranteed a premium of 5 cents over his board price for boxed fish, Gabe was willing to keep the boxed fish off the board. However, in the latter part of the year, in an attempt to get a better price, Gabe began putting boxed fish up on the board in a separate hail from his traditionally handled fish. In the next chapter, the success of this strategy will be analyzed.

It is not possible to discuss New Bedford Auction prices without raising the issue of price cutting. Often a vessel will not receive the price listed on the board for his fish. This practice is not easy to document. The reason is that no skipper likes to tell other fishermen that he actually was forced to sell his fish for less than the stated price at the auction. Union rules will allow a processor to cut the price for fish, if upon examination, it is of substandard quality. However, this becomes an issue only when other circumstances are present as well.

Two circumstances that will lead buyers to attempt to cut the price of fish below the stated auction price are first, when for whatever reason, a buyer decides that he has paid too much for the fish; and second, when prices are high, processors are more apt to demand that fish meet minimum quality standards in order to receive the full price.

Now, why would a processor pay more for fish than he thought he should? It happens in the auction, when a buyer makes a bid on a vessel for the purpose of raising the overall price, or establishing a price, without intending to actually maintain his bid and take possession of the fish. To the buyer, the auction not only represents the price of fish on that day, but it also represents the value of his inventory. If he has bought quantities of fish at a lower price the day before, and he can raise the average price of cod through bidding, for example, he has made a windfall on his inventory.

He can sell it at the new, higher price. In the same manner, if he is caught with an excess of high priced fish in a falling market, he stands to lose money. For these reasons, there is a lot of bidding on fish that buyers do not intend to possess themselves, but that they want to establish a price on. When a processor ends up with fish he did not want to own in this situation, he will use whatever means he has to cut his cost, starting with reducing the price to the fisherman.

An example of this occurred with the ODIN on September 17, 1982. The ODIN hailed only 2500 lbs. of cod, and received the highest price on the board, $1.00 lb. Yet in addition to the cod that was hailed, the ODIN had 9000 lbs. of boxed cod. A number of buyers were attempting to get the boxed fish on board the ODIN this trip, because in response to complaints from processors, the ODIN abandoned the preferential treatment given the M.F. Foley Co, and Parisi Seafoods, Inc., who had consistently paid a 5 cent premium for boxed fish. As a result, instead of the boxed fish being pre-sold, it was available for whichever processor wanted to bid on it.

The trip was bought by Sea View Fillet Co., and on the settlement sheet, Sea View paid only $.42 for all the cod. This represented a substantial difference from the stated price of $1.00. However, the average price of cod that day was 32.9 cents, so at 42 cents, the ODIN received a 9 cent premium over the average board.

In conclusion, it should be obvious that the fish prices reported from the New Bedford Auction reflect a large number of variables. The price received by any individual vessel is the result of the interplay of a host of factors, including demand for the fish that vessel usually lands, the mix of species hailed by the skipper, what other vessels are landing that day, the quality and size of the fish, and external factors such as different processors' inventories. It is especially important to note that the entire price received by a vessel for one trip may be the result of external factors that have nothing to do with the vessel or the quality of its fish. The frustration felt by fishermen with the auction is partly based on such instances when their individual efforts do not matter at all in determining what price they get for their fish. This is one reason fishermen have little incentive to land a higher quality product.

However, the external factors that made the variation in auction prices from week to week so frustrating to the crew cancel each other out over a longer period of time. Averaged over six months or a year, factors such as inventories, the amount of different species landed, and the number of vessels on the board, all tend to average out. What remains is the vessel's true relation to the average board price.

In the next chapter, the question of whether the ODIN received a price premium for landing quality fish will be taken up.

More important than demonstrating that quality fish could be landed in New Bedford, the objective of the ODIN project was to determine whether such quality fish could command a premium in the open market. The New England Fisheries Development Foundation was well aware that in Norway, Iceland, and Denmark, improved quality on board fishing vessels had only come about after the government had taken steps to require certain quality procedures. Periodically in the U.S. Congress, bills have been introduced to require stricter federal regulation of fish products, through a mandatory grading system. However, the industry has felt that although possible as a last resort, such a system would be awkward to administer, cumbersome, and expensive to comply with.

A far superior alternative was to improve quality through providing proper incentives to fishermen. The ODIN project was developed to test that hypothesis. Transfering the technology necessary to produce high quality fish on New England fishing vessels was not difficult compared to attempting to overcome the impediments that prevent fish prices from reflecting quality differentials.

This chapter will measure whether the project was successful in meeting that goal. First, the methodology of determining an average New Bedford price will be described, and then the ODIN's relationship to the average New Bedford board price will be measured

before, during, and after the time the vessel was actively engaged in the project.

METHODOLOGY:

From the illustration of New Bedford auction prices given in the last chapter, it is apparent that determining the true average price on a given day is difficult even for participants in the auction. Prices vary depending on the amount of fish a particular vessel has, and the bidding strategy of the buyer who wants that vessel. As a result, the nominal price any individual vessel receives may reflect something quite different than the market price of that species.

The market price of a particular species of fish is defined as the average price prevailing for that particular size and species in New Bedford on that day. Because the variability introduced by buying strategies and the amount of fish a vessel hails tend to average out when the volume is sufficient, a weighted average price that takes account of all vessels landing fish that day will give the true market price of the fish species.

The weighted average price of the major species landed in New Bedford was calculated for each date on which the ODIN sold fish for the period January 1, 1981 through June 30, 1983.

To calculate the weighted average, the raw National Marine Fisheries Service price reporting sheets were analyzed for each date in question. The National Marine Fisheries Service has a market price reporting service for the two fish auctions in New England. In New Bedford, they have a statistics office which monitors auction prices daily. These reports then are published three times a week, in a publication known as the "Boston Blue Sheet." However, the Boston blue sheet simply reports the range of prices, i.e. the high price on the board and the low price on the board, and also reports the volume of each species landed. This range is useless for determining the actual price because it does not tell you what percentage of the fish landed sold at which price.

The raw NMFS price sheets obtained for this study listed the amount of fish hailed by each vessel, and the amount of fish sold at each price. Thus, using these sheets, it was possible to determine the total amount of cod sold, and the amount of cod sold at each price. From this information, a true weighted average price could be calculated.

However, the total amounts are reported by species only for cod and haddock. Yet, different prices are bid for size ranges within each species. Typically a cod buyer will quote a price on whale cod, large cod, market cod, and scrod cod. Haddock prices are

quoted for haddock and scrod haddock.

The auction buyer does not generally have full information on the proportion of size ranges of cod for example, that is on board the vessel he is buying, except what he is told by the skipper and what he knows about the reputation of the vessel. For the purposes of calculating the average price, the different prices quoted for different sizes of cod and haddock were taken into account. However, it was assumed that each vessel landed the same proportion of the various size ranges.

To sum up, the average price for cod was calculated by multiplying the proportion each vessel represented of the total cod landings by the price received by that vessel. Prices for haddock were calculated in the same manner. Once weighted average prices had been established for the various sizes of each species, the price of all sizes would be averaged to get a true average price. Yellowtails, however, are hailed and priced by size. For the purpose of this study, only Large yellowtails, 100 to 110 count per 125 lb. box, were averaged.

The species chosen for the price comparison were large and market cod, all cod (an average including scrod cod), haddock

(averaging haddock and scrod haddock) and large yellowtails (100/110 count). Cod and haddock were chosen because they represent the major portion of the ODIN's catch, and because these species were also the species that were boxed. Yellowtail was chosen as a control species. Yellowtail was not an important fish to the ODIN, nor was yellowtail the focus of the improved handling techniques, with the exception of short shelving. If the ODIN's price for yellowtail changed during the course of the project, it would indicate that possibly yellowtail were being bid up as a means to buy cod or haddock. Thus, a high price for yellowtail, compared to an average price prior to the start of the project, could be an indication of a premium really directed at cod or haddock.

ACCOUNTING FOR THE BOXED FISH

As mentioned earlier, during the initial months of the project, the ODIN did not put boxed and bled fish on the board, but sold it separately at a premium of 5 cents over the auction price. Generally it was divided among processors in New Bedford who would agree to pay this premium.

When boxed fish was not sold on the board, it was not included in the average board price, nor the ODIN's board price. As a result, when the boxed fish was not included, the actual value of the ODIN's catch was understated.

However, in the late summer of 1982, Captain Skaar decided to hail the boxed fish on the auction as well. When the boxed fish was sold on the auction, or reflected in the ODIN's settlement sheet with the processor who bought the vessel, it was included in the average price.

Processors in New Bedford were made aware of the improved handling techniques used by the ODIN in the initial months of the project. The ODIN not only boxed and bled a portion of its catch, but handled the rest of its fish in an exceptional way as well. Most of the additional fish the ODIN caught was short shelved; was properly washed, gutted, and well iced, and some of the short shelved fish was bled. Processors knew that by buying the ODIN, with or without the boxed fish, they were buying a premium quality fish.

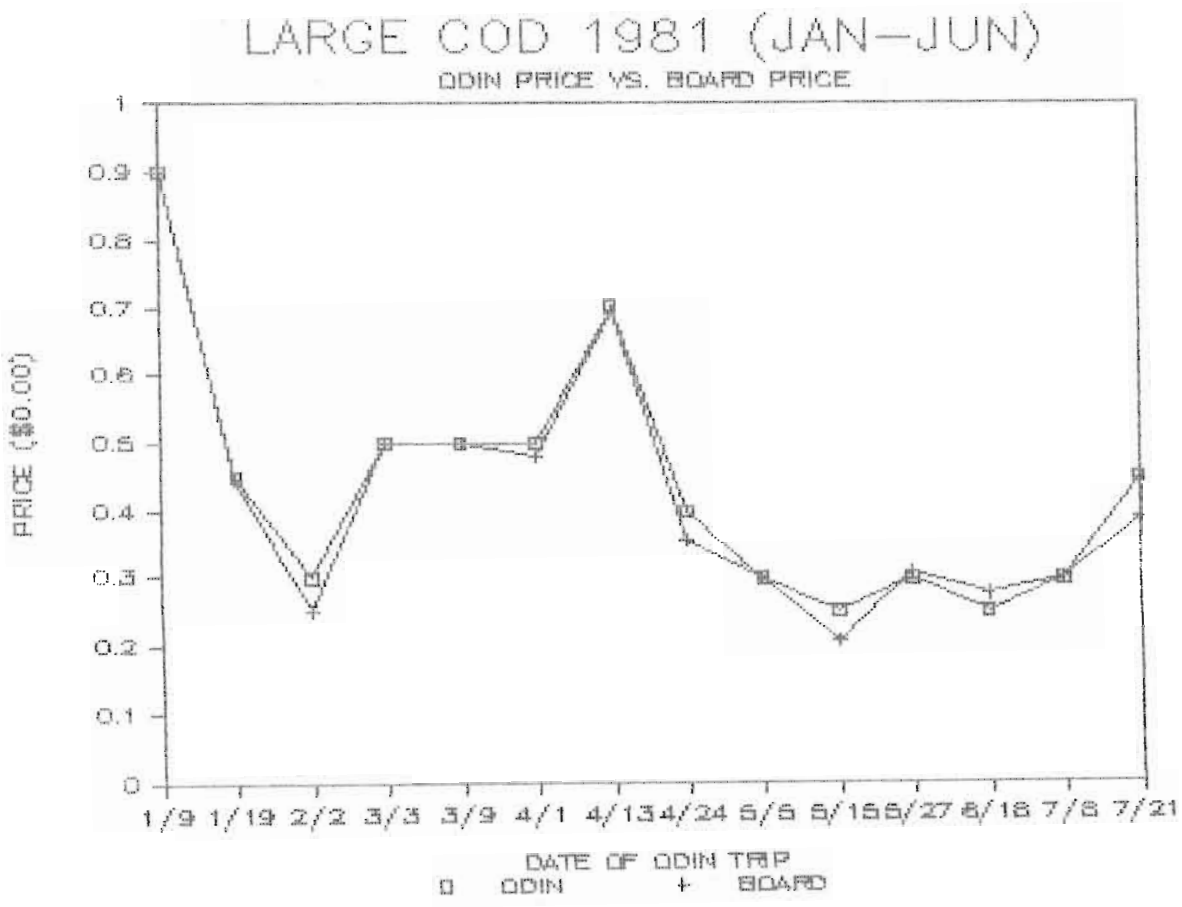
Another factor influencing buyer demand for the ODIN was the reputation the boat had by virtue of participating in the project. Retail and foodservice customers who had heard of the project would contact their suppliers in New Bedford and request "ODIN fish".

This phenomenon will be discussed in Chapter 5, but is mentioned here to establish that there were a series of reasons for processors to bid on the ODIN's fish in addition to the actual portion of the trip that was bled and boxed.

ODIN PRICE COMPARED TO AVERAGE BOARD PRICE: 1981

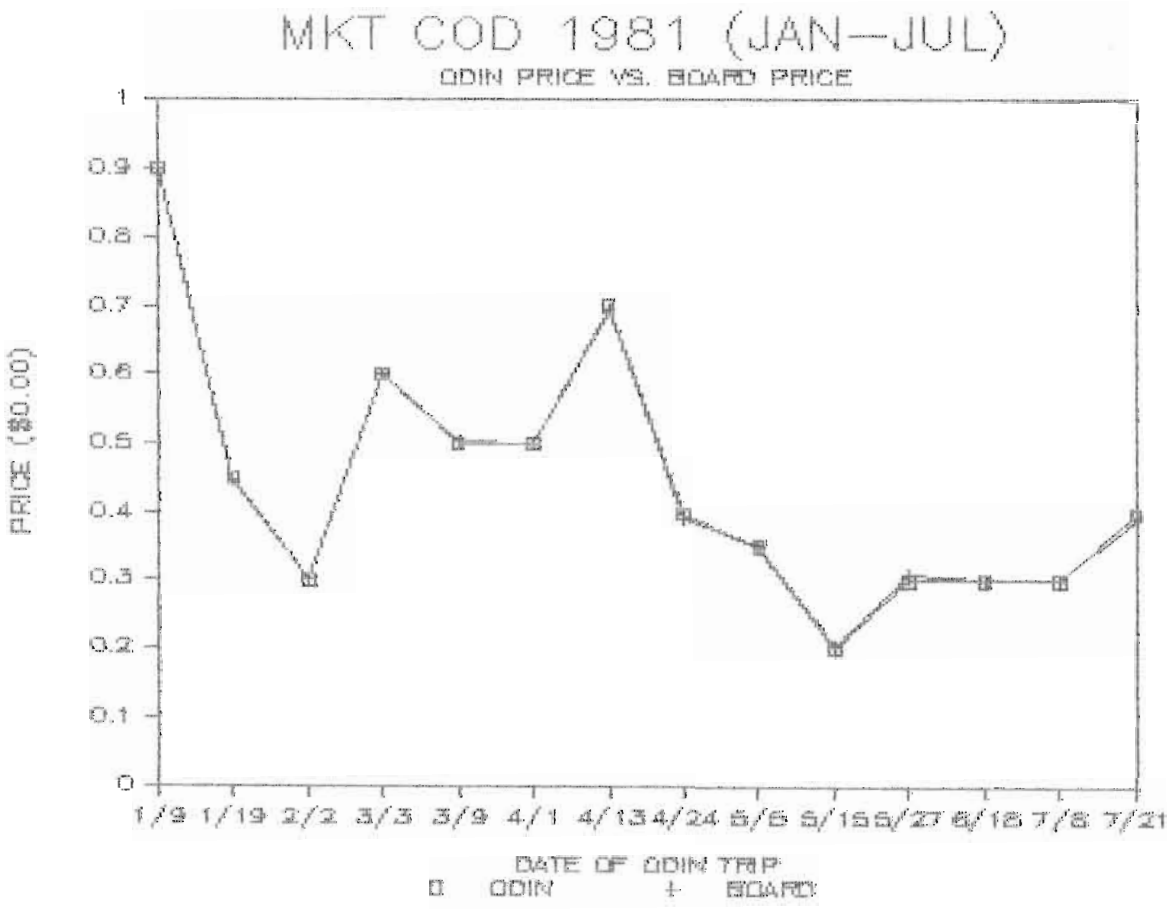
The following series of graphs (Figures 4 through 19) compare ODIN prices to average New Bedford prices for the period from January, 1981, until February 19, 1982. This represents the period of time prior to the ODIN becoming involved in the quality program. Figure 4 compares the ODIN price with the average price

Figure 4.



of large cod for the first seven months of 1981. Each date represents the day the ODIN sold its fish. Figure 5 shows the same data for market cod.

Figure 5.



The two graphs show an extremely close correlation between the ODIN price and the average New Bedford board price. The correlation between the market cod prices is almost exact. There is a slight variation in the prices for large cod.

Figure 6 averages the prices for large cod, market cod, and scrod. It shows there was virtually no difference between the price the ODIN received and the average New Bedford board price. On four dates there is a perceptable difference, but in two cases the Odin is slightly below the average price, and in two cases slightly above. The net effect is zero.

Figure 6.

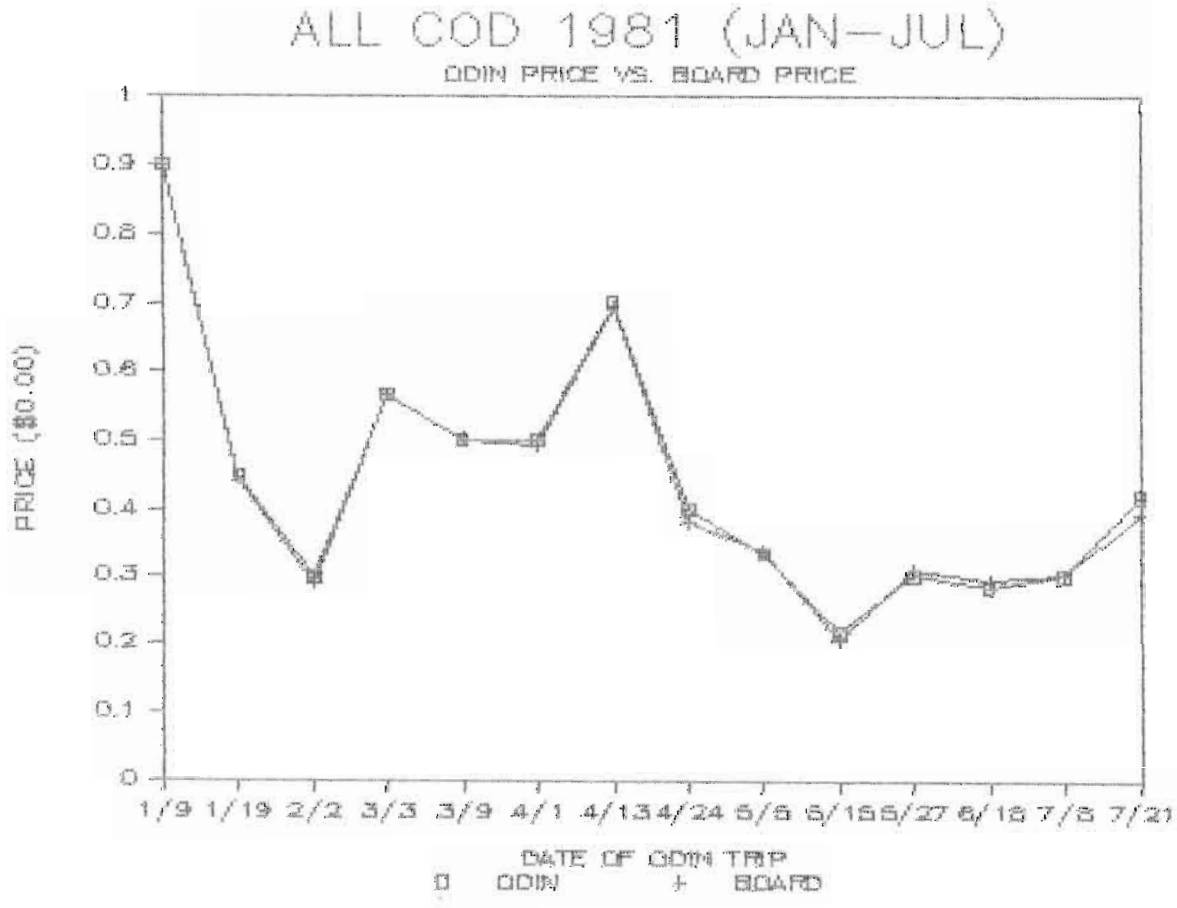


Figure 7 shows the total cod landings for the first seven months of 1981, compared with the ODIN's landings. The ODIN landings generally follow the total landings, exhibiting no major anomaly that would significantly impact on the price. On the days the ODIN landed the least amounts of cod, 3/9/81 and 5/27/81, the price was no different than the board average price. This suggests that there were few external factors affecting the ODIN's cod price during this period.

Figure 7.

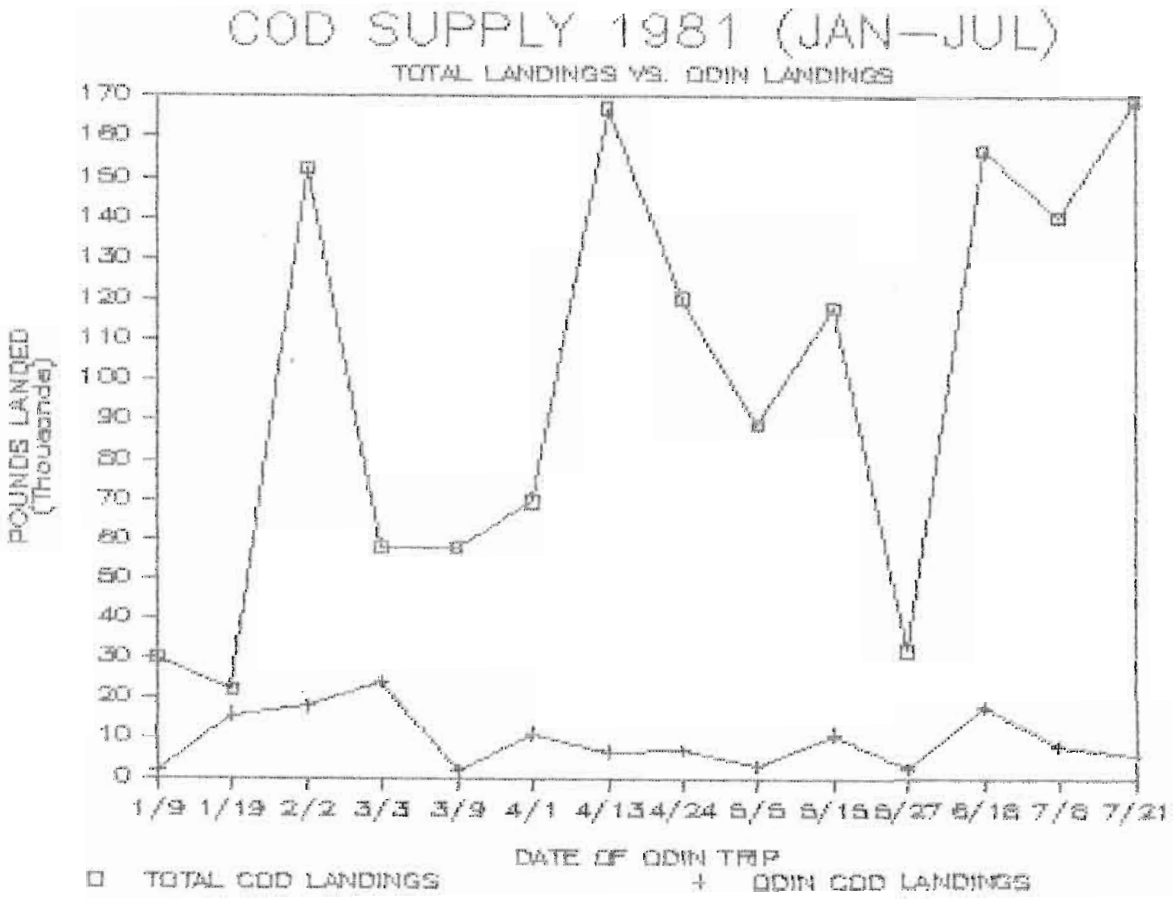


Figure 8.

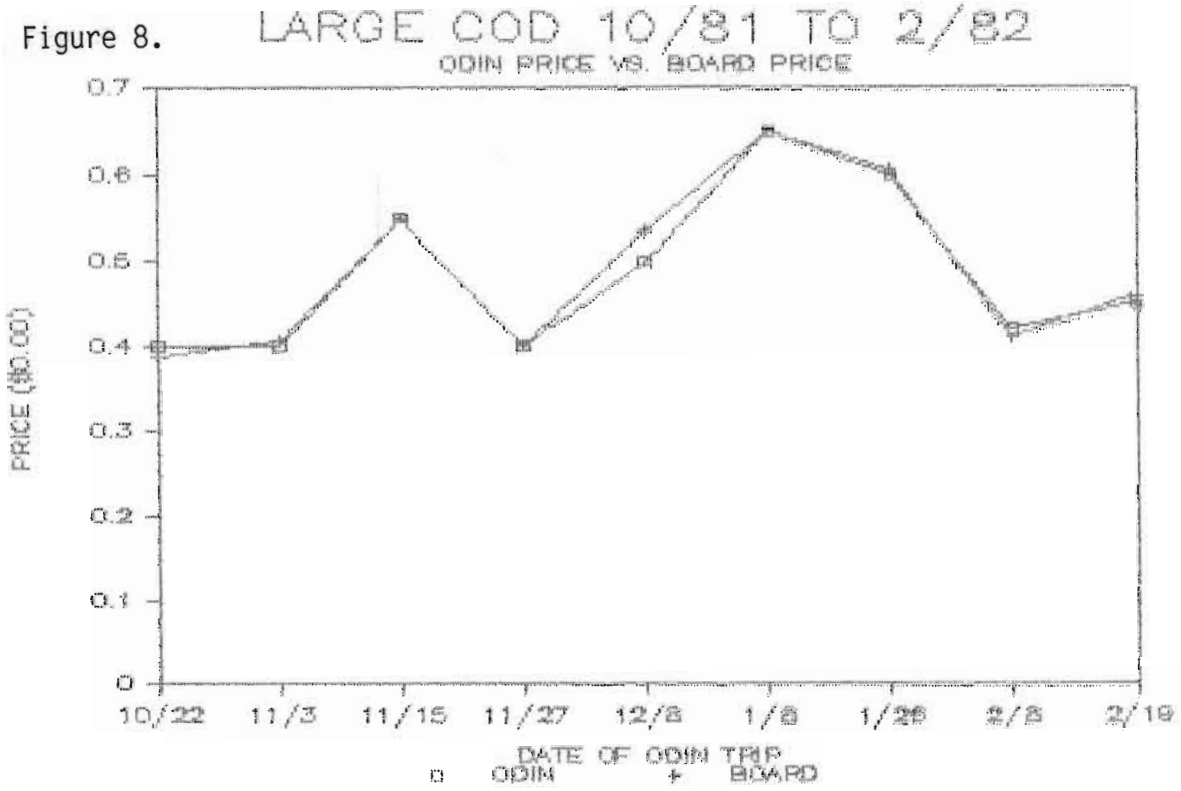
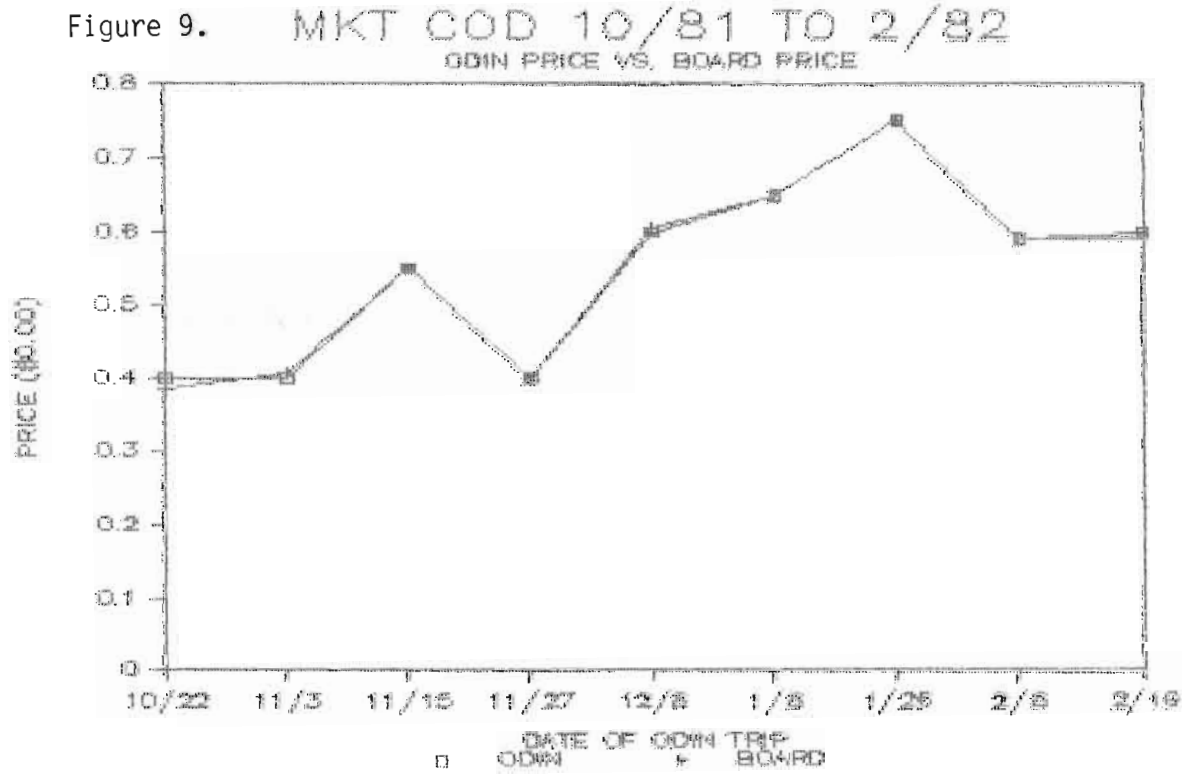


Figure 9.



After July, 1981, there is a three month gap in the data. That summer a bitter labor dispute between the New Bedford processors and the fish cutters union shut down most processing plants and caused the auction to cease operating. During the strike, most New Bedford vessels kept fishing, but they landed their catches outside of New Bedford. Many New Bedford processors set up satellite processing facilities during the strike. The strike had a profound impact on the port, providing an opportunity for many new processing companies to spring up. In the two years following the strike, the number of buyers authorized to bid on the New Bedford Auction grew from 13 to 27. (19) The strike collapsed in the fall of 1981, and the auction began operating. It took several weeks after the auction re-opened before volume grew to normal levels.

The second series of graphs on cod (Figures 8 - 11, on pp. 60 and 61) cover the period from October 1981 through February, 1982. They show that the basic relationship between the ODIN prices and the average board prices that prevailed in the first half of the year continued during the second half of the year. Large cod, market cod, and the average cod price all show virtually no

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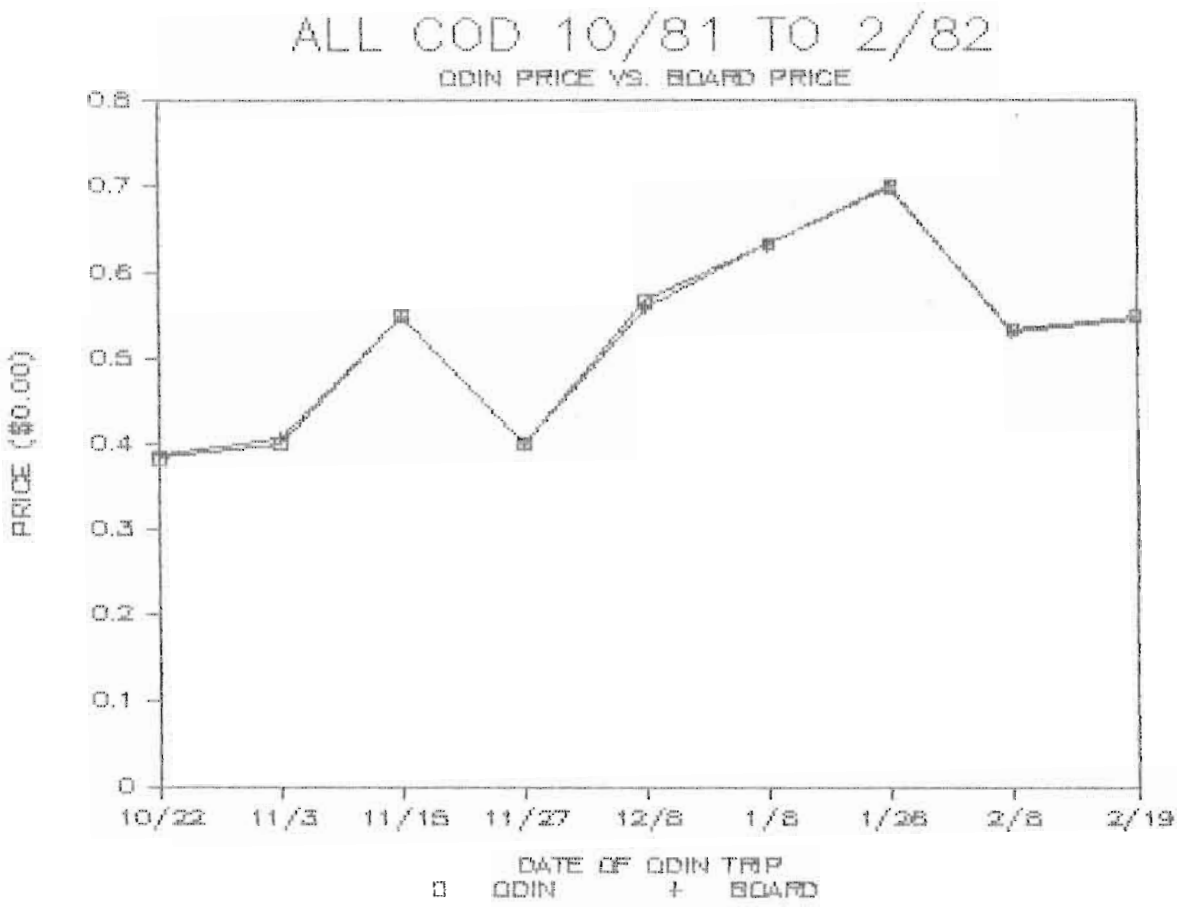
(19) Sackton, "New England Ports See Competition" Seafood Business Report, Vol. 3, No. 3, July 1984, p. 20.

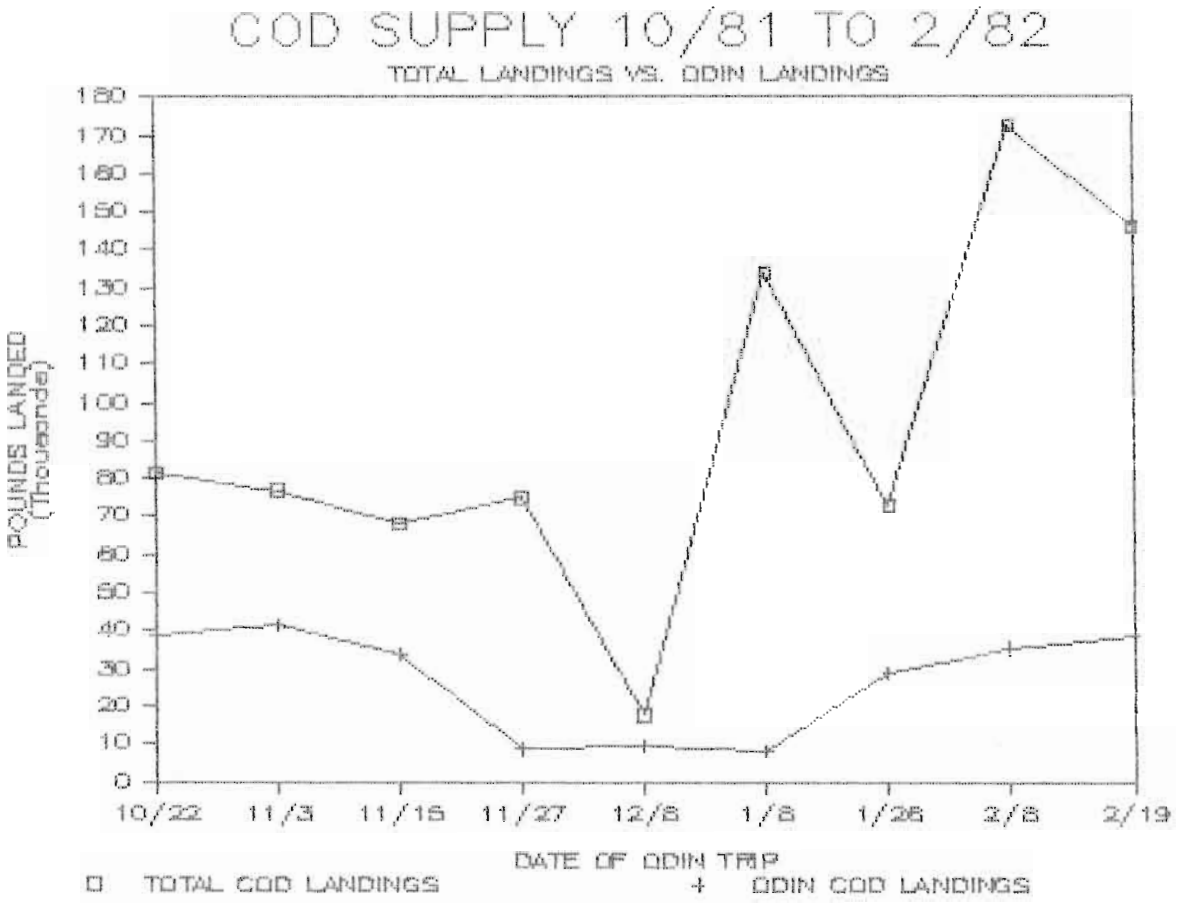
differences between the ODIN price and the average New Bedford Board Price.

Figure 10.



Again, the landings of cod (Figure 11) show no anomaly during this period that would effect the ODIN's price.

Figure 11.



The basic similarity between the ODIN price and the average board price is also confirmed by the haddock prices during this period. Haddock (Figures 12 - 15) shows a very close correlation between the ODIN price and the average board price.

Figure 12.

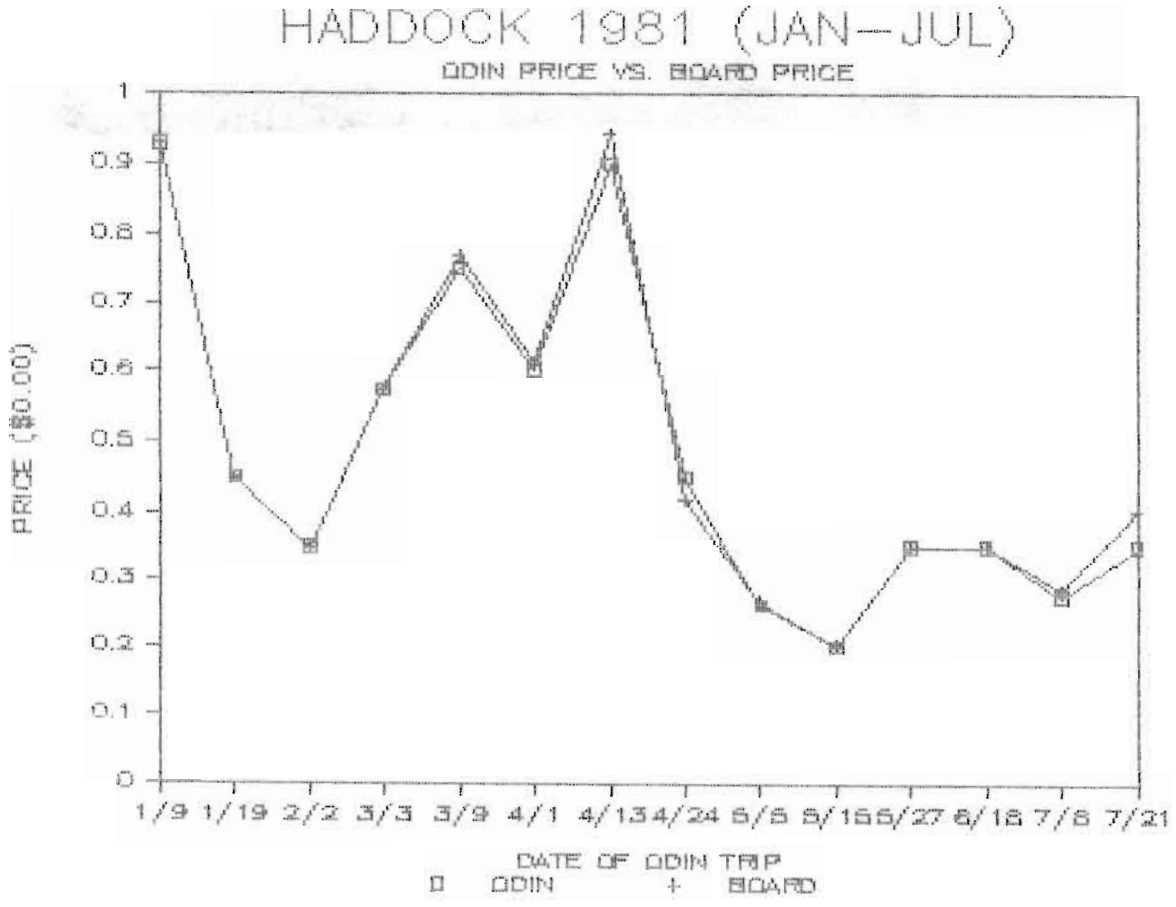
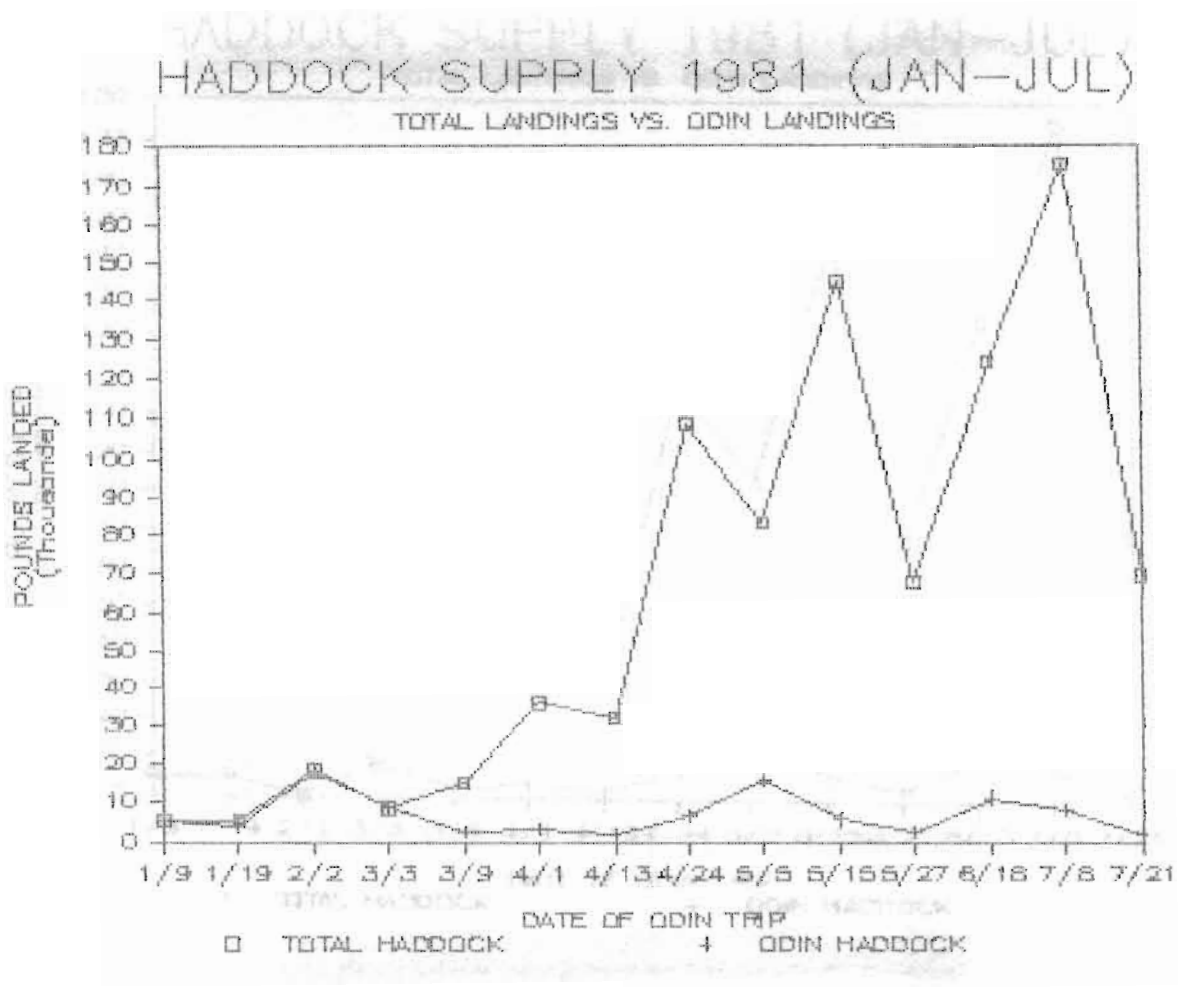


Figure 13



The landings figures for haddock during this period, (Figure 13), also demonstrate that no special circumstances existed that had distorted the price the ODIN received for haddock.

The same relationships are illustrated in figures 14 and 15.

Figure 14

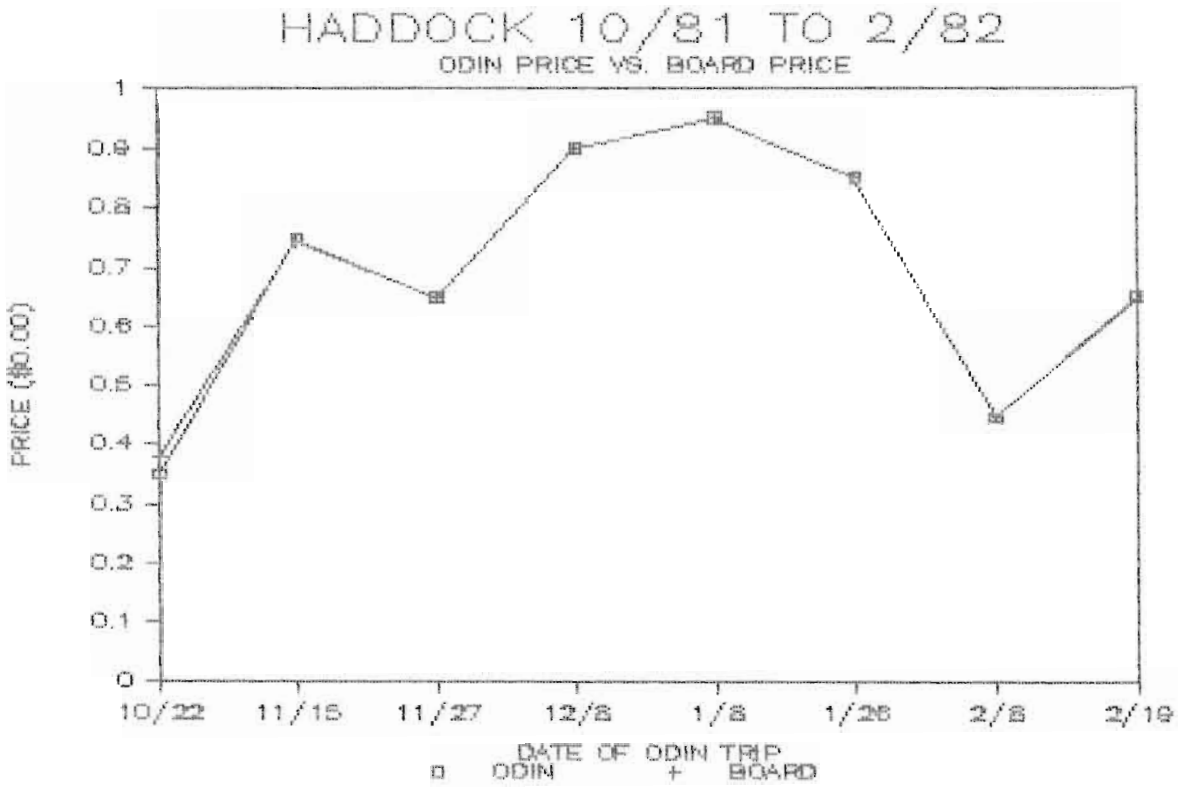
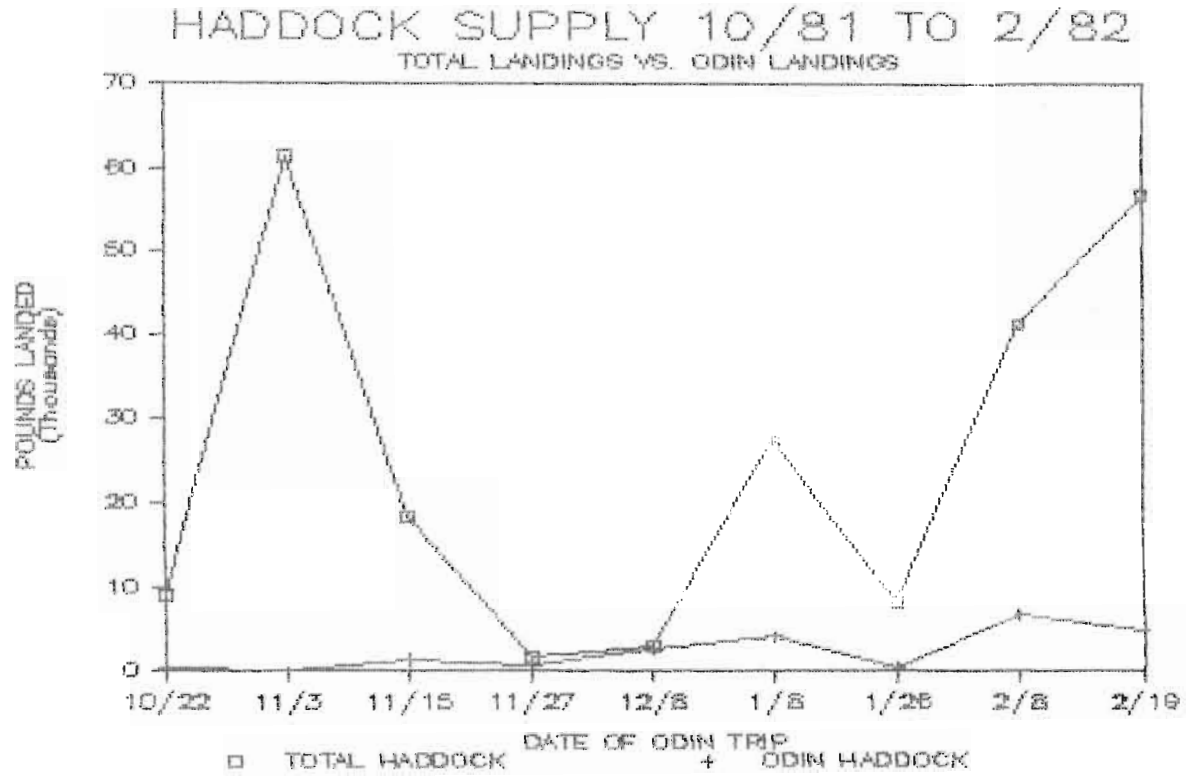
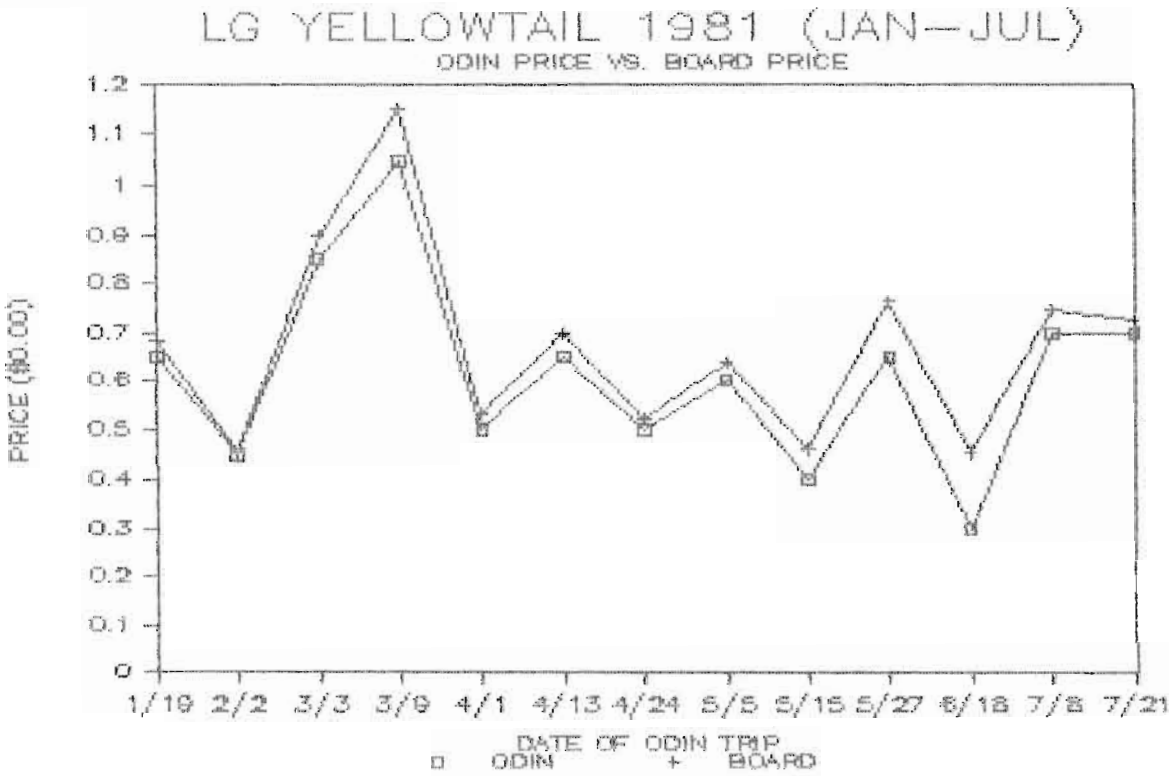


Figure 15



The data for large yellowtail, shown in Figures 16-19, illustrate two interesting facts. First, the ODIN is consistently under the average board price for yellowtail by 3 to 5 cents per trip (Figure 16). This relationship persists throughout the year except for two trips, in the fall of 1981 (Figure 17, p. 67). The reason the ODIN is receiving a slightly lower price for yellowtail is that the ODIN is not primarily a yellowtail boat. The price relationship indicates that the dealers who bid on and bought the ODIN's catch generally bought because of the cod and haddock on board.

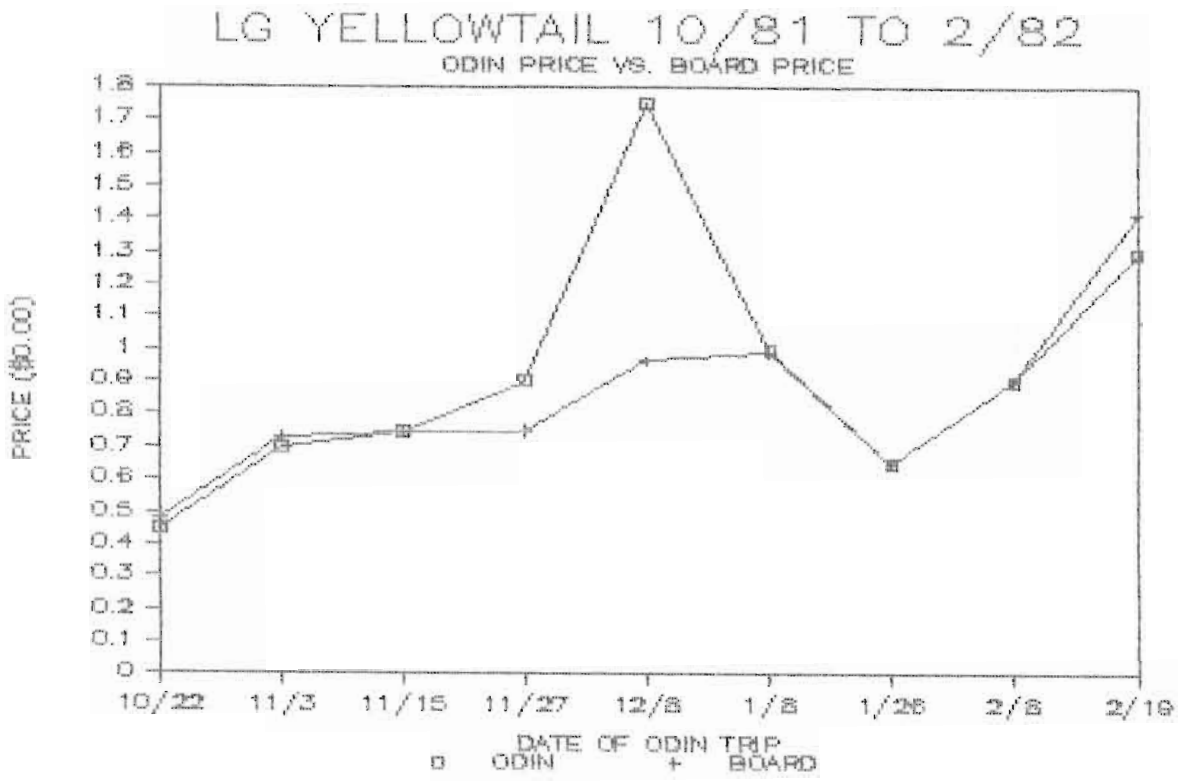
Figure 16.



However, on November 27 and December 8, 1981, the ODIN received a large price premium for yellowtail. What happened? These prices illustrate the bidding anomalies that can occur in the New Bedford auction. On November 27, 1981, the ODIN only hailed 200 lbs. of yellowtail. This tiny amount was bought for 90 cents on a day when the average price was around 71 cents.

On December 8, 1981, out of 20,000 lbs. of cod and haddock, the ODIN accounted for 15,000. In fact, the ODIN was the only boat to land haddock at all that day in New Bedford, hailing 3000 lbs. The dealers, instead of bidding up the price of the 3000 lbs. of haddock, chose to bid for the boat

Figure 17.



by concentrating on the price of yellowtails. The ODIN hailed 1,500 lbs. of yellowtails that day. The price for those 1500 lbs. was bid up to $1.75. The rest of the yellowtails on the board were sold between 75 and 95 cents. This seems to be a clear case where the price differential represents an external factor in the bidding for the vessel. As a result, it is reasonable to conclude that the real relationship between the ODIN's yellowtail prices and the average yellowtail price on the board is that the ODIN's price is consistently lower.

Figures 18 and 19 show that the relationship of ODIN yellowtail landings to the total landings of yellowtail was consistent, and did not introduce anomalies into the price structure.

Figure 18.

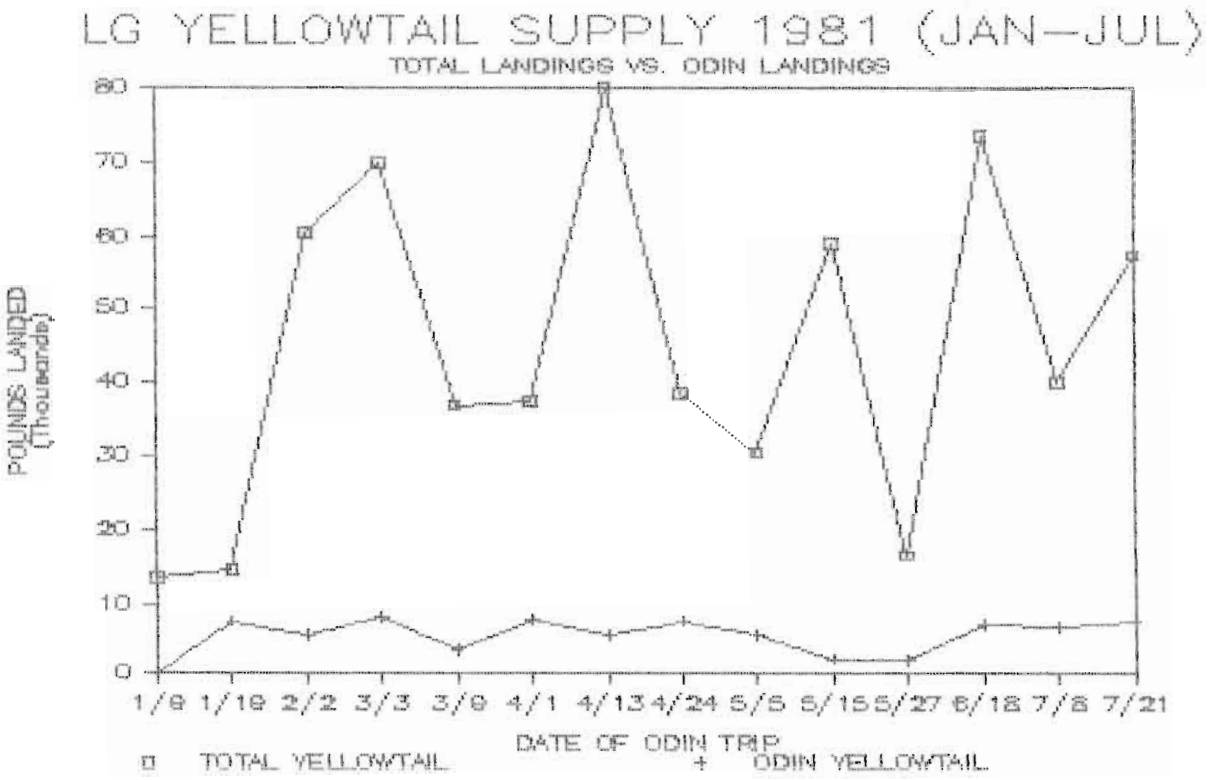
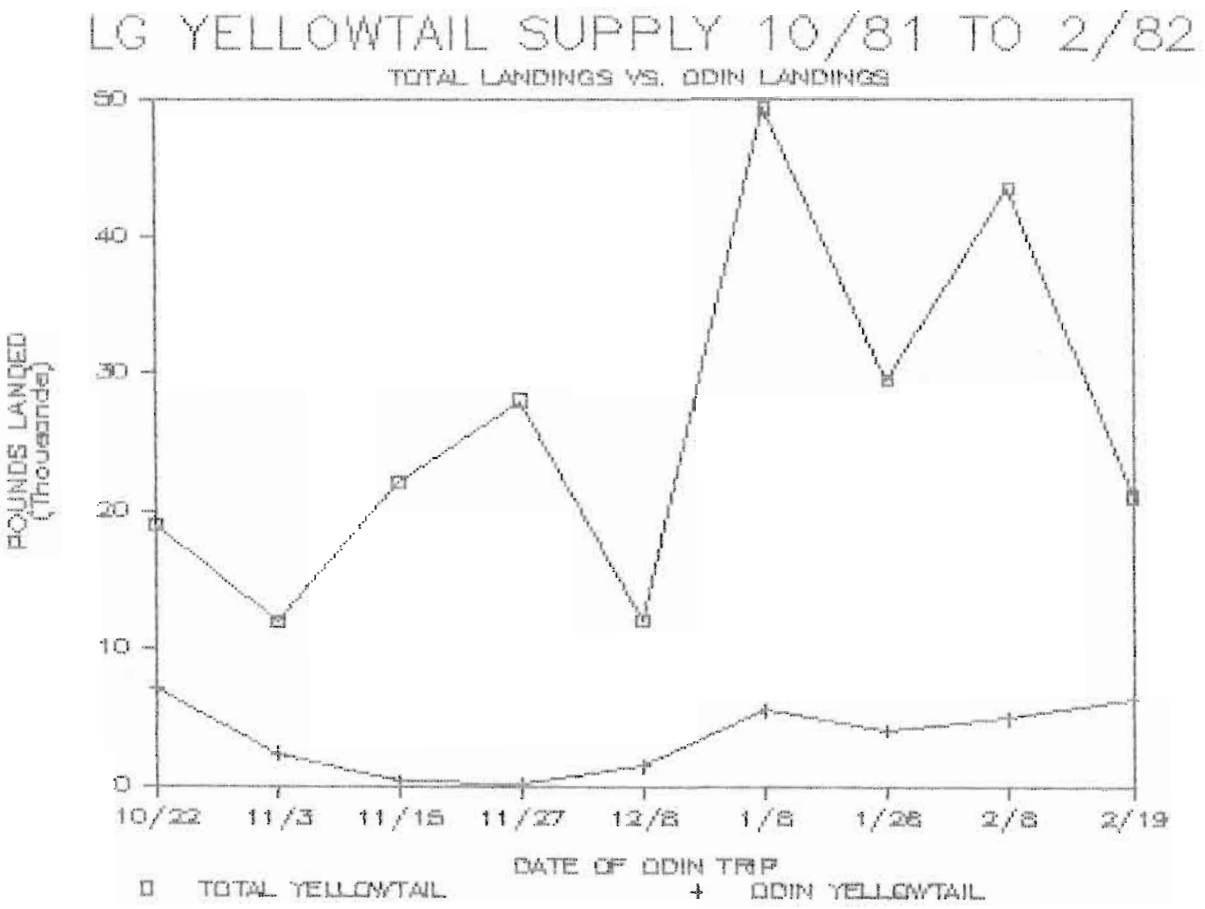


Figure 19.



ODIN PRICES COMPARED TO AVERAGE BOARD PRICES DURING THE PROJECT

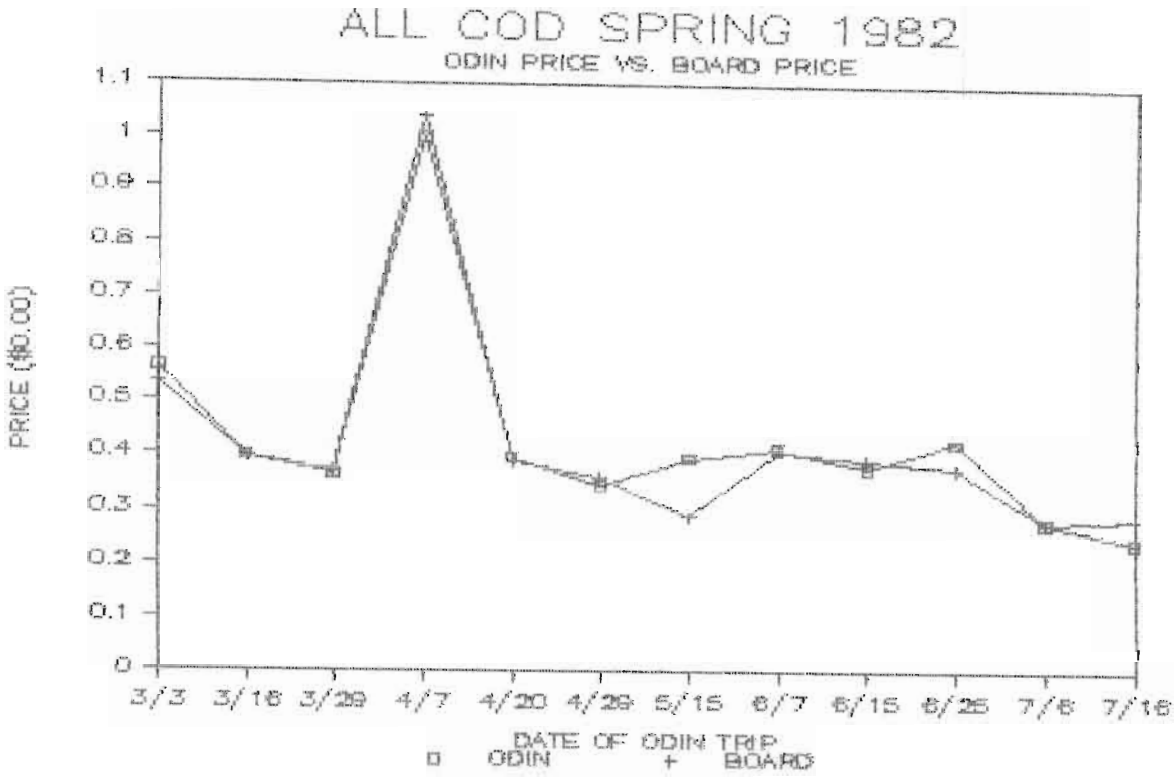
The first trip the ODIN made as part of the New England Fisheries Development Foundation's quality project was on March 3, 1982. Between March and May of 1982, the ODIN increased the number of boxes carried on board each trip. After starting with only six boxes, by the end of May, the ODIN carried between 100 and 130 boxes per trip, and landed

25% of her trip boxed and bled. During the first few months of the project, samples of ODIN fish were taken to almost all the processors in New Bedford. Tests documenting the quality improvements were carried out. The objective of the project was to demonstrate to processors that superior quality fish produced by the ODIN was worth a price premium.

The ODIN's price in relation to the average New Bedford board price for cod, haddock, and yellowtail from March through July, 1982, are presented in the next series of graphs (Figures 20-27). This was the period when the project was getting underway. Comparisons between the ODIN price and the average board price will be made on a species by species basis.

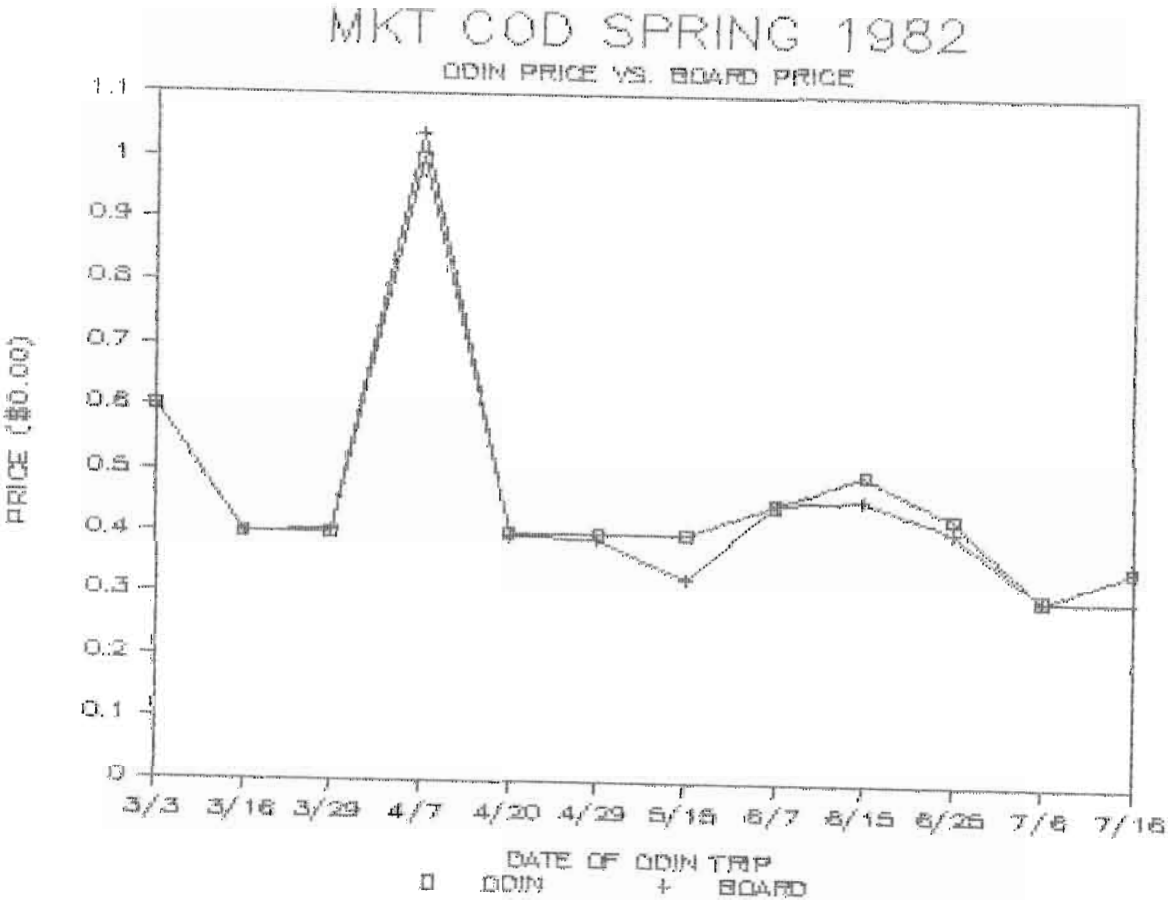
Cod:

Figure 20.



Both large cod and market cod continue to exhibit the same close correlation between the ODIN price and the average price through the auction of April 20, 1982. After that date, the ODIN's cod price rises in relation to the board price, as shown in Figure 20. For market cod, in the seven trips after April 20, 1982, the ODIN shows above average prices for six trips. (Figure 21)

Figure 21.



This pattern is not repeated in large cod (Figure 22), but when the prices are averaged for all cod species, the ODIN makes significant gains over the board price on two occasions, and is slightly below the board price on one occasion.

Figure 22.

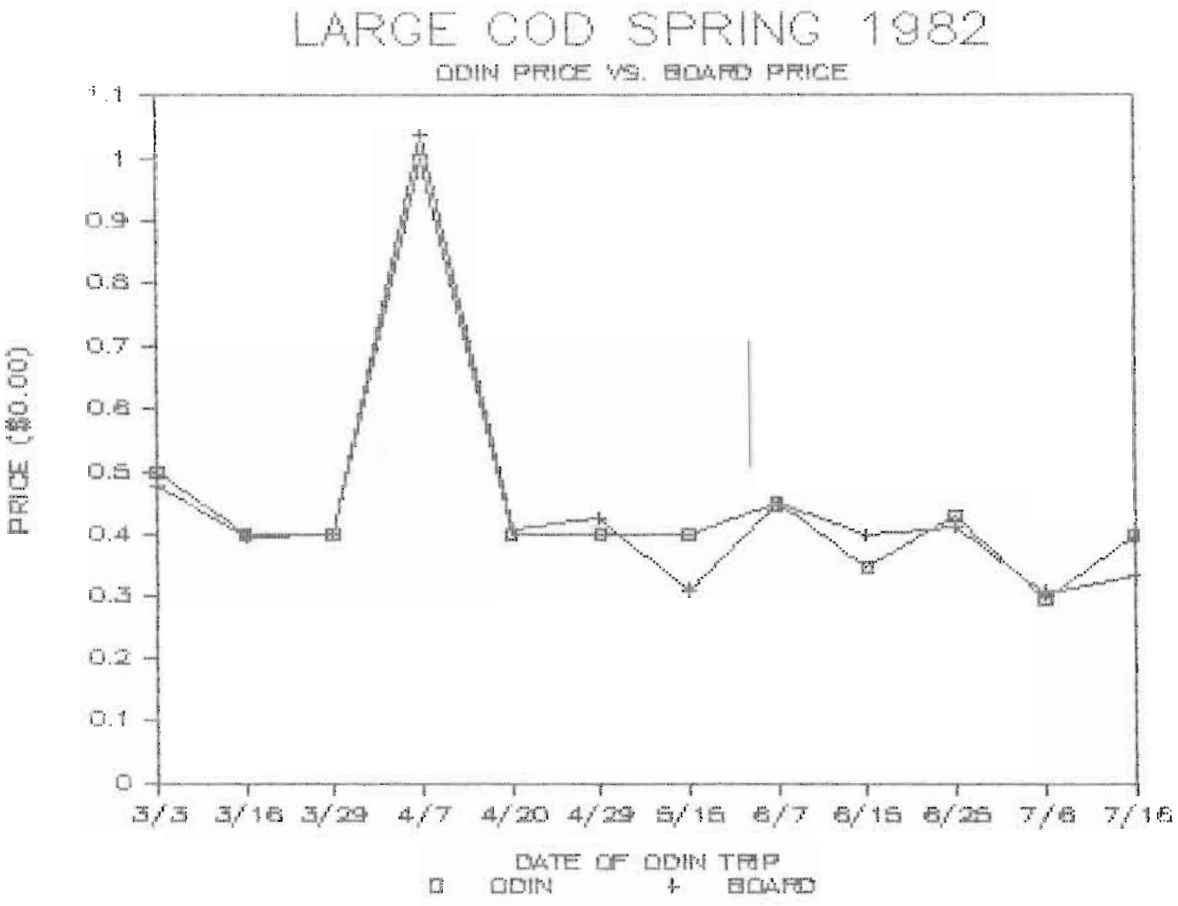


Figure 23

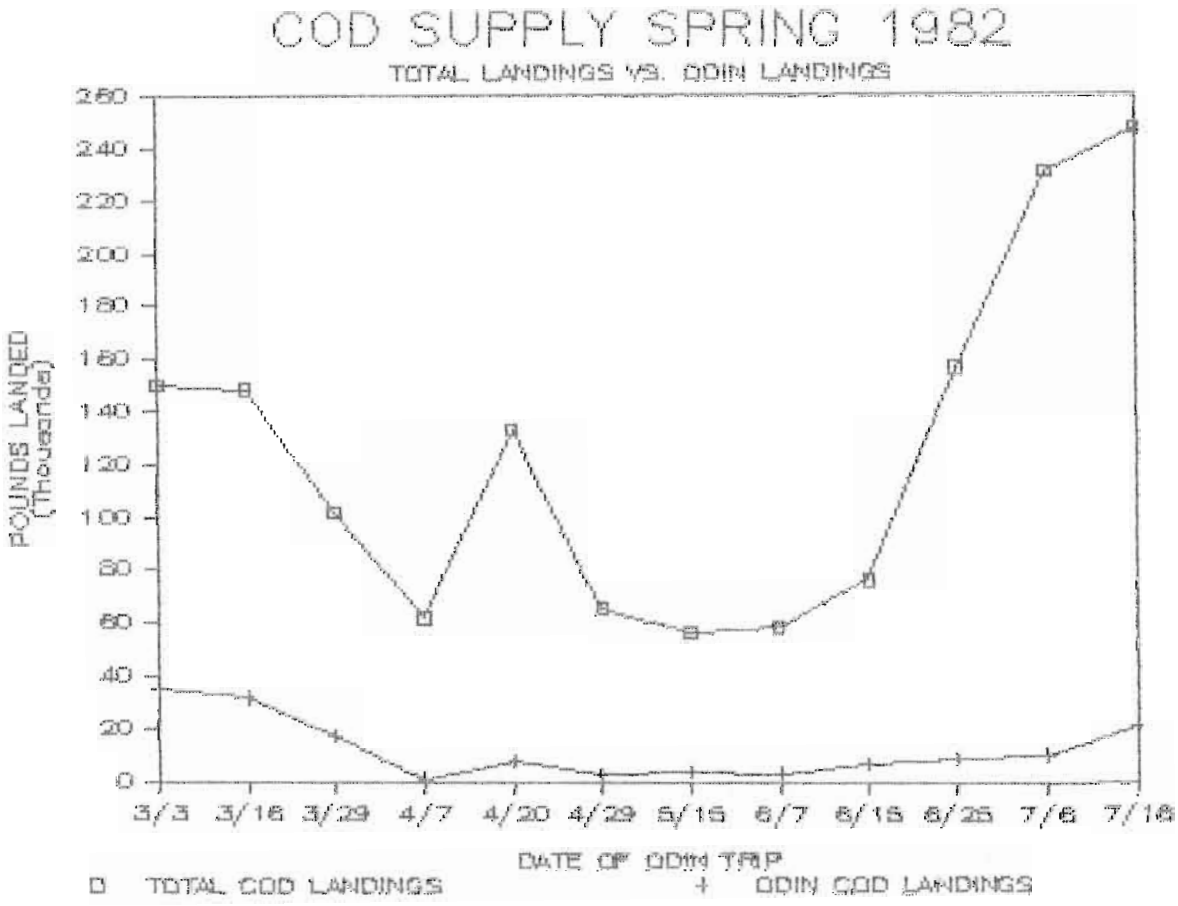


Figure 23 shows the supply relationship of the ODIN's landings of cod to the total landings of cod during this period. No distortions in the price differential were due to unusual supply factors.

Haddock:

The ODIN price does not appear to vary significantly from the average haddock board price during this period (Figure 24). However, comparing this period with the same period in 1981 shows that there was more variation. Figure 25 (p. 75) shows that supply factors were not important for the purposes of price comparisons.

Figure 24.

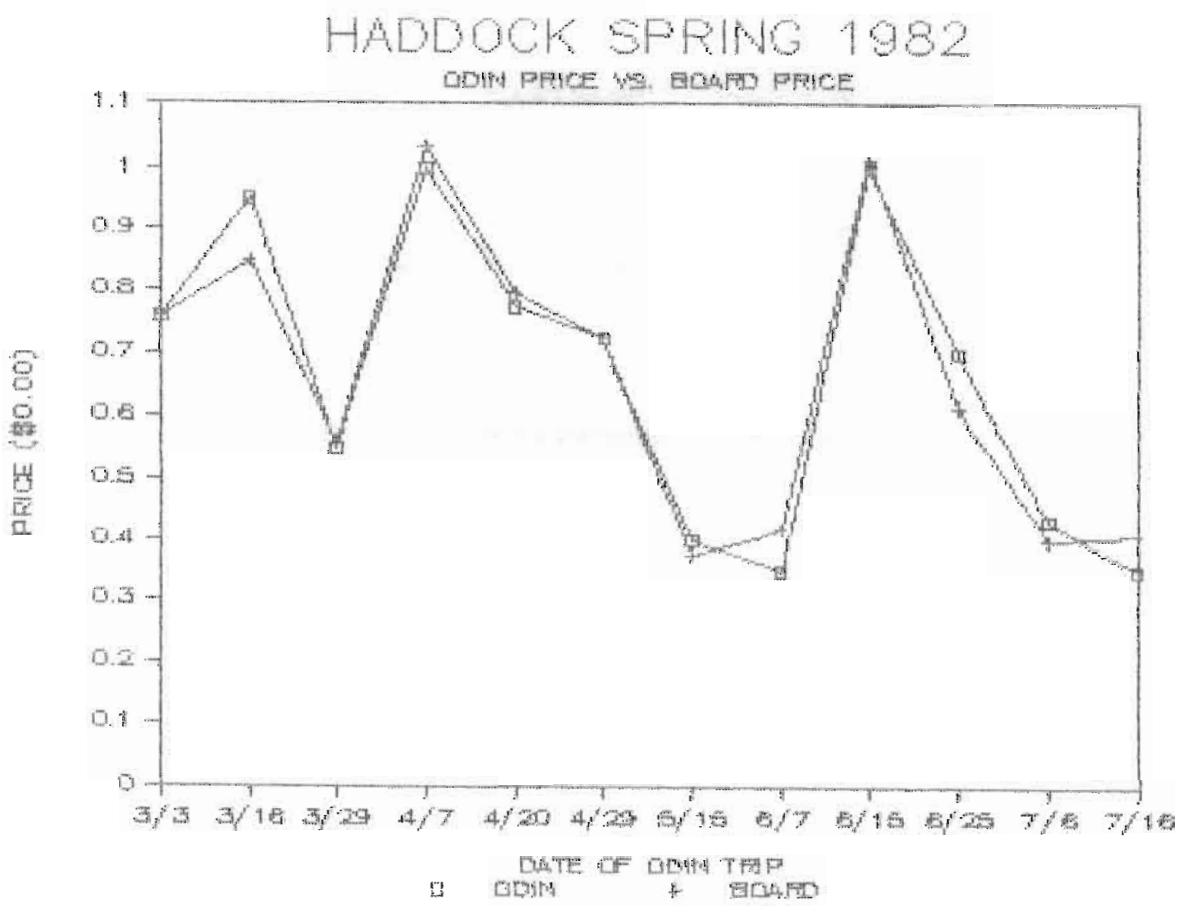
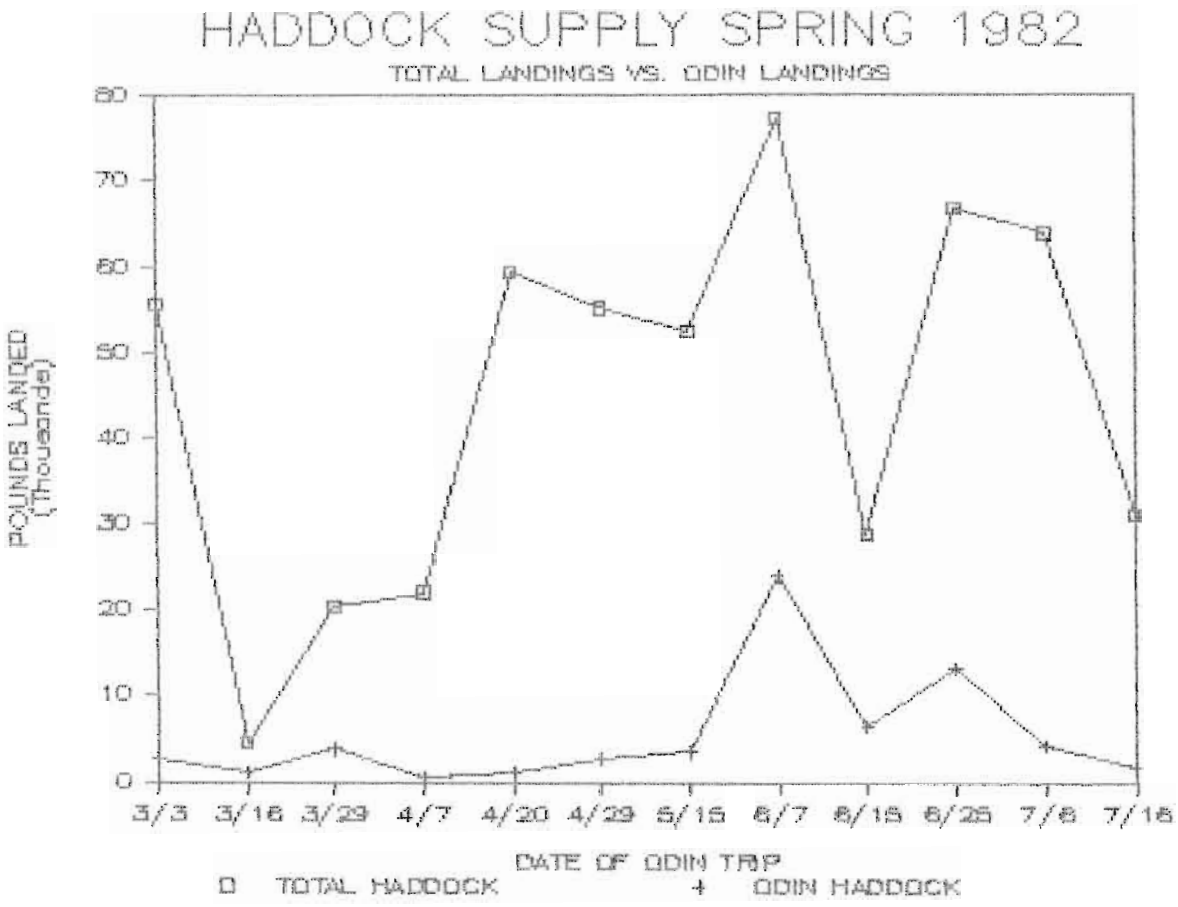


Figure 25



Yellowtail:

The ODIN received the average price for yellowtail during this period, and in some cases, achieved slightly more than the average. This is a definite contrast with the same period the year before, when the ODIN was consistently below the average yellowtail price (see Figure 16, p. 66). Figure 26 (p. 76) shows that on two occasions, March 3

and March 16, 1982, it appears the ODIN received a significantly higher price for yellowtail because bidding concentrated on that species. On both dates, the ODIN received the highest price on the board for yellowtail.

Figure 26

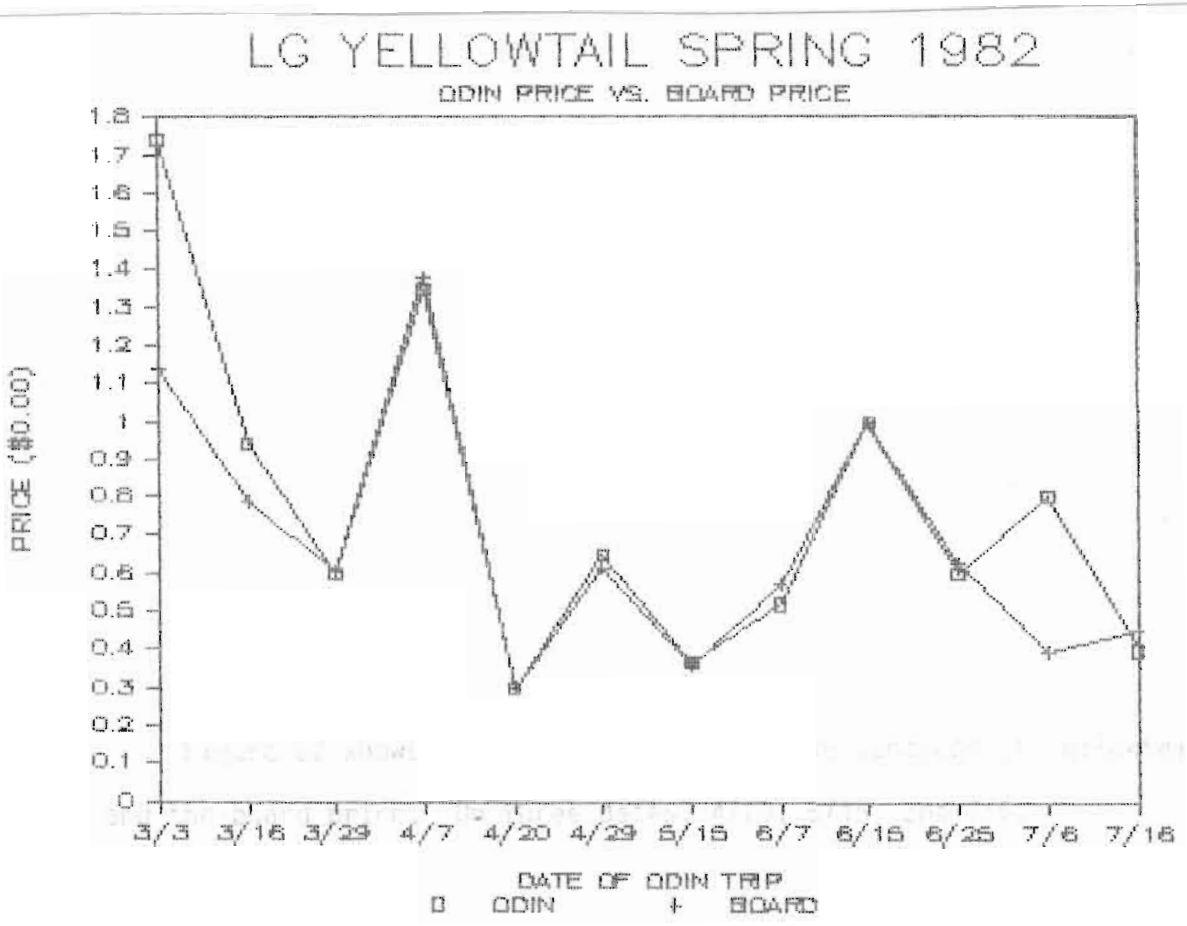
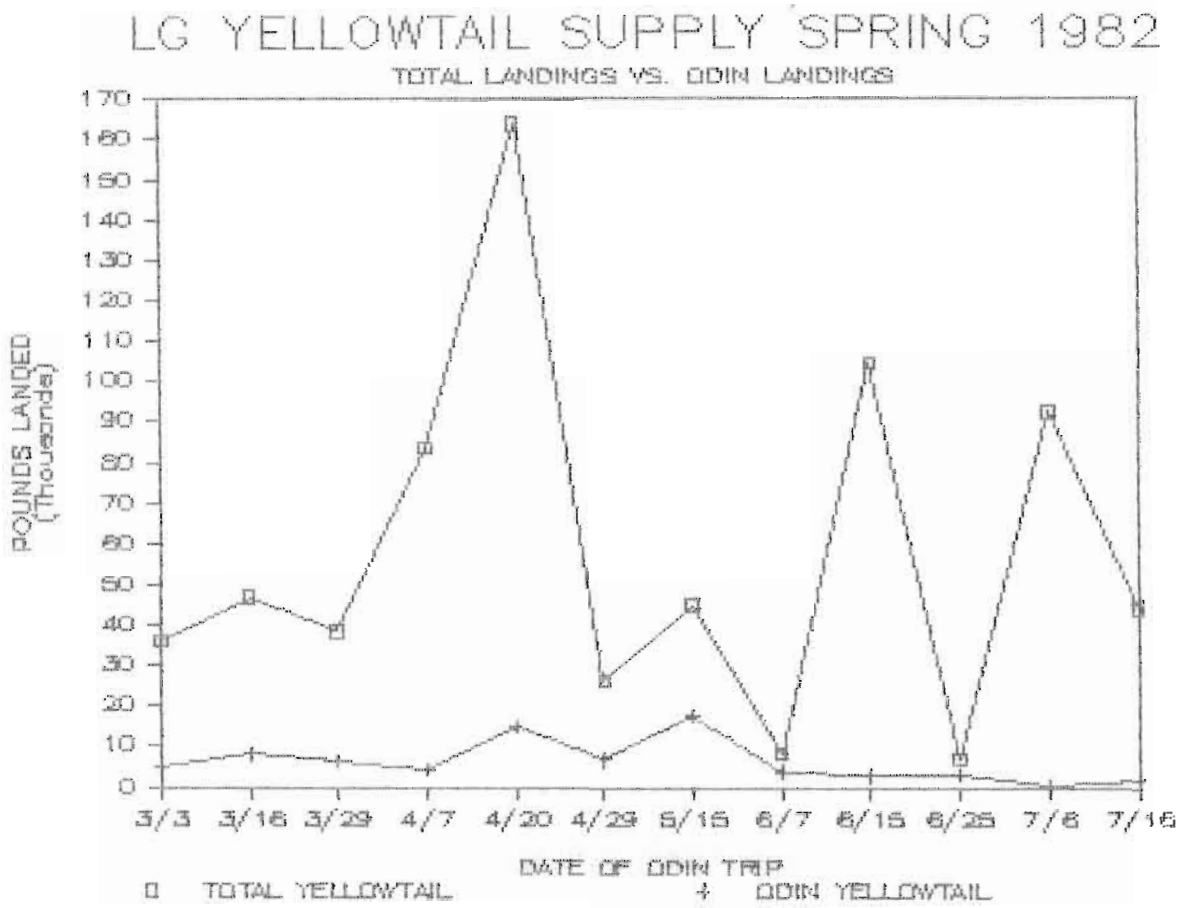


Figure 27 shows a correlation between the landings of yellowtail and the board price. On three dates, 4/20, 5/15, and 7/6,

higher landings led to lower board prices.

Figure 27



Overall, the data from this period are inconclusive. There seem to be some indications that the ODIN may be receiving a price premium on certain occasions, but it is not consistent.

In fact, to see a significant price differential at this time would be suprising. The project had not yet developed a consistent

procedure for taking out the boxed fish, for dealing with the lumpers, and for shipping the fish to the buyers who had agreed to pay a premium of 5 cents. New arrangements practically had to be made from week to week. Because the ODIN unloaded at so many different plants, no routine could be established very quickly. At the same time, the results of the tests on boxed fish were circulated among a large number of processors, and there was a general awareness that the ODIN was involved in an effort to upgrade quality.

The next series of graphs, Figures 28 - 35, cover the period when the ODIN consistently landed bled and boxed fish, from August 6, 1982 to December 21, 1982. Overall, the data show the ODIN received a clear price premium above the average New Bedford auction price. The relationship of the ODIN's price to the average New Bedford board price is significantly higher during this period than during the corresponding period of 1981.

Figure 28 shows that the ODIN received a higher than average price for large cod nine out of thirteen trips (p. 79). Figure 29, also shows the same relationship for market cod, with the ODIN receiving a higher than average price ten trips out of thirteen (p. 79).

Figure 28

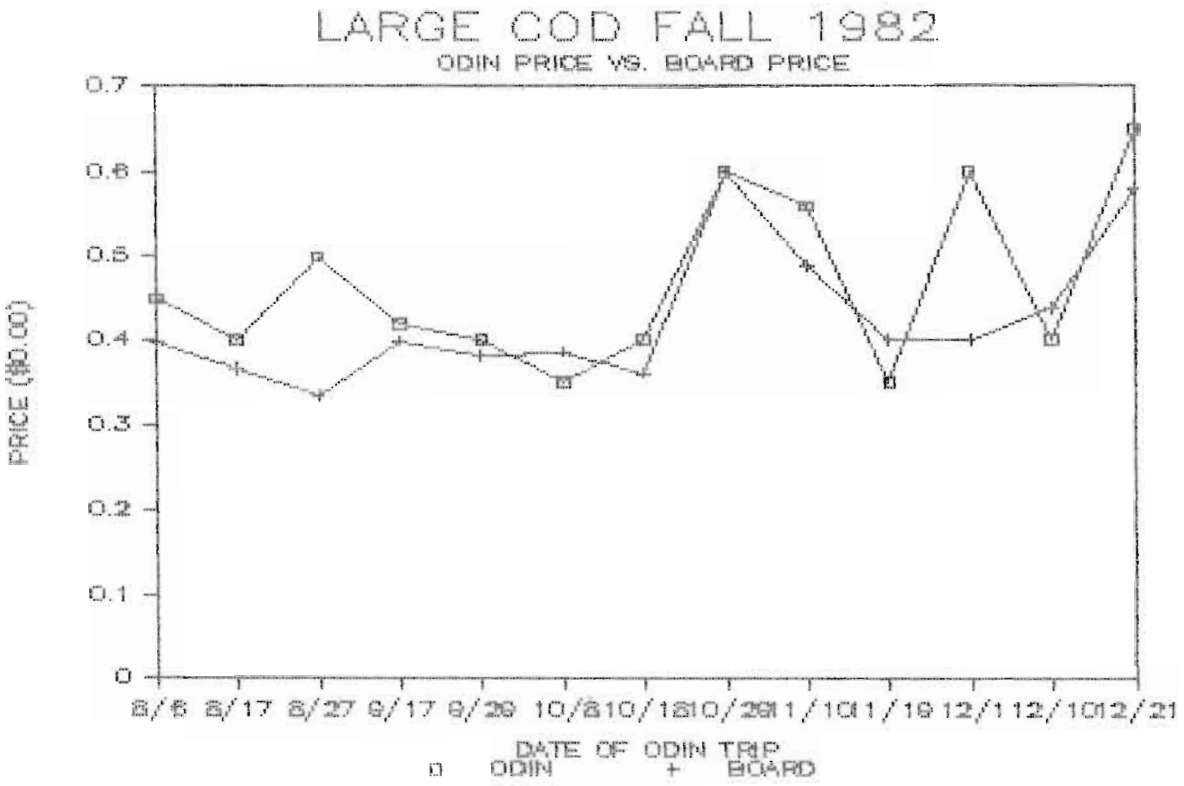


Figure 29

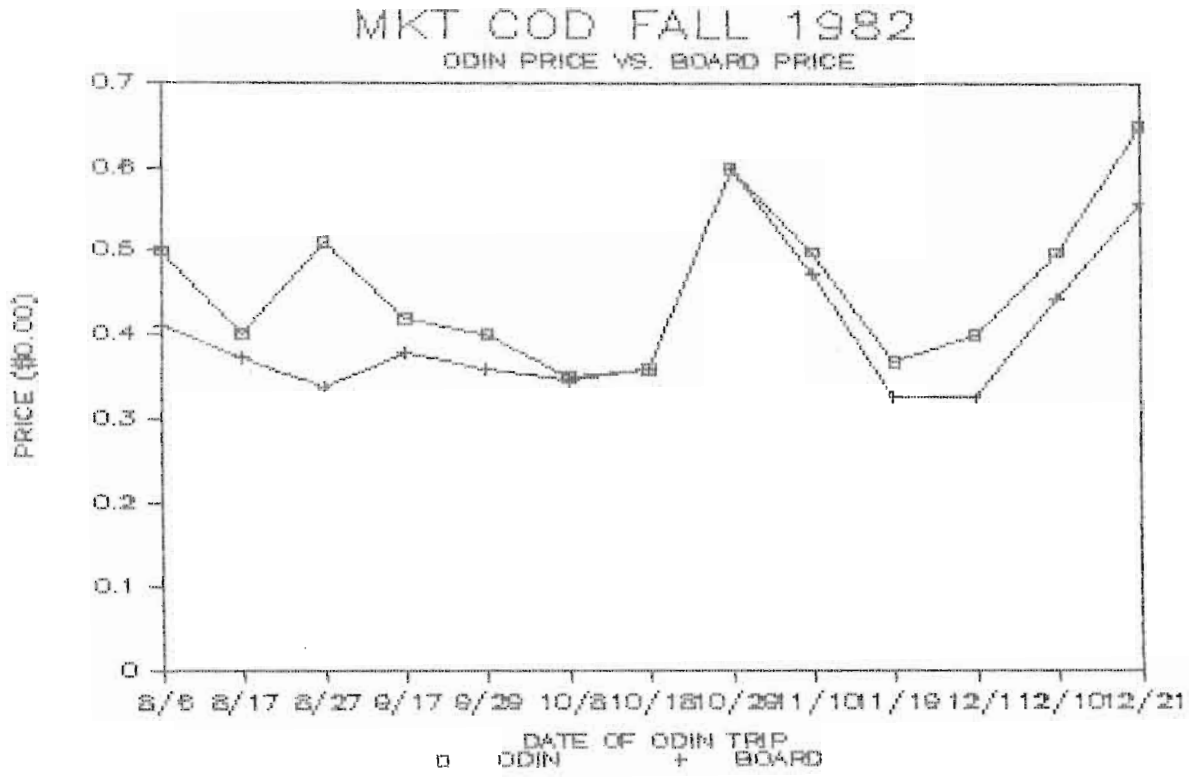
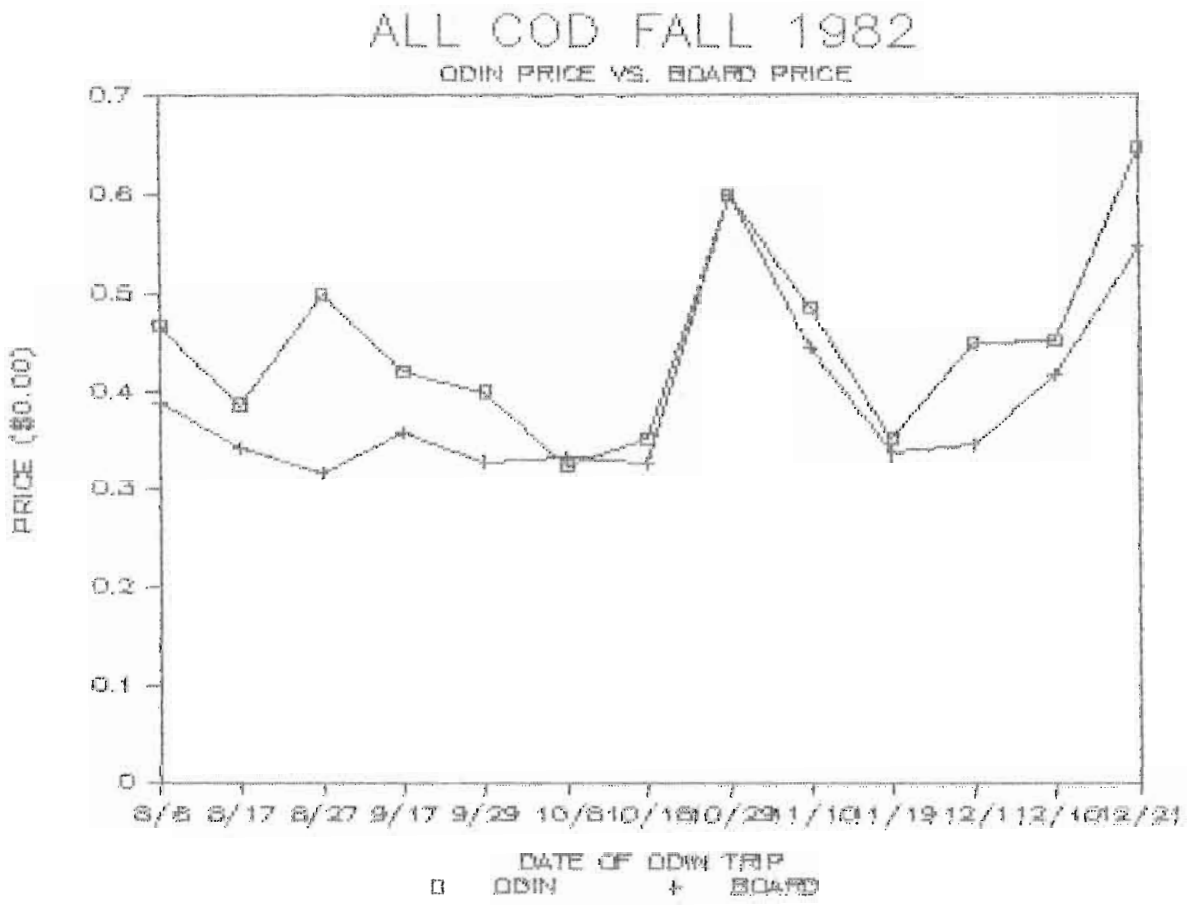


Figure 30, which averages all cod prices, including scrod, shows the ODIN received a consistent premium on cod.

Figure 30



The comparison of ODIN haddock prices with average New Bedford haddock prices is not very meaningful during this period because very little haddock was being landed. This is illustrated in Figure 31, (p. 81) which shows that with one exception, total haddock landings during this period were less than 12,000 lbs. per day. The ODIN

landed haddock on only four out of thirteen trips during this period. The amount of the decline in haddock landings can be seen by comparing the landings shown in Figure 31 with the landings of haddock during the same period in 1981 (Fig. 15). A second reason the ODIN landed less haddock in the fall of 1982 was because the two processors who were buying most of the boxed fish, M.F. Foley Inc., and Parisi Seafoods, Inc., requested that Gabe land as much market cod as possible.

Figure 31

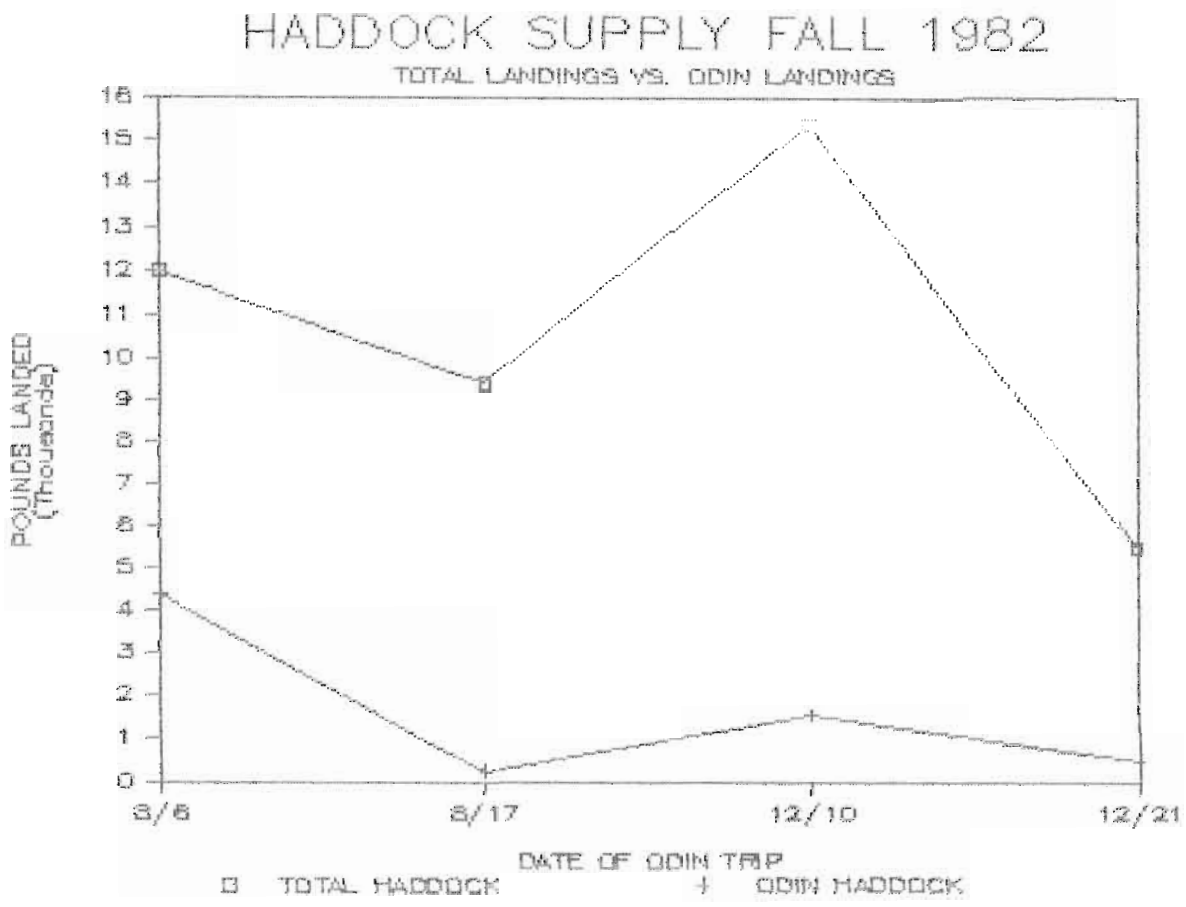
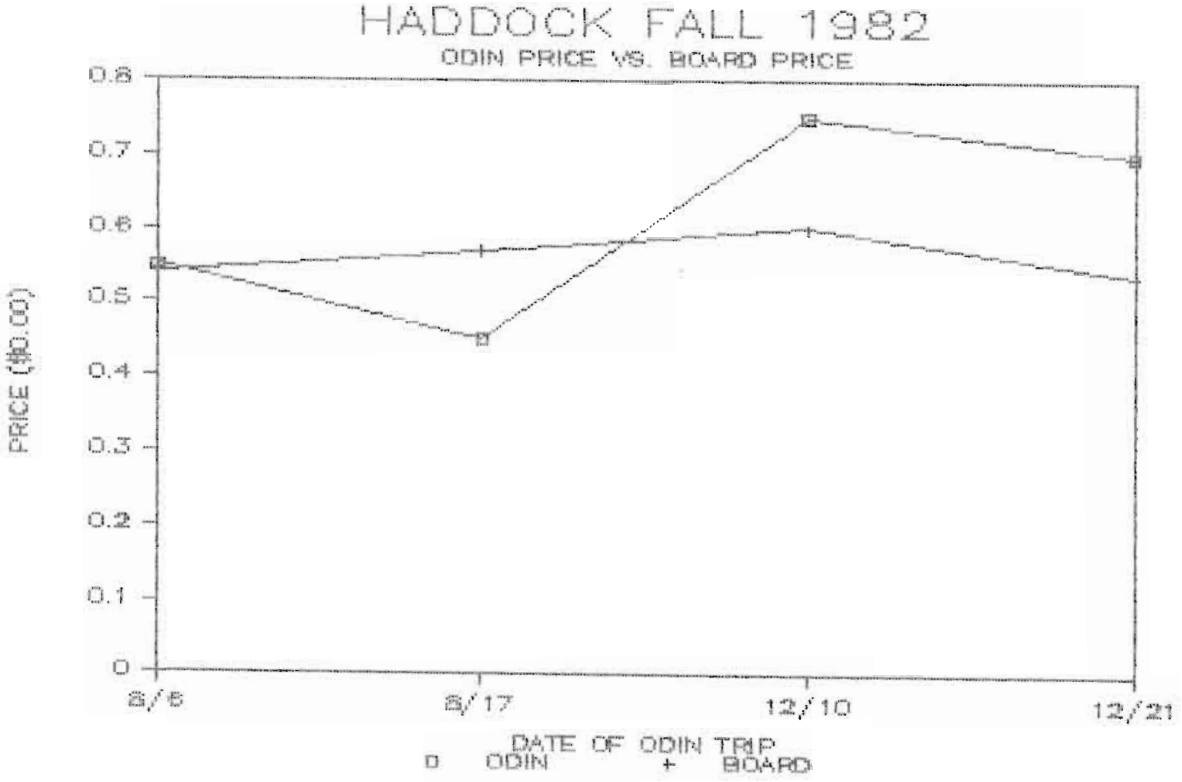


Figure 32 shows the price relationship between the ODIN's haddock and haddock sold on the board on the four dates the ODIN landed haddock during this period.

Figure 32



In the same manner, yellowtail is not useful for judging price differentials during this time because the ODIN landed yellowtail on only five out of thirteen trips. When Gabe did hail yellowtail

on the board, he hailed only miniscule amounts, ranging from 100 to 900 lbs. The ODIN landed less yellowtail during this period also because Captain Skaar was fishing primarily for cod. Figures 33 and 34 show the yellowtail price comparisons and supply data.

Figure 33

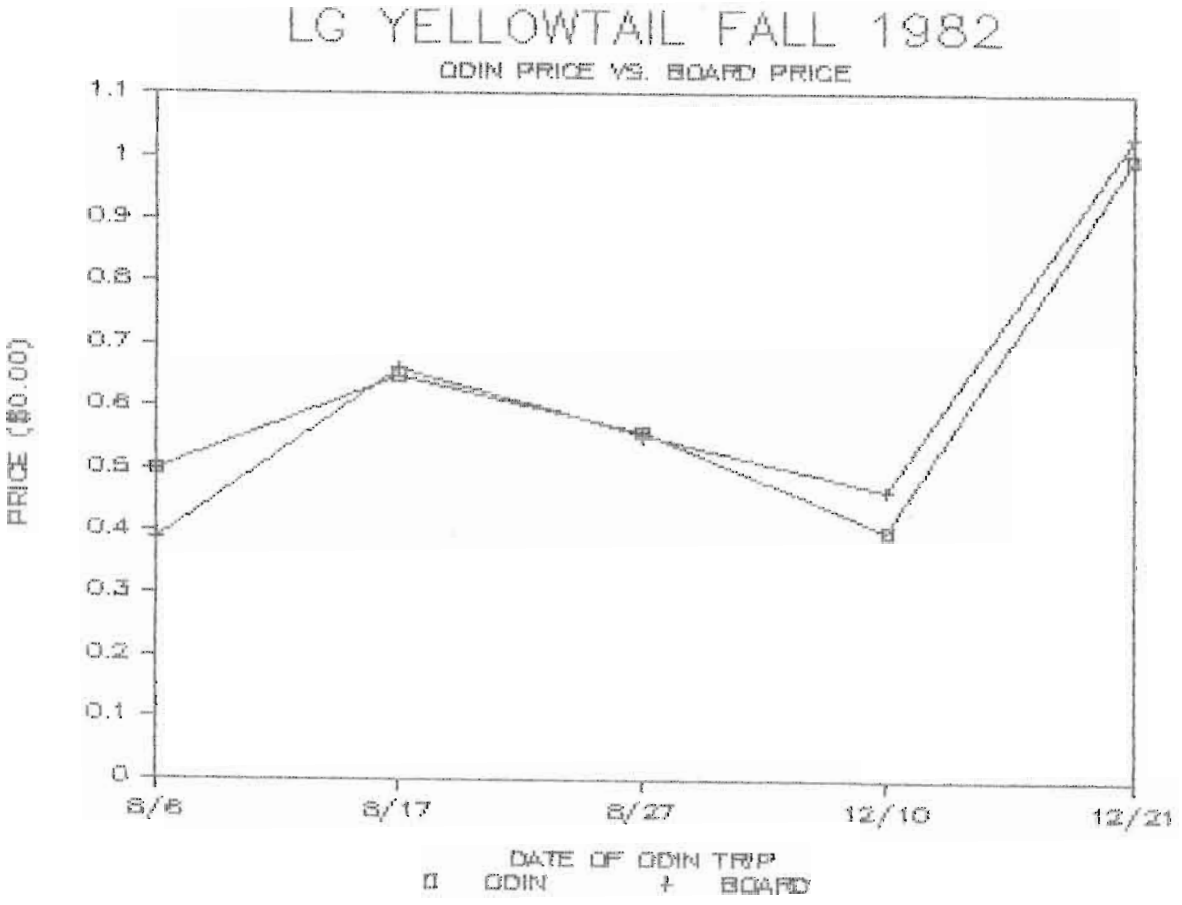
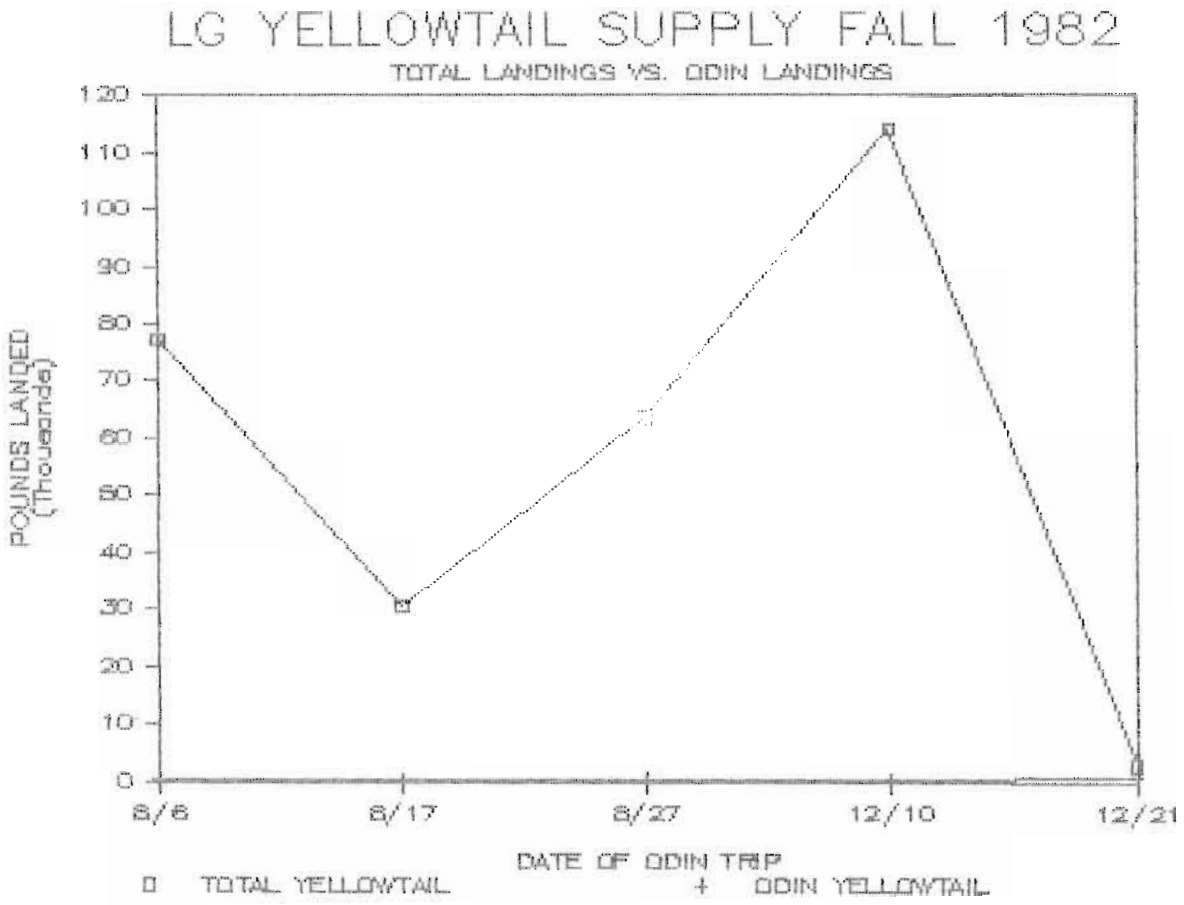


Figure 34



As has been discussed, the variation in price, the variation in the amount of the price differential, and the fact that the ODIN was not the highest boat on the board on a number of occasions, led the crew to suspect they were not getting the price premium they felt they deserved.

Partly to deal with this problem, and also to test whether other processors were serious when they said they wanted to buy premium quality fish, Captain Skaar decided to sell all his fish through the auction, including his bled and boxed fish.

On October 8, 1982, the Friday before a long holiday weekend, without advance warning to the processors, the ODIN listed two separate hails on the board, one for traditional fish, and one for boxed and bled fish. The price reflected in the graphs is a weighted average of these two hails. As seen in Figure 28 (p. 79), the price the ODIN received for large cod that day was lower than the average board price for the first time in six trips.

Even though the average price for all cod the ODIN received was only slightly below the average board price (Figure 30, p. 80) on October 8th, the impact of the low price for large cod was extremely damaging. This was the first price that everyone in the auction room looked at.

To make things worse, that morning, the Foundation had invited a reporter from the Business Section of the Boston Globe to cover the auction, expecting that when the high quality boxed fish was placed on the board, the premium price would be paid. That Sunday, the lead story in the Business section was how the fishermen in New Bedford were not able to get a price premium for quality fish

despite the additional work they put into handling it. The article appeared just before the bi-annual Fish Expo in Boston, and was seen by thousands of fishermen in New England. That story, more than any other single factor, re-enforced the feeling in New Bedford that the ODIN was not getting a price premium.

Unfortunately, it obscured the extent to which a price premium actually was being paid. Table 5 shows the gross stock the ODIN actually received during the period the vessel was boxing, compared with the gross stock the ODIN would have received if it had landed the same amount and mixture of species, and received the average board price. It shows that the ODIN gained $14,257.48 over the amount the boat would have received if they had been paid the average board price.

The price differential is illustrated in Figures 35 and 36 (p. 88). Between March and July, 1982, the ODIN had a marginal increase in gross stock. Between July and December, (Figure 36), the ODIN had a significant increase in gross stock. for the nine months the ODIN was boxing, from March through December, the overall increase in gross stock attributable to the vessel's participation in the quality project was $14,257.00. This represents an increase of 4.7% over the amount the ODIN would have received without participating in the quality project.

ACTUAL ODIN GROSS STOCK COMPARED WITH GROSS STOCK BASED ON AVERAGE BOARD PRICE

DATE	ODIN STOCK (Without 5¢ premium for boxed fish)	AVERAGE STOCK (based on board price)	TOTAL ODIN GROSS STOCK (with boxes)	ODIN GAIN (without boxes)	ODIN GAIN (including boxes)
1-8-82	$14,653	$14,583	$14,653	$69	$69
1-26-82	$21,342	$21,461	$21,342	($120)	($120)
2-8-82	$23,607	$23,295	$23,607	$312	$312
2-19-82	$30,455	$31,419	$30,455	($964)	($964)
3/3/82	$28,972	$25,220	$29,019	$3,751	$3,799
3-16-82	$21,367	$19,994	$21,426	$1,374	$1,432
3-29-82	$12,735	$12,839	$12,778	($104)	($61)
4-7-82	$7,454	$7,658	$7,582	($205)	($76)
4-20-82	$8,475	$8,600	$8,491	($125)	($108)
4-29-82	$7,442	$7,201	$7,494	$241	$292
5-15-82	$9,275	$8,771	$10,268	$504	$1,496
6-7-82	$11,830	$13,659	$12,135	($1,829)	($1,524)
6-15-82	$12,000	$12,118	$12,569	($118)	$451
6-25-82	$14,867	$13,585	$15,275	$1,282	$1,691
7-6-82	$4,981	$4,803	$5,059	$178	$256
7-16-82	$9,313	$8,309	$9,612	$1,003	$1,303
8-6-82	$10,140	$8,783	$10,489	$1,357	$1,705
8-17-82	$6,651	$6,105	$6,895	$546	$790
8-27-82	$7,530	$5,148	$7,676	$2,382	$2,528
9-17-82	$4,809	$4,208	$4,809	$601	$601
9-29-82	$2,120	$1,980	$2,120	$140	$140
10-8-82	$4,489	$4,801	$4,777	($312)	($24)
10-18-82	$3,564	$3,318	$4,029	$246	$711
10-29-82	$2,232	$2,232	$2,645	$0	$413
11-10-82	$8,709	$8,170	$9,191	$539	$1,021
11-19-82	$8,350	$7,456	$8,903	$895	$1,448
12-1-82	$4,175	$2,943	$4,663	$1,232	$1,720
12-10-82	$8,106	$7,281	$8,776	$825	$1,495
12-21-82	$5,036	$4,473	$5,291	$564	$818
TOTALS	$314,671	$300,413	$322,027	$14,257	$21,614

Figure 35 March - July, 1982

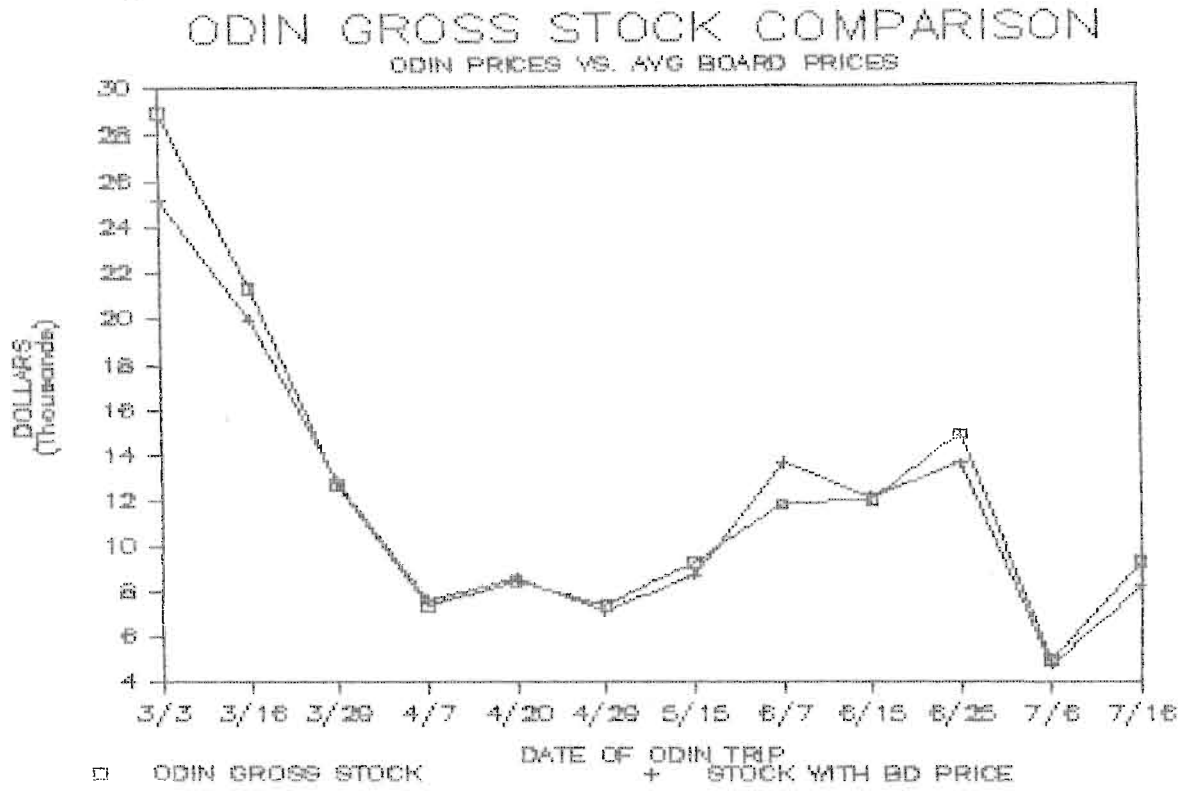
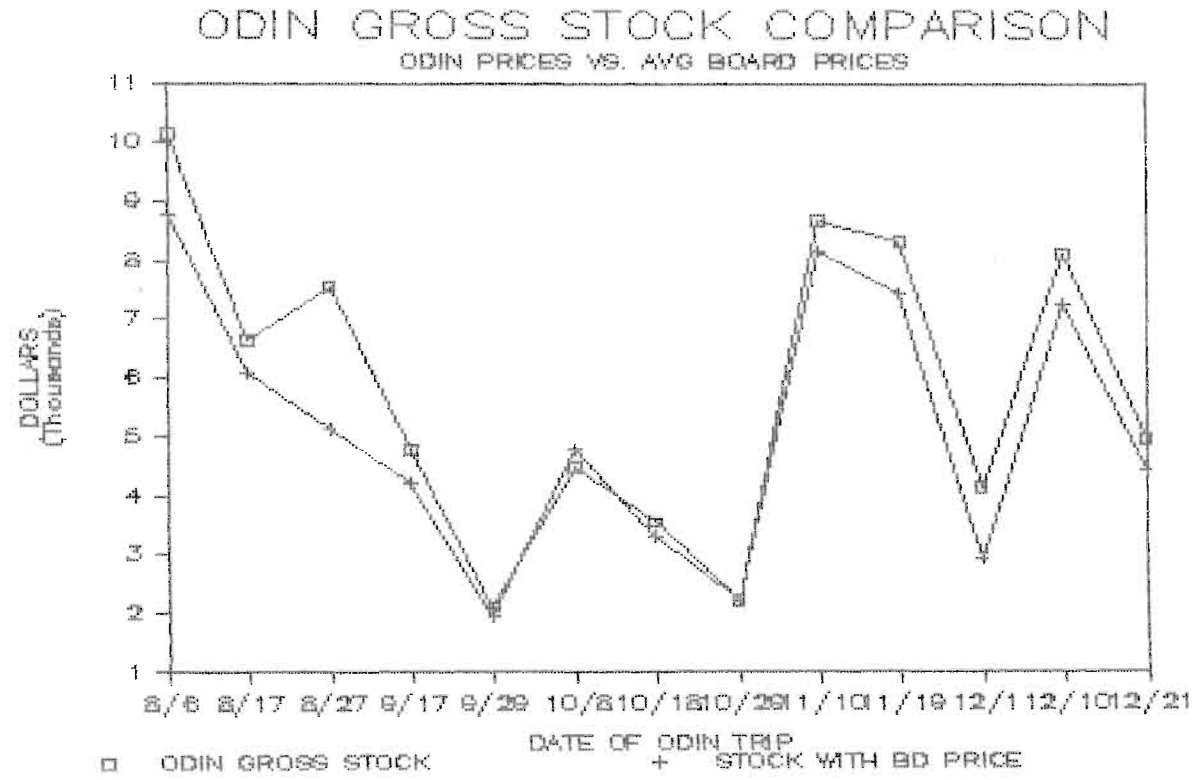


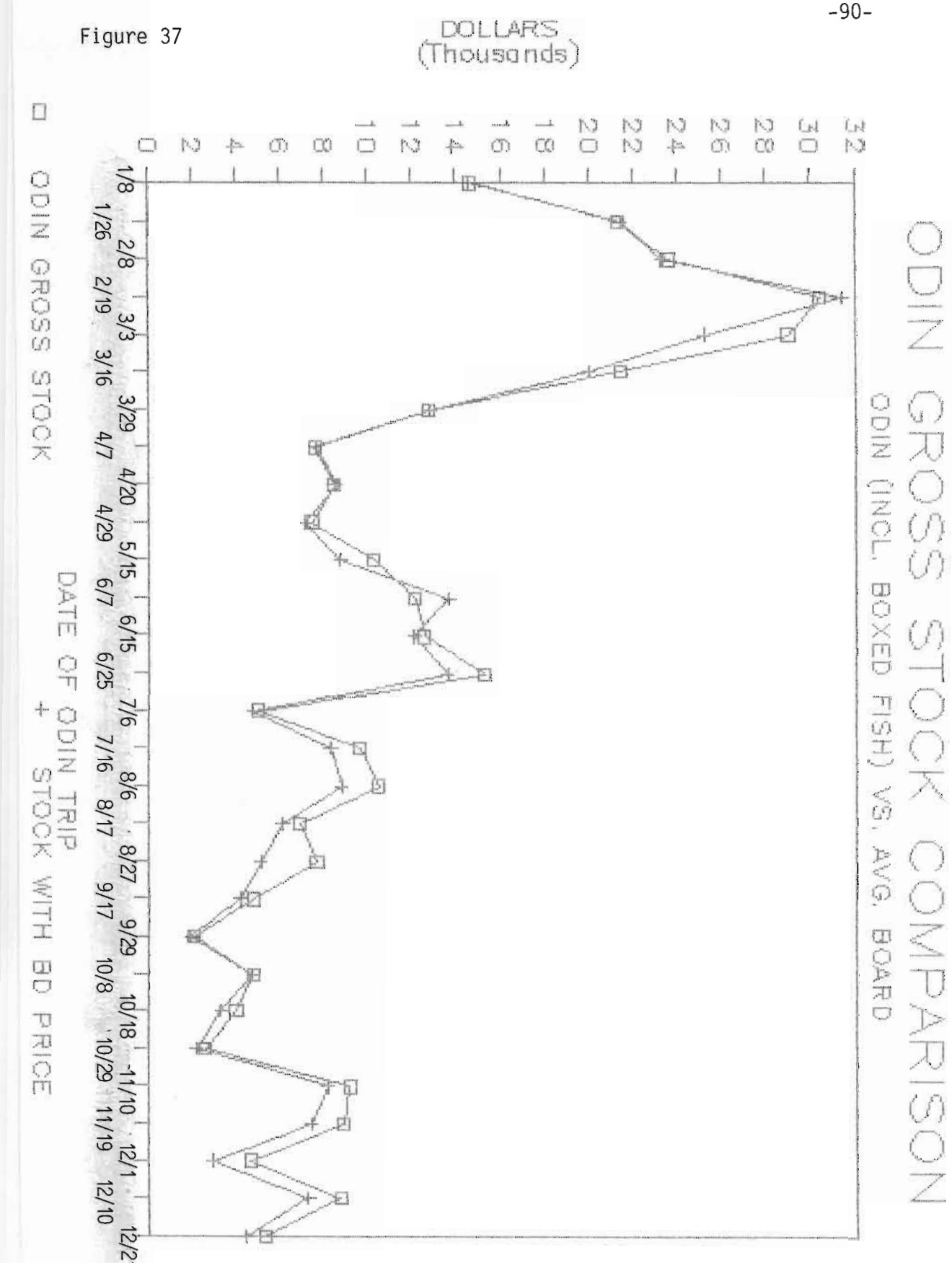
Figure 36 August - December, 1982



In fact, this figure underestimates the total gain, because separate sales of boxed fish are not counted as part of the total. The ODIN sold fish in two ways. First, the majority of the catch was hailed on the board, and received an auction price. Secondly, the fish that was boxed and bled received an additional five cent premium from the processors who bought it. This five cent premium has not been incorporated in the price comparison, because no consistent way of verifying the payment was possible based on data available in the project files. However, the last two columns in Table 5 take this premium into account. The total amount of boxed fish landed by the ODIN during 1982 was 147,000 lbs. In preparing figures for the purpose of price comparisons, the amount of boxed fish landed by the ODIN was taken into account. However, the price figures used were the board prices the ODIN received, not the price premium paid to the ODIN for boxed fish.

Virtually all the boxed fish sold separately by the ODIN was sold at a five cent premium over the average board price. Adding this premium to the gross stock of each trip, according to the amount of fish landed that trip, gives a reasonable estimate of the total premium paid for boxed fish. The total premium paid for boxed fish was $7,357.00 If this is added to the premium price paid at the auction, the total price gain to the ODIN during the project was $21,614.00. This represents an increase in gross stock of 7.2%. Figure 37 (p.90) illustrates the total price premium the ODIN received for high quality fish during the course of the project.

Figure 37


ODIN GROSS STOCK COMPARISON
ODIN (INCL. BOXED FISH) VS. AVG. BOARD
DOLLARS (Thousands)
0
2
4
6
8
10
12
14
16
18
20
22
24
26
28
30
32
1/8
1/26
2/8
2/19
3/3
3/16
3/29
4/7
4/20
4/29
5/15
6/7
6/15
6/25
7/6
7/16
8/6
8/17
8/27
9/17
9/29
10/8
10/18
10/29
11/10
11/19
12/1
12/10
12/21
DATE OF ODIN TRIP
□ ODIN GROSS STOCK
+ STOCK WITH BD PRICE

EVALUATION OF PRICE PREMIUM:

The price comparisons of the ODIN in 1982 vs. the ODIN in 1981 prove that a price differential existed during the time the ODIN was actively participating in the quality project. However, as has been discussed, at no time during the project did either the crew or the skipper feel they had been paid an adequate premium for the additional work they put in. The amount of the price premium was not sufficient incentive for the ODIN to continue boxing and bleeding fish, nor was it sufficient to attract additional vessels to adopt these handling procedures.

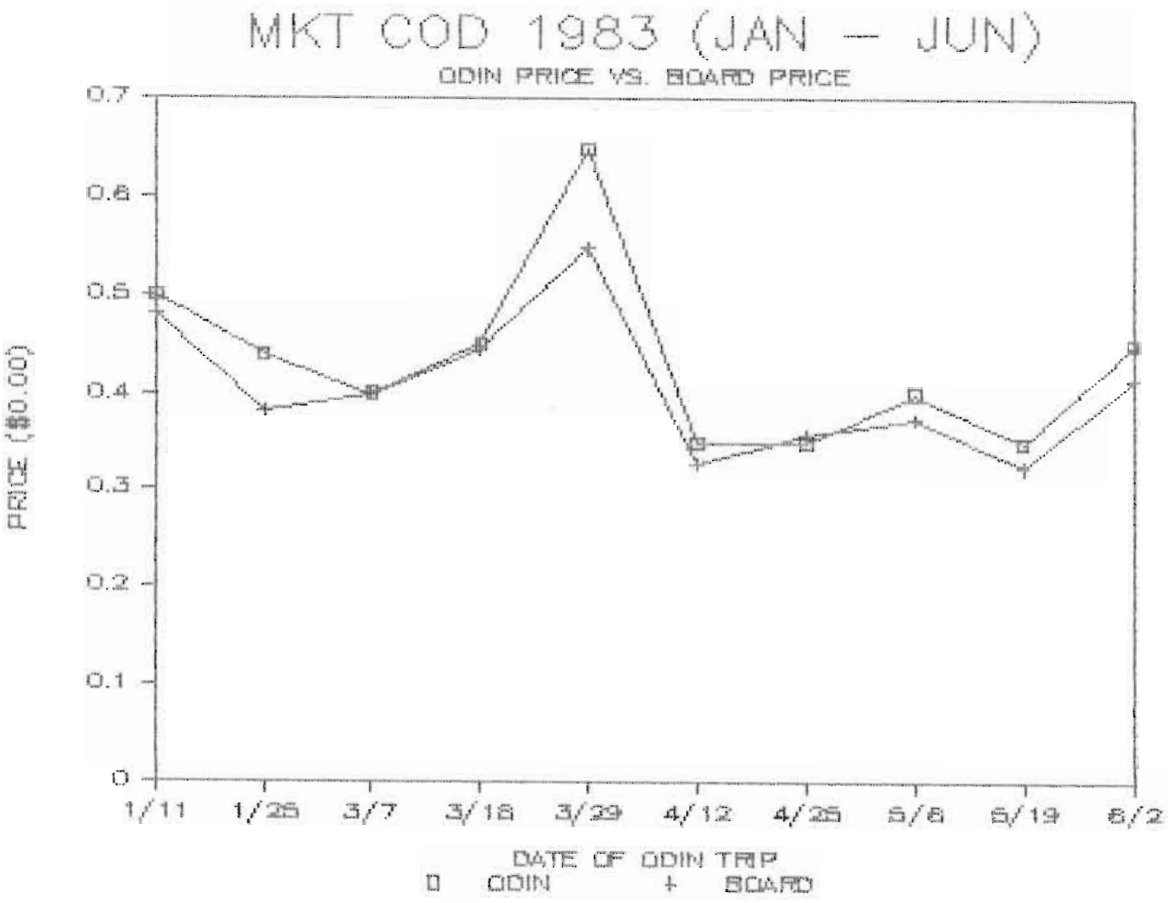
In January, 1983, the project oversight committee, consisting of New Bedford fishermen and processors, recommended concentrating on ways to reduce the labor intensiveness of boxing at sea. Baader North America Corp. fabricated a deck handling system that consisted of a washing tank and a mechanical gutting machine, specifically designed to fit the deck lay out of the ODIN. However, by the time the equipment was ready, the crew and skipper were unwilling to make additional modifications to the vessel to put it aboard. In January, 1983, the ODIN ceased boxing, because in the view of both the skipper and the crew, they were never paid a sufficient premium for their efforts.

The following graphs (Figures 38 - 45) illustrate the comparative prices the ODIN received in the months following this

decision. Although it was generally known on the waterfront that the ODIN had ceased boxing and bleeding fish, it still had a reputation for producing high quality short shelved fish, and as the graphs indicate, the ODIN continued to receive above average prices.

The price for market cod (Figure 38) reflected an above average price to the ODIN seven out of eleven trips.

Figure 38



The price for large cod does not show such a clear cut continuation of the price differential (Figure 39), but the average price for cod (Figure 40, p. 94) shows the price differential very clearly.

Figure 39

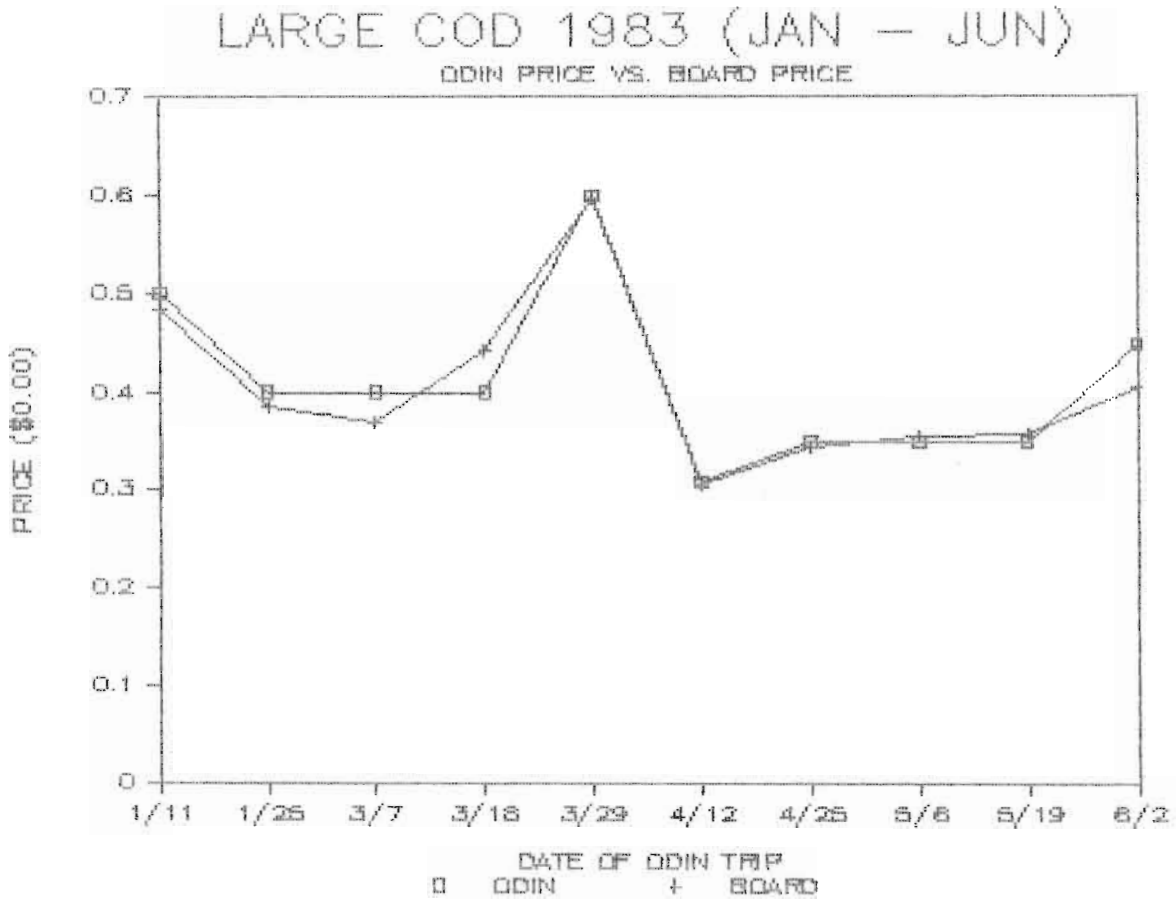
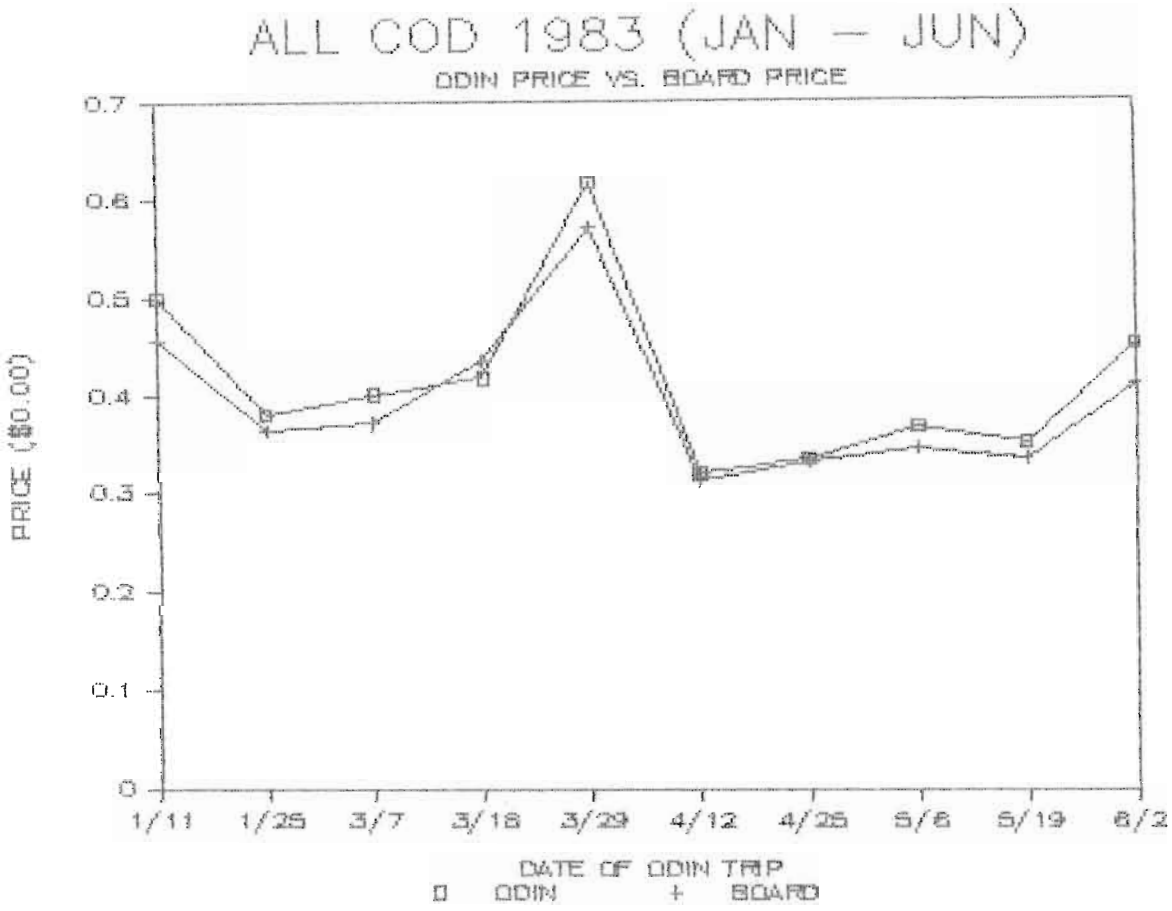


Figure 40



Prices for haddock and yellowtail are shown in Figures 41 and 42, (p. 95). Haddock prices continue to reflect a premium price during the first six months of 1983. Yellowtail also consistently received a higher price. In particular, on March 16, the ODIN was almost 100% higher than the average board price. In this case the ODIN's yellowtail price reflected bidding for other species on the vessel.

Figure 41

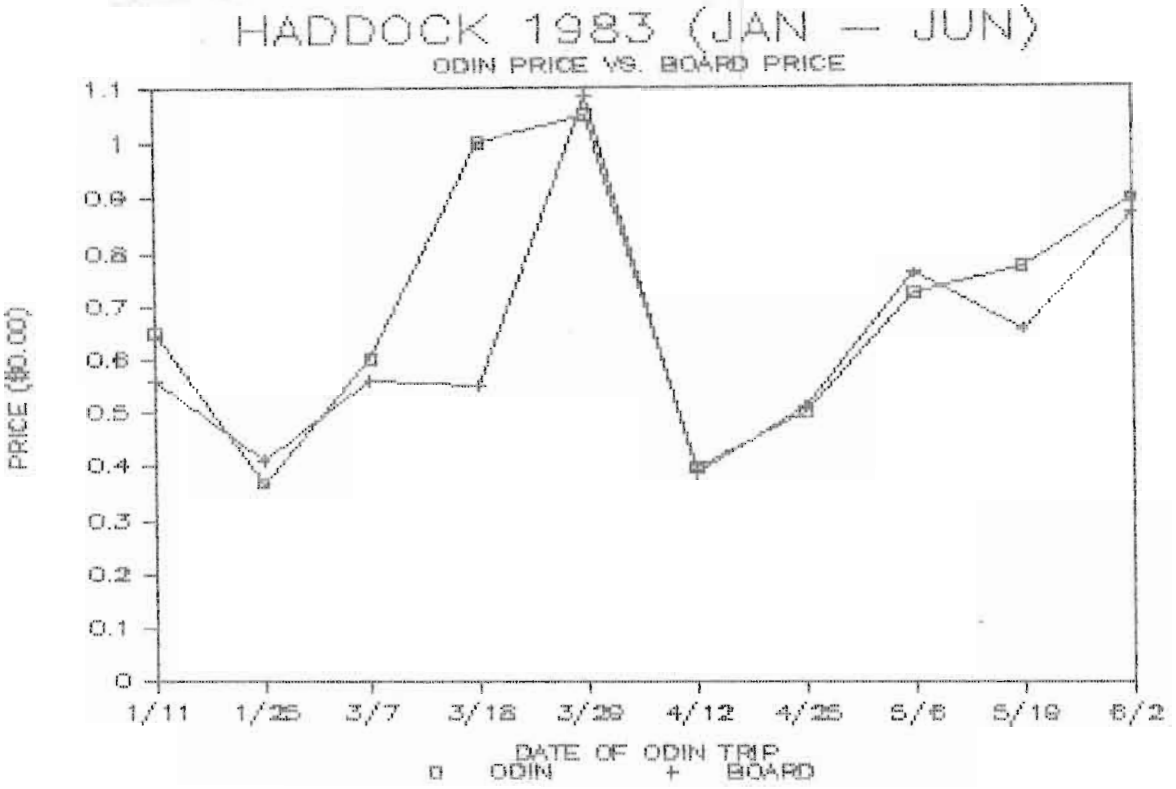


Figure 42

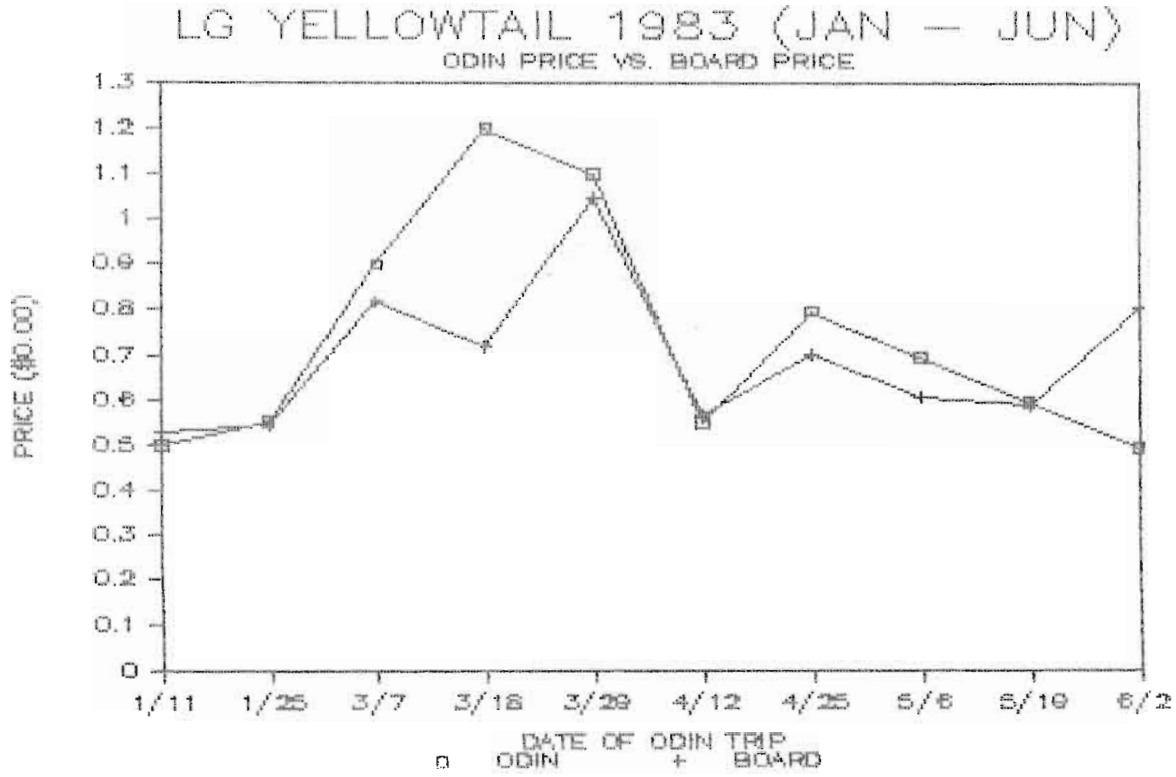
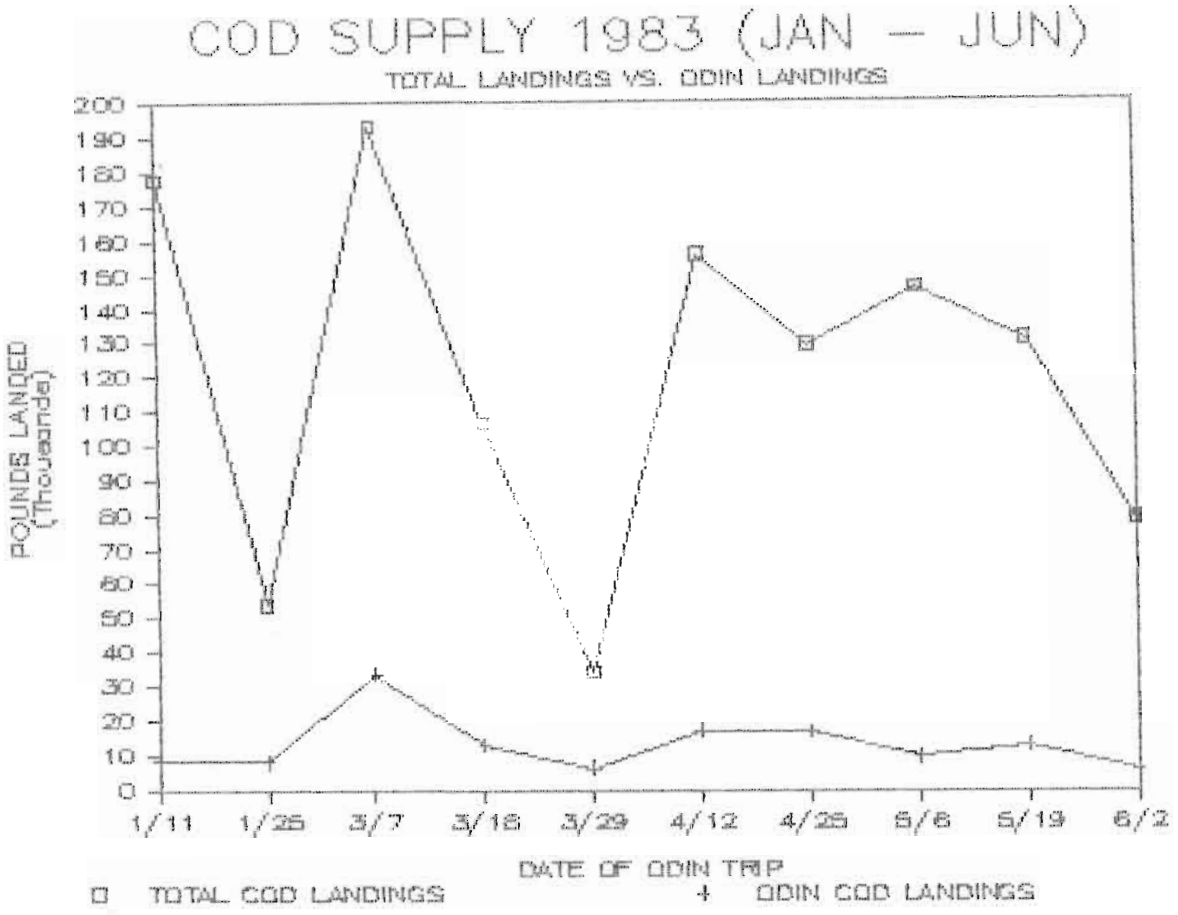


Figure 43



The amounts of all three species landed by the ODIN followed the overall trend of landings in the port, so supply factors can be assumed not to have influenced the premium price. Figure 43 shows the ODIN landings of cod compared to the total landings at the auction in New Bedford on days the ODIN sold fish. Figures 44 and 45, (p. 97) show the supply relationships for haddock and yellowtail.

Figure 44

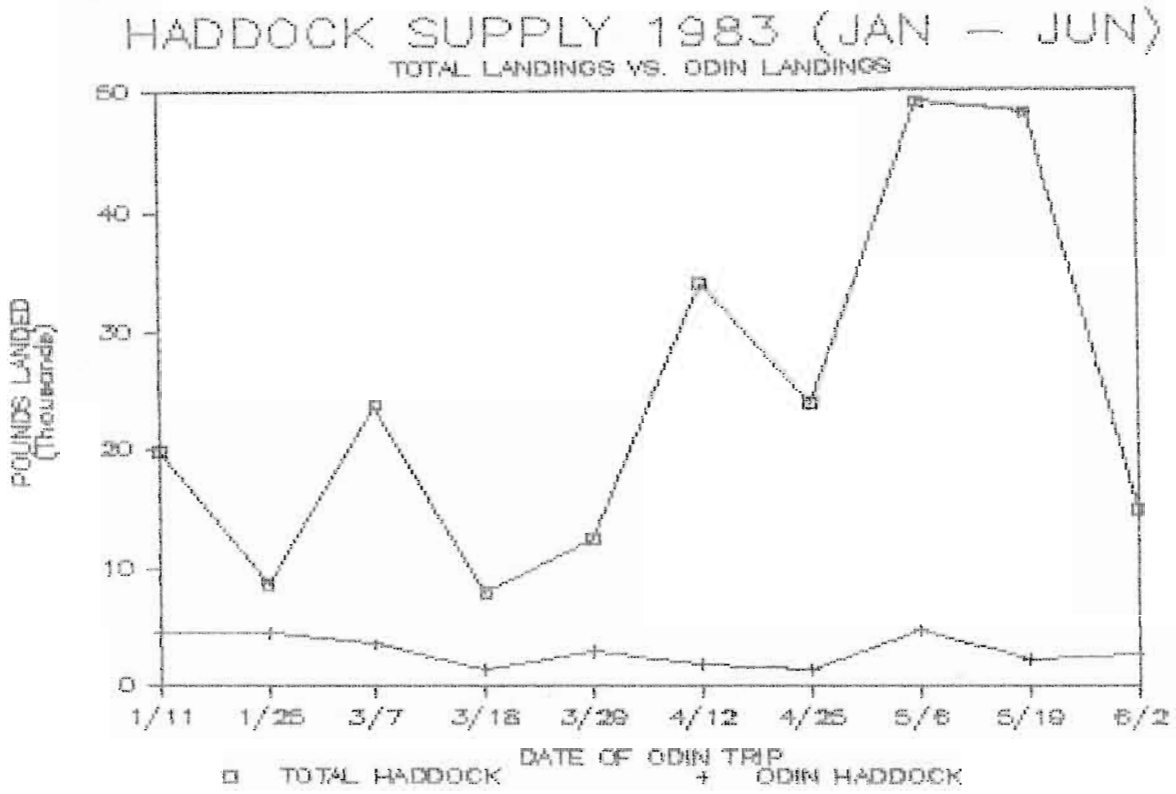
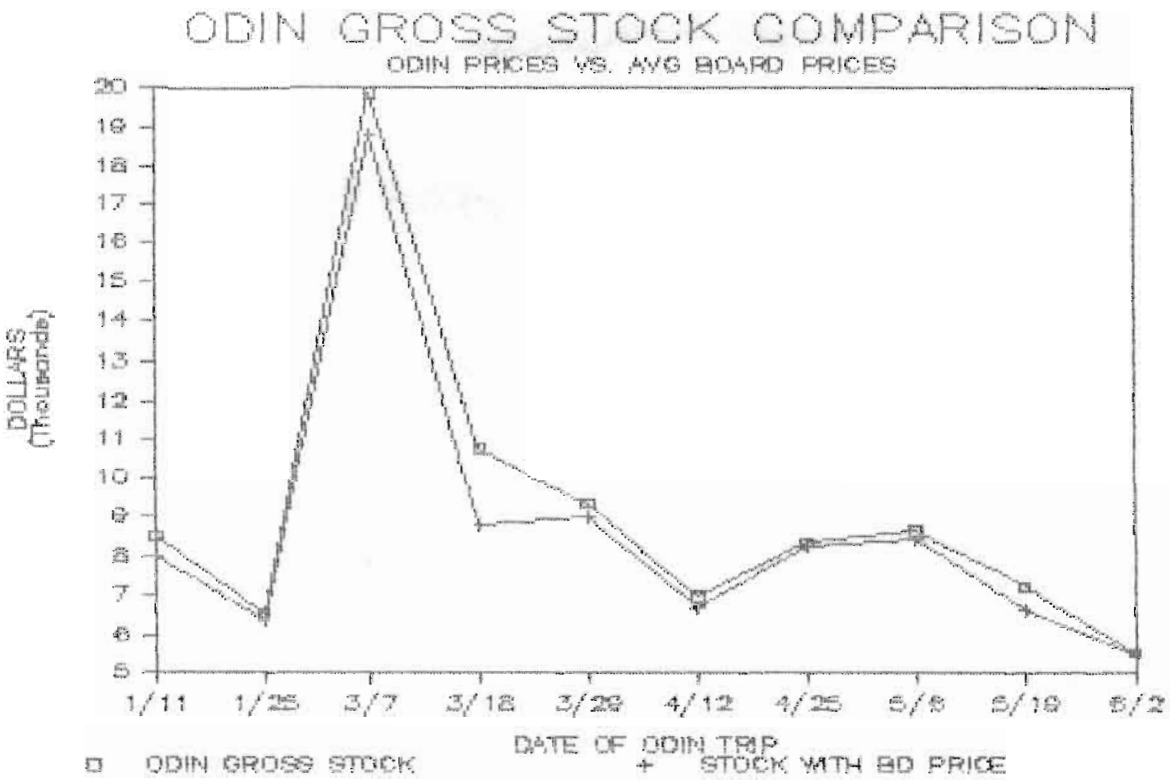


Figure 45

Figure 46 shows the gain in gross stock the ODIN experienced over the average gross stock for the first six months of 1983. At this time, the ODIN had stopped boxing and bleeding fish, although the crew continued the practices of washing, using plenty of ice, and short shelving. The total gain for the ODIN during this period is 6.1%, only slightly less than the 7.2% total gain the vessel experienced during the project. This gain is remarkable when compared with the ODIN's experience in 1981, when the price the ODIN received matched the average board price very closely. It suggests that the premium received by the ODIN in 1983 was not an accident, but was evidence of the fact that processors had a continuing interest in

Figure 46



bidding on the ODIN, at the same time the crew had decided that the price differential was too low for them to continue to handle fish in boxes.

Chapter 5 will present the reaction to the ODIN from New Bedford processors, and will explore this issue further.

CHAPTER 5: MARKET REACTION

The conclusion that can be drawn from the price comparison data in Chapter 4 is once processors in New Bedford became aware of the attempts of the F/V ODIN to land quality fish, they responded by paying a price differential. The differential was significant compared to what they had paid the ODIN before the project. The total price differential paid from March, 1982 through December 1982 was $21,614, which represented an increase of 7.2% of the ODIN's gross stock on these particular species.

However, as can be readily seen by looking at the data, the week to week variation in prices was far greater than the amount of the premium. As a result, from the crew's point of view, and in the view of most fishermen in the port, whatever price premium was being paid was not sufficient. The purpose of this chapter is to examine the issue of the price premium from the processor's point of view.

Discussions with a number of processors who bought the ODIN shows that they unmistakably felt they were paying a price premium. Mr. Steve Boggess, President of Golden Eye Seafoods, Mr. Norm Stavis, owner of Parisi's Seafoods, Mr. Michael Foley, president of M.F. Foley Co., and Mr. Brian Veasy, while president of the New

Bedford Co-op, all stated that they paid significantly higher prices in order to get fish from the ODIN. (29)

Mr. Foley and Mr. Stavis paid 5 cents lb. premium for virtually all the boxed fish they could get. Mr. Boggess stated that he paid more for the ODIN than for other comparable boats.

Why did the processors involved in the project state unequivocally that they paid a price premium, and yet the impression of fishermen in New Bedford was that no such price premiums were being paid? First, the size of the premium was small compared to the week to week variations in the overall price of fish. Secondly, the amount of the premium itself was small.

The processors sell product in a commodity market. There is little differentiation between the fillets of one processor versus another, and as a result, they compete primarily on price. In New Bedford, processors make most of their profit by buying fish more cheaply than a competitor, and then selling it at a competitor's price. In this situation, a relatively small price premium paid to a vessel may represent a considerable amount to a processor.

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(20) Comments by processors are based on extensive contact between the author and the processors involved during and subsequent to the Quality project.

There are a number of variables that determine a processor's final product cost. Among them are the price paid for fish, the fillet yield of the fish, whether any advantage of additional product weight accrues to the processor, and whether yield and shelf life are lost due to lower product quality.

As was mentioned in the discussion of product yields, New Bedford processors do not get accurate weights of product coming into their plant. When a vessel is unloaded, fish is hauled up in baskets and dumped on a culling board. At the other end of this culling board is a 125 lb. wooden fish box, sitting on a scale. The chute man sweeps fish into this box until the scale goes over 125 lbs. Because the scales are relatively slow, a "good" chute man will sweep in an additional 10 to 15 lbs. of fish during the time the scale is registering 125 lbs. As a result, the processor is getting 140 lbs. of fish, while paying for 125 lbs. (21)

In New Bedford, price cuts for inferior quality also are used by processors to lower their overall cost of fish. The extent to which processors can negotiate price with the vessels depends largely on how much volume is being landed, and whether the processor

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(21) The author is indebted to Gene Connors, a fisherman out of New Bedford for more than 20 years, for taking him around to various unloading facilities and documenting this practice.

will be hurt if that particular vessel refuses to sell to him for several weeks. Because the fisherman is dependent on a single buyer to unload his vessel, he often finds it more expedient to go along with a price reduction rather than try to pull away from the dock and sell his fish to someone else.

The point of these illustrations is that New Bedford processors are completely immersed in a commodity market. They do not expect to sell their product at anything except the lowest competitive price. Therefore, all their effort goes into lowering their cost so they can meet this price and still make a profit.

In the last several years, this has become more difficult because the market for fresh fish has become much more international. Canadian producers have dramatically increased their exports of fresh fish fillets into the U.S., often quoting prices 20 to 25% below the prices of domestic producers. (22)

When the price of scallops in New Bedford hovered around $7.00 lbs., large numbers of scallops from other parts of the world came into the U.S. market. New Bedford processors have adapted to this

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(22) Coons, Kenelm "New England's View of the Canadian Fishery", presented at the Canadian Fisheries Management Conference, Lunenberg, Nova Scotia, March 27, 1984

situation by buying fish from various sources, and averaging out their price. Most processors will buy lower priced Canadian fish at certain times. Because the price of Canadian fish, and other "over the road" fish is almost always lower than the New Bedford auction price, the auction price does not represent the true cost of fish to the processors in New Bedford. Similarly, the Boston auction price does not represent the true cost of fish to Boston processors. Their true costs, in both cases, are averages of the auction price and discounted "over the road" fish. Therefore, to a processor, the actual difference between the ODIN price, which was higher than the average New Bedford auction price, and their real cost, was greater than the 6% to 7% indicated by the increase in the ODIN's gross stock.

Another circumstance that impacts on processors in New Bedford, and certainly was important during the course of the project, was the competition among processors for vessels. Norm Stavis, of Parisi Seafoods, has stated that he would have paid a higher premium to the ODIN if he could have made an arrangement with the ODIN to sell his fish exclusively through Parisi. However, the skipper, Gabe Skaar, felt that to tie himself down to any one processor would be a disadvantage. From the processor's point of view, the inability to make a long term arrangement with a particular vessel makes it much more difficult to obtain a return on a price premium.

Although Norm Stavis was very pleased with the quality of the fish landed by the ODIN, he stopped buying the ODIN on a regular basis after it became apparent that he could not get any exclusive arrangement with the vessel. In the fall of 1982, Parisi Seafoods recruited a second vessel to participate in an on-board quality program. This vessel, the H.M.S. YONG, adopted the same handling procedures as the ODIN, and received boxes and training for the crew from the Foundation. Parisi agreed to pay the vessel a 5 cent premium and tried to make an exclusive contract. After two trips, the skipper (who was not the owner of the vessel) decided that they could produce a high quality fish, but there was no need to exclusively sell it to Parisi. For the next seven months, the H.M.S. Yong boxed a portion of their trip, and sold this fish for a 5 cent premium over the auction price. Their trips were unloaded at Eastern Fisheries, owned by Mr. Roy Enoksen, and sold for the average board price. The boxed fish was sold at a higher price by Enoksen to other dealers, and that was how the crew received a premium.

Processor reaction to the quality fish from the ODIN, then, was to pay a premium reluctantly. They recognized the vessel's demand for a special price, but they were not convinced that the benefits of the ODIN fish, in either yield or shelf life, were worth a large price premium. Consequently, the actual premium paid was between 5% and 7%.

RETAIL BUYERS REACTIONS:

During the course of the project, considerable effort was spent educating retail and foodservice users of seafood about the benefits of higher quality fish. They did not need to be told the value of improved quality. It was something they wanted badly. However, among retail and foodservice buyers, there was almost universal ignorance about how fish was actually caught and processed, and about which handling procedures would in fact make a difference in quality.

The education of these buyers took place in two ways. First, two of the companies, M.F. Foley, and Parisi, held regular buyer seminars at which project staff would speak and explain the quality improvement program. The most successful of these seminar series was sponsored by Mike Foley. Every month, a group of 12 to 15 customers would spend two days in Massachusetts, touring plants and learning about fish production. As part of this seminar, presentations were made on boxed fish, and often samples of boxed and bled fish were compared side by side with samples of traditional fish.

At the same time, the Foundation publicized the project through numerous speeches and articles in trade journals. At major seafood product shows, buyers were shown boxed and bled fish from the ODIN, and many requested it from their suppliers.

However, the first question all these buyers would ask concerned availability. Because the fish was landed on just one vessel, there was no way that reliable supply could be guaranteed. Processors were wary of this problem also. They did not want to build up their customers expectations for a product they could not deliver. Nor did they want to begin a series of invidious comparisons between the fish they currently had to offer and boxed and bled fish.

Therefore, no processors developed real marketing programs for boxed and bled fish. However, as you would expect in the fish business, processors took advantage of this customer interest whenever possible. Many more thousands of pounds of "ODIN Boxed and Bled fish" were sold than were actually landed. Processors took advantage of the publicity surrounding the project to try and sell premium fish whenever they could, whether it was actually premium quality fish or not.

In some cases, this practice damaged the reputation of the project, and buyers expectations about quality fish. In one instance, a company bought a large amount of "ODIN Fish", and then tested it themselves, and found it was not at all what they expected. They did not order any more of this fish for a year, and expressed the opinion that the fish being produced was not superior. Later, the Foundation discovered that the shipment had not contained fish

from the ODIN at all.

Besides the problem of consistency, there was also the problem of volume. During the height of the project, the ODIN was landing only 10,000 to 12,000 lbs. of bled and boxed fish every 10 days. No processor or buyer can build a program on that small amount of fish. As a result, no clear test of the real value of the product to either processors or retail and foodservice buyers was ever made.

In order for processors to pay more for a premium quality fish, they needed customers who were willing to accept large price differentials. As a rule of thumb, in fillet production, the price of the fillet is approximately three times that of the whole fish. Therefore, a 10 cent premium price to the boat translated into a 30 cent price differential at the wholesale level. This is a very large price differential in a business where customers are known to switch suppliers for one or two cents. Because of the lack of volume, no buyer was guaranteed a sufficient supply to enable them to test actual sales of the product, and determine whether it was worth the additional cost.

In conclusion, general buyer reaction to the higher quality fish was extremely positive, both on the part of the processors, and on the part of retail and foodservice buyers. In each case, the

reaction was more positive than the amount of the price premium indicated.

For processors used to selling in a commodity market, the fact that they paid a price premium at all seemed very significant. From their point of view, they were paying a higher price for fish that they were not necessarily going to recover their cost on. Although they were aware of the yield and shelf life benefits, this did not influence their pricing decisions so much as whether they could sell the fish to their best customers, and whether they could secure for their own use a regular supply of quality fish.

From the retail buyers point of view, the product was excellent. However, before they could determine how much it was worth to them, they needed to know if it was available. The fact that there was only one additional boat besides the ODIN involved in landing this type of fish after one year meant that the product was essentially unavailable. Therefore, the project never got a fair test in the market.

The interest expressed in the ODIN project by both processors and retail and foodservice buyers was not just financial. Many New Bedford processors contributed heavily of their time and advice to make the project work. The enthusiasm of retail buyers for higher

quality fish was evident in the interest they took in learning about fish in general. This interest was reflected in attendance at Foundation seminars, requests for information, and their interest in a project designed to improve fish quality. Under the circumstances of low volume, uncertain supply, and without the fish to carry out actual market tests, the reaction of the retail and foodservice buyers was extremely favorable.

CHAPTER 6: CONCLUSIONS

The attempt by the ODIN to show that premium quality fish could be landed in New Bedford, and that such quality fish could generate a price differential, was a reaction by the industry to the problem of fish quality. On the most general level, the project attempted to answer the question of whether improved fish quality could come about in the United States through market incentives, as opposed to federal regulation. The overall assessment has to be that, although a price incentive was established, it was not sufficient to convince a number of additional vessels in New England to change their fish handling practices.

However, that does not mean that the answer to fish quality is federal regulation. The ODIN project made the entire New England fishing industry focus on the problem of landing quality fish. Before analyzing what the overall impact of the ODIN project may be on the future of the New England fishery, the actual achievements of the project should be reviewed.

1. A Price Premium was Established:

One of the most significant accomplishments of the project was to establish a price premium for quality fish in New Bedford. The ODIN did not simply demonstrate the best handling techniques for cod and haddock. Instead, the ODIN applied these techniques to produce quality fish, and then sold that fish at a premium in the

open market. This is a significant accomplishment for a federal project. It gave the project far more impact than it would have had if the ODIN had been chartered, and paid to produce a certain type of fish.

2. The Amount of the Price Premium was Small.

There was a unanimous feeling on the part of the fishermen in New Bedford that the amount of the price premium was too small. However, the premium was significant. In 1981, the year before the project, the gross stock of the ODIN for the species studied was 1.8% below the average stock for a vessel landing the same fish as the ODIN on the same days in New Bedford. In 1982, the Odin's stock was 7.2% higher than the average price, due to the participation in the project. In the first six months of 1983, the gross stock was 6.1% higher, because many processors felt the ODIN was still producing the highest quality fish, even though the vessel had stopped boxing. For example, the ODIN continued to short shelve their fish on a regular basis. According to Steve Boggess, a New Bedford processor, the price differential the ODIN achieved in the first six months of 1983 was due to a "halo" effect that continued long after the project had stopped.

The fact that this premium could be established in a commodity market is extremely important. The bulk of the price premium was

the difference between the ODIN's price and the average New Bedford auction price. This was paid by any processor who bought the ODIN. Although some companies in New Bedford, such as M.F. Foley, are breaking out of the traditional "commodity" approach to selling fish by striving to differentiate their product, these companies did not support the higher auction price. They did pay the 5 cents premium for boxed fish, however. But most of the ODIN's catch was sold with other fish fillets at the going market price.

3. Processors Felt the Premium Was Significant

Processors felt the premium was significant. New Bedford processors did not consider the additional yield, shelf life, or other intrinsic factors in pricing the ODIN's fish. They considered mainly whether they could pass on the higher price to their customers. In this context, they felt that given the limitations of volume, the fact that no individual company had an exclusive supply contract with the vessel, and that one vessel did not land enough fish consistently to guarantee the same fish to a customer week after week, they paid as much for the fish as they could.

For a processor to pass on a higher price, he has to educate his customer. He cannot educate the customer when he can only supply him with special fish two times in three months.

The project demonstrated that high quality fish can be produced in the United States. Prior to the ODIN project, there was a feeling in the industry that the highest quality fish came from overseas, from Iceland and Norway. The ODIN was able to demonstrate that in New Bedford, fish could be landed that was the equal of the highest quality fish anywhere in the world. During one trip, a Norwegian fish inspector visiting the Frionor plant in New Bedford, which is owned by a Norwegian company, commented that he "wished that in Norway this same quality of fish would be produced." His remark was repeated all over the waterfront, and gave credence to the feeling of the ODIN crew that they produced fish equal in quality to fish produced anywhere in the world.

The project also showed that the structural impediments to quality cannot be overcome by a single vessel. If the price incentive had been large, it is quite likely that other vessels would have quickly become involved in the project. If that had happened, the problem of volume and consistency could have been solved, and processors could have guaranteed certain customers a reliable supply of high quality fish. However, to accomplish that would have required a collective investment by the processors to raise fish prices as an incentive to fishermen to land exceptional quality fish. Then once the fish was being produced, they would have to go out and sell it at a premium to recover their investment.

Such a scenario is unrealistic in a port characterized by fierce competition over fish supplies.

However, individual companies have seized on this opportunity. A vertically integrated company could recover its investment in fish quality. The reason is that first, such a company could control the source of supply--the fishing vessel. Secondly, such a company could develop a marketing program based on access to a good supply of quality fish. Third, the company could guarantee continuity by expanding the program only as fast as its supplies of quality fish would allow. A new seafood company, Sea Bank Industries, has raised venture capital to attempt just this scenario in Maine with three long line vessels designed to carry boxes. Also a major seafood foodservice company is considering acquiring fishing vessels to follow the same strategy.

In New Bedford, M.F. Foley has attempted to follow this strategy without owning vessels, by working to cement relationships with particular vessels outside of New Bedford. One vessel, the F/V Christopher Andrew, Skipper Frank Mirachi, from Scituate, Massachusetts had consistently begun boxing and bleeding his catch, selling exclusively to Foley for a premium price, and allowing Foley to market his fish.

Since the official end of the project in June, 1983, a number of related activities have continued in both New Bedford and other ports. In Boston, the F/V TREMONT, a large 120' stern trawler owned by the Fulham family, participated in an on board quality program involving boxing and bleeding from October 1983, to June 1984. During this time, the TREMONT landed over 110,000 lbs. of boxed and bled haddock, and sold this haddock to selected buyers at a price 10 cents over the Boxton auction price. The project did not continue past June, 1984, however, because of disagreements between the crew and the buyers about the price premium. Secondly, the crew, once they realized that putting fish in boxes increased their value, tended to put the fish that was oldest and in worst shape in the boxes. As a result, buyers complained that they were paying a premium for the oldest fish, simply because it was in a box. In fact, the quality of this fish was good, but it would have been better if the crew had boxed the more recent "top of the trip" fish.

In Maine, several vessels are experimenting with boxing and bleeding, and the Maine Groundfish Association has undertaken a program to repeat many of the experiments carried out on the ODIN. The feeling of the Maine Groundfish Association, however, is not to concentrate on the price premiums available, but simply to land high quality to get the best possible price for the fish.

Finally, in New Bedford, a group of eight vessels, including the ODIN, has organized co-operatively to land and sell higher priced boxed fish. These fishermen have decided to solve the problem of supply by having each of the eight vessels carry 20 to 30 boxes, and to unload and sell these boxes to buyers directly, who will pay a premium. This group was organized in the summer of 1984, and they have spent most of their time searching out qualified buyers.

As these examples show, the ODIN project sparked enough interest so that a range of efforts are underway to improve the quality of the fish landed in New England.

Canada has been involved for the past five years in a program to improve the quality of Canadian groundfish, through mandatory handling standards, and a system of dockside grading. If the Canadians are successful in improving the overall quality of the fish they export to the United States, they will have a double advantage over domestic producers: both quality and price. If this occurs, the market will not tolerate lower quality domestic fish without severe price discounting.

The reason many fishermen are continuing to experiment with landing higher quality fish, regardless of the price incentive, is because they fear that in the future, only quality fish will

command the present day prices. Lower quality fish will be severely discounted. If this occurs, it will represent a change in the market and will set price differentials for fish based on quality. However, instead of those price differentials being higher than present day prices, the lower quality fish will only be sold at deep discounts. Therefore, coercion of the market may bring about changes in fishermen's handling practices in the United States without intervention by the federal government.

In the next several years this is not likely to happen. In the short term, New England is facing a resource crisis due to over-fishing, exacerbated by the recent boundary decision dividing Georges Bank with Canada. As a result, prices will remain very high by historical standards, and the demand for fish available will counter-balance any attempts by buyers to cut prices due to questionable quality.

For those fishermen who think about the future, the ODIN experiment was an important first step towards getting market recognition of quality fish. Even though the premiums were not as high as fishermen thought they deserved, the fact that they were there was significant. In addition, the ODIN demonstrated the handling techniques, from short shelving to bleeding, which are increasingly being practiced by fishermen attempting to land the highest quality fish. When price differentials for quality are established at the producer level, the Odin project will have contributed to that goal.

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