



# FISHING BUSINESS MANAGEMENT & ECONOMIC INFORMATION

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This manual is intended to assist the fisherman in understanding some of the terms and concepts of business management as they apply to fishing. It also suggests procedures for developing useful management information. There are no "short cuts" to better management and this manual does not pretend to provide ready solutions to fishermen's management problems.

Unfortunately, the terminology of business management is frequently confusing to the uninitiated. Businessmen, as well as fishermen, have their own "language." Although new (and sometimes confusing) terminology is minimized in this manual, the reader should be prepared to learn some previously unfamiliar business management concepts. This requires study, as well as reading, of this manual and sufficient motivation to take advantage of other information and programs leading towards better business management.

## FISHING IS BIG BUSINESS

Over 18,000 commercial fishermen in northern California, Oregon, Washington, and British Columbia are involved in the business of fishing. Fishing in the Pacific Northwest is big business. These 18,000 fishermen landed \$87,800,000 worth of products in 1968. Although this is an average of only \$4,878 per fisherman, some fishing businesses handle more than \$200,000 worth of products annually.

In spite of the large dollar volume of seafood landed by fishermen and the thousands of dollars that each fisherman handles, many are not earning the return for

their management, labor, and investment that could be earned in the most humble mainstreet business of comparable size.

A successful businessman, whether a service station operator, farmer, tavern keeper, or fisherman, should first recognize that his business *is* a business. In the words of D. R. Getchell, editor of *The National Fisherman*:

"A man can be a crackerjack fisherman and a lousy businessman at the same time.

And this dual role can leave him poor, if not broke.

Unfortunately, not every fisherman has the business training needed to operate independently in this modern world . . . He may be landing a good catch, and then wonder where the money goes. Poverty always seems just around the corner, no matter how hard he works."

In other words, the fisherman needs to be a good manager as well as a good fisherman. He must have adequate information concerning his own and his competitors' business and must have the ability to put this information to good use.

## THREE WAYS TO INCREASE PROFITS

The road to increased profits is not complicated. The fisherman needs only to (1) increase the prices received for his products, (2) produce more, or (3) reduce costs. As any businessman knows, the accomplishment of any one or combination of these requires a basic understanding of their intricate relationship and that of costs and returns. For some understanding of these profit-determining factors, look at Figure 1. It illustrates the change in costs and gross returns for a 40-foot West Coast troller producing up to ten tons of salmon.

If the salmon price is \$1,000 per ton, the fisherman must produce between six and ten tons to obtain a

profit. The maximum profit attainable will be \$1,600 at eight tons production. When the salmon price is increased to \$1,400 per ton, the profitable area becomes much larger, from four to over ten tons production. Also, the maximum profit becomes much larger.

Using this scale, fishermen producing at a loss can begin obtaining a profit (if one actually exists in the fishery) by producing between six and ten tons of salmon per year. This is simply a matter of moving from a low to a higher production level—as long as costs do not increase as rapidly as gross returns.<sup>1</sup>

Reducing total costs at any level of production has the same effect as an increase in price. That is, the area of profitability is increased and the maximum profit attainable is larger. In Figure 1, this is illustrated by a shift from total cost curve A to total cost curve B. Although an increase in prices may be highly desirable, it is usually effected only by collective action of fishermen under favorable market conditions. This rewards all fishermen equally, whether they are businessmen-managers or not. Therefore, the more immediately productive route to increased profits is through a combination of increased production and reduced costs.

### TOWARD A COMMON LANGUAGE

It is difficult to understand, but not unusual for a fisherman to have several thousand dollars in his checking account at year's end, pay \$1,500 in income taxes, and still have a business loss. The same dollars paid for parts, supplies, labor, etc., and received from the

sale of crabs, rockfish, or salmon can be added, divided, grouped, and summarized in numerous ways for such purposes as reporting taxes, filing an insurance claim, applying for a loan and, last but not least, managing the business. Each will yield different results for different purposes. Accurate and efficient business management requires the accumulation and interpretation of enough information to satisfy all these needs.

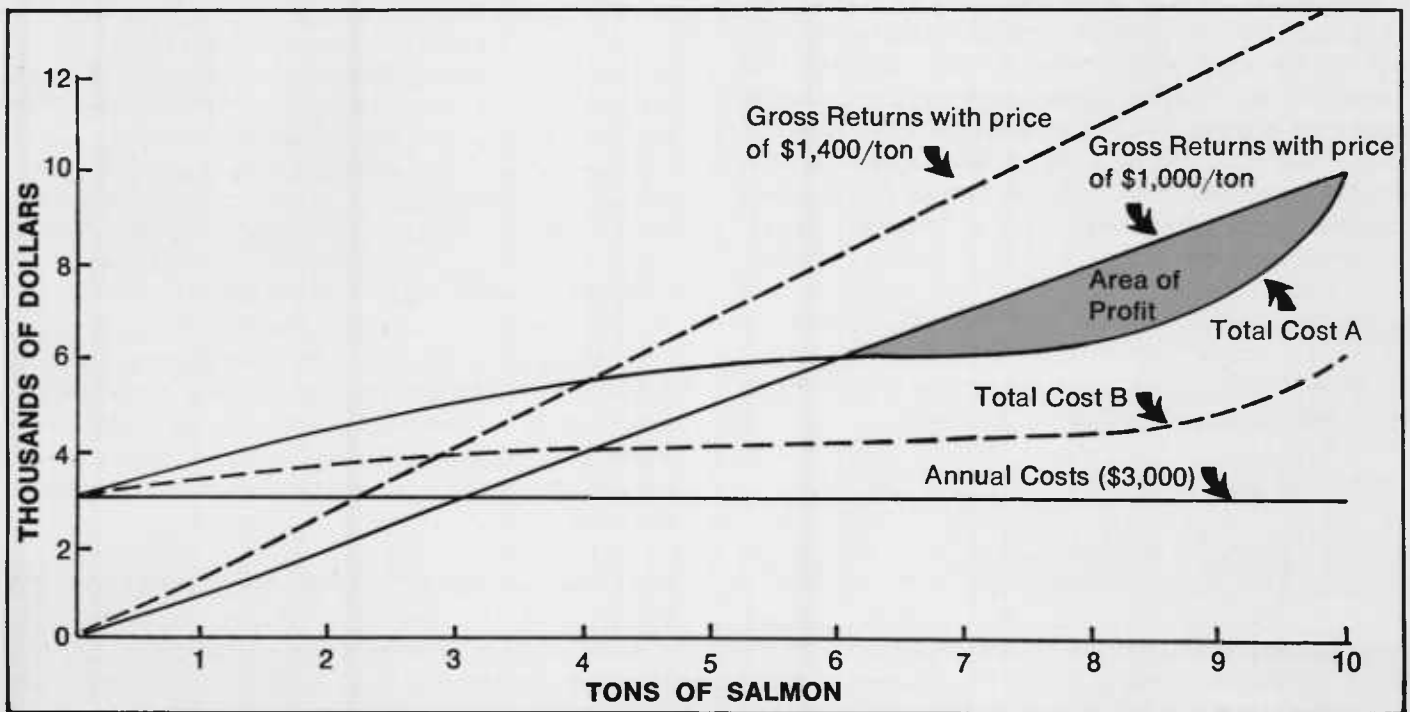
Such information is listed and defined as follows:

**RETURN TO OPERATOR MANAGEMENT**—What the fisherman earned for his management contribution to the business, for his effort in deciding when and where to fish, how to fish, where to buy, and where to sell. It is his gross returns less all costs including a charge for the average capital invested in the business and a charge for the fisherman's own labor. It is sometimes referred to as profit, but profit has a much more general meaning. Return to operator management measures the productivity of the fisherman as a business manager.

**RETURN TO INVESTMENT**—The actual earnings of the average capital invested in the business. It is calculated by adding to return to operator management the charge that was made for investment in under

<sup>1</sup> Gross returns increase at a constant rate, since they are equal to tons of salmon times price of salmon. If gross returns were illustrated as a function of fishing effort as is frequently done, they would not necessarily increase at a constant rate.

**FIGURE 1**  
The Relationship between Costs and Returns for a 40-Foot West Coast Troller Producing Between 0 and 10 Tons of Salmon per Given Season\*



\* It should not be inferred that profit for this vessel can be obtained as shown since this graph is partly based on hypothetical data.

the fixed cost category. **Return to investment** measures the productivity of the capital invested and is directly comparable to the return to investment or capital earnings for any other business.

**RETURN TO OPERATOR LABOR AND MANAGEMENT**—What the fisherman earned for his labor and management. It is the return to operator labor plus the charge that was made for the fisherman's own labor. This return is roughly equivalent to the salary earned by the owner-operator of a grocery store, motel, or marina.

**VARIABLE COSTS**—Also referred to as production costs and, in some cases, trip costs and operating costs. It is the expense incurred as a result of going fishing, whether paid by cash or not. It normally includes such items as vessel and gear repairs, fuel, galley, and crewshare. If the vessel is left at the dock these costs will not be incurred.

**FIXED COSTS**—Also referred to as annual or overhead costs. It includes those costs incurred whether the vessel is fishing or not, such as insurance, depreciation, interest on investment, and licenses.

**OPPORTUNITY COSTS**—The income given up when the fisherman does not work for someone else and when the money invested in his business is not invested elsewhere. Accurate estimation of opportunity costs depends upon the fisherman's ability to identify realistic alternative employment opportunities for his own labor and alternative investment opportunities for his capital. Opportunity cost is as much a cost of fishing as is the cost of fuel, insurance, and gear.

## INFORMATION, THE FIRST STEP

There is no one "best" method or system for accumulating information in a fishing business. Each fisherman can best choose or develop the forms, books, or ledgers that are familiar and easy to use. It makes little sense to spend time learning and using a difficult system which will in the end yield incomplete and inaccurate information.

There are various commercial record systems available to the fisherman and each offers certain advantages over the self-maintained collection of forms, books, and ledgers. Advantages include:

- Being on a "system" (this helps form good record-keeping habits and a routine),
- greater accuracy in arithmetic, and
- a source of ready reference during the season.

The obvious disadvantage is cost, but for many fishermen an investment in a commercial record system will be repaid many times over. Information regarding commercial record systems can be obtained from accountants, banks, and marine extension agents.

To satisfy the management requirements of the business and at the same time satisfy the tax and legal

reporting requirements, the fisherman should consider the following:

1. As an absolute minimum, maintain two separate checking accounts, one for the business and the other for personal, or family use. Keep the accounts completely separate and pay all business expenses by check. This simple business practice, if maintained consistently, leaves most of the record keeping up to the bank!
2. Keep some record, whether a file folder or a tabular sheet of paper, of all receipts including total landing, species, quality, date, price, where sold, and total days fishing effort for that landing.
3. Identify, either in the checkbook or on a separate ledger, the nature of each cost. For example, identify the cost as vessel repair, fuel, galley, or insurance, and wherever possible, attribute it to one or more of the products. Crab pot repair should be charged to crab fishing. The cost of driving the pickup to Seattle for salmon gear, as well as the cost of the gear, should be, for example, charged to salmon.
4. Maintain a simple log or diary of your daily activity, the activity of your vessel, dates, time, location, gear, weather, and success when fishing.
5. Establish a calendar of payments required on various loans and other obligations and the flow of receipts expected.

A variety of other forms and procedures could be suggested, but any fisherman who follows these five recommendations will have an excellent base for a complete analysis of his business, for accurate and efficient management, for accurate and complete tax reporting, and for obtaining loans.

Accurate and efficient management also requires information concerning the costs and returns for competing fishing businesses. Such information can be obtained from studies conducted by universities, the Bureau of Commercial Fisheries, state fishery agencies, and other public or fishermen's organizations.

An example of fishermen developing such information for their own use are the Marine Economics Data Sheets (MEDS) designed to supplement this bulletin and developed by selected West Coast fishermen in cooperation with Oregon State University's Sea Grant Marine Advisory Program. Figure 2 (inserted page) gives an example of a MEDS that was developed during 1969. Page 6 also provides an explanation of MEDS, and how they were developed. The back cover lists some other studies that may be helpful to fishermen by providing cost and returns information on other fisheries.

## PUTTING MANAGEMENT INFORMATION TO WORK

Cost, returns, and production information can first be summarized into a more usable form and then analyzed to determine:

- The highest cost categories in the business,
- the most profitable and unprofitable products,
- return to management,
- return to investment, and
- return to operator labor and management

Figure 2 (inserted page) is part of a Marine Economics Data Sheet (MEDS) that illustrates such a summary and analysis. The data in Figure 2 do not represent a particular boat, but a hypothetical above-average 52-foot Westport troll and crab vessel.

The cost information is first summarized from the checks or ledger into such categories as vessel repairs, gear repairs, galley, fuel, bait, insurance, and licenses. If the cost of operating a pickup or car for business purposes was not recorded separately, the mileage can be obtained from the diary or time log and multiplied by the average cost per mile.

Variable costs are summarized separately from fixed costs for later analysis. The cost in each category is then allocated to each of the products. For such categories as gear repairs, bait, and ice, this is a simple matter, but allocating for vessel repairs, fuel, and insurance requires additional effort. This can be accomplished by calculating the percent of vessel time spent in producing each of these products based upon the log or diary and applying these percentages to each product. For example, the 52-foot vessel illustrated in Figure 2 spent 39% of its time producing crab, (39% of \$14,655 fixed cost = \$5,740 of fixed cost allocated to crab); 23% of its time producing salmon, (23% of \$14,655 fixed cost = \$3,365 of fixed cost allocated to salmon); and 38% of its time producing tuna, (38% of \$14,655 = \$5,550 of fixed cost allocated to tuna).

A straight percentage based on time is not always the most accurate method for allocating costs in such categories as vessel repairs and fuel since the vessel is frequently subjected to rougher use and consumes more fuel per hour fishing for crab than for salmon. Therefore, the percentage should be lower for salmon. In Figure 2, the \$2,020 vessel repairs were allocated 66% to crab, 14% to salmon, and 20% to tuna.

Included in vessel and gear repairs is the value of the labor of the fisherman and his family. This can be derived by estimating or extracting from the log or diary the number of hours devoted to this activity and multiplying by the hourly wage what would be paid to obtain equivalent work. This is one example of the opportunity cost defined previously.

Another opportunity cost is the value of the fisherman's time while operating the vessel. In the example of Figure 2, this is estimated to be 30% of the gross return resulting from each product.

There is also an opportunity cost to the business for having capital invested in a vessel, crab pots, or electronic gear; and an opportunity cost for using money to run the business for 12 months. To determine the opportunity cost of capital invested, the fisherman should

ask himself, "How much could I earn if I invested elsewhere?" In Figure 2 it was felt that the \$56,000 investment could earn 9% elsewhere. That is, if the investment were sold to another fisherman on a contract basis, 9% interest could be charged.<sup>2</sup> Therefore, 9% of \$56,000 or \$5,040 is the opportunity cost of this investment.

The opportunity cost of operating capital is more difficult to estimate. All cash expenses (fuel, bait, parts, supplies, crewshare, insurance premiums, moorage, etc.) must first be added. This amounts to \$51,040 for the example in Figure 2. Since this amount wasn't expended for the entire year, but was built up gradually during the year, opportunity cost cannot be charged against the entire amount. The 10% opportunity cost (interest) is charged against the average amount expended for the year—or to make it simple, half of the \$51,040. This amounts to \$2,552 opportunity cost on operating capital in the Figure 2 example.

Actual interest paid on any long- or short-term loans is not included as a cost since the foregoing procedure has uniformly charged all capital invested and operating capital, whether borrowed or not. Only actual interest paid is deductible from a tax management standpoint and using actual interest paid for business analysis purposes favors the fisherman who has less debt. The opportunity cost procedure is used to place all fishermen on the same business basis.

The final summary is developed by first adding all the costs (variable plus fixed) for each product and for the total season. Gross returns are then taken from the record of production and prices. In Figure 2, total season costs are \$61,835 and total season gross returns before deduction of crewshares are \$60,500.

Analysis is completed by calculating gross returns less variable costs and the returns to management investment, and labor. (Gross returns less variable is the gross return for each product and for the total season minus the corresponding variable costs only.) For example, the \$35,000 gross returns from crab in Figure 2 minus the \$30,660 crab variable costs leaves \$4,340 to help pay the fixed costs such as insurance, property tax, and moorage.

Return to operator management is gross returns (\$60,500) less all costs (\$61,835) and in the Figure 2 example is minus \$1,335. The return to investment is calculated by adding back the opportunity cost of investment charged under fixed costs to determine what was actually earned on the investment. In the Figure 2 example, the \$5,040 opportunity cost (9% of \$56,000) is added to the minus \$1,335 to yield \$3,705 return investment to capital. This is converted to a percentage as follows:

<sup>2</sup> Although 5 to 7% could be earned on the \$56,000 if invested in a savings and loan or in the stock market, the risk associated with this investment is quite different than the risk associated with investing in a fishing vessel. The procedure used here allows for essentially the same level risk as the alternative investment to be considered.

$$\frac{\$3,705}{\$56,000} \times 100 = 6.6\%$$

The return to operator labor and management is calculated by adding the opportunity cost of operator labor back to return to operator management. For example,  $\$18,150 + (-\$1,335) = \$16,815$ . The  $\$18,150$  was derived from 30% of the  $\$60,500$  gross returns.

## WHAT DOES IT ALL MEAN?

The summary and analysis illustrated in Figure 2 makes it easy to evaluate this business and to point out strengths and weaknesses. For example, the gross returns less variable costs for salmon are negative. This fisherman would have been better off by at least  $\$220$  if he had left the vessel tied at the dock during salmon season and worked on someone else's vessel. This doesn't imply that he should not fish salmon next year, but it does mean that if he intends to fish for salmon, he had better concentrate on one or all of the ways to increase profits: higher salmon prices, higher salmon production, or lower salmon production costs. Otherwise, he may be better off concentrating on the two products that are at least returning enough to pay variable costs, perhaps by crabbing further into the salmon season and tuna fishing sooner.

The negative return to management tells this fisherman that he is not earning a return for his management that he could earn in some other occupation. Also his investment is earning only 6.6% while the fisherman feels he could earn 9% by selling his vessel and gear to some other fisherman on a contract basis. This fisherman kept his business going by using up 2.4% (9% - 6.6%) of his investment.

The return to operator labor and management tells this fisherman that his labor and management earned  $\$16,815$  when he felt he could earn  $\$18,150$  operating another vessel. He therefore sustained his business by giving up  $\$1,335$  ( $\$18,150 - \$16,815$ ) in wages.

This does not mean that there was too little income to support his family or does it necessarily mean that he should give up his business. There may be many non-economic reasons to continue fishing and each fisherman should be aware of his own objectives and discuss these fully with his family. Short of suggesting that the fisherman give up fishing, the summary and analysis can indicate several ways to increase returns.

Increased production can come about by fishing more days per year. This of course will increase some of the production costs, may require some additional investment to make the vessel more seaworthy, faster, or more operative in inclement weather—or may even require a different vessel. Whether these added costs will be greater or less than the value of the added production can be determined by budgeting and studying the costs and returns of other vessels.

Increased production can also come about by increasing the landings per trip. This may require greater knowledge of the fishery resource or may require additional investment in improved fish finding and harvesting gear.

A reduction in costs can be implemented through closer control of all financial transactions, increased efficiency of operating equipment, careful purchase of parts and supplies, and various other practices familiar to most fishermen. Attempts to reduce costs must not result in reduced production or a shortened life of production gear and equipment. Finally, management effort in reducing costs is better allocated to items that constitute a large percentage of total cost and can be reduced. For example, time spent in reducing vessel and gear repair, or galley and insurance costs is more sensible than time spent in reducing crewshare, which is a straight percentage of gross, or, say, ice cost—which is minimal (as in Figure 2).

## INTERPRETING AND USING THE MARINE ECONOMICS DATA SHEETS (MEDS)

The Marine Economics Data Sheets (MEDS), such as the one described on page 6, were developed by the OSU Sea Grant Marine Advisory Program to provide management information on the economic conditions of various types of Pacific Northwest fisheries.

The MEDS were not developed through the more traditional research methods. Instead, four to six fishermen from one port representing a common vessel type and size were carefully selected by a marine extension agent for meetings with the Marine Advisory Program's economist. They provided data and jointly developed the MEDS by group discussion.

The fishermen often refer to their own records during these discussion sessions but the principal factors in determining the accuracy of data are their own business awareness, open interchange of information, and mutual agreement during these discussions.

The MEDS may be used by operators to compare costs and returns with his own vessel and certain costs can then be identified as being out of proportion with those on the MEDS—indicating some needed operational changes.

MEDS information may provide the operator with information about the feasibility of entering a new fishery, acquiring a new vessel, or changing gear. Fisheries management agencies may obtain better information on which to base their policies and fishermen's associations may use the MEDS as resource material for bargaining and promoting the cause of the fisheries.

Inquiries and suggestions regarding the Oregon State University Marine Economics Data Sheets should be directed to: Extension Specialist, Marine Economics, Department of Agricultural Economics, Oregon State University, Corvallis, Oregon 97331, or to any of the marine extension agents in Oregon.

# EXAMPLES OF ECONOMIC INFORMATION DEVELOPED BY FISHERMEN GROUPS

Shown on this page is a reduced version of a Marine Economics Data Sheet (MEDS), as developed by the Oregon State University Sea Grant Marine Advisory Program. These sheets are designed to give the fisherman a better understanding of the financial management of his business by providing comparisons with other operators in the Pacific Northwest.

FRONT

BACK

**OSU SEA GRANT MARINE ADVISORY PROGRAM** OREGON STATE UNIVERSITY CORVALLIS, OREGON 97331

MARINE ECONOMICS DATA - 52 FOOT WESTPORT TROLL AND CRAB VESSEL<sup>1/</sup>

Vessel Description: 52 feet by 15 feet, 23 ton capacity, full electronics<sup>2/</sup>, 238 HP diesel engine, full refrigeration, 6 hydraulic gurdies, crab block, 2 hydraulic tone potters and 430 crab pots.

Expected Production and Prices: 70 tons crab at \$500/ton (\$35/lb), 2.5 tons salmon at \$1200/ton (\$480/lb), 30 tons tuna at \$450/ton (\$15/lb).

Variable Costs	Crab <sup>3/</sup>		Salmon <sup>3/</sup>		Tuna <sup>3/</sup>		Crab, Salmon & Tuna Season Total
	Per Season	Per Ton	Per Season	Per Ton	Per Season	Per Ton	
Gear Repairs	\$2200	\$22	\$300	\$200	\$150	\$5	\$2690
Vessel Repairs	1520	19	190	115	400	8	2030
Salt	2800	40	0	0	0	0	2800
Galley	1190	17	480	162	800	16	2470
Transportation	1540	22	180	72	100	2	1820
Post	560	8	130	40	500	11	1260
Ice	0	0	100	40	0	0	100
Miscellaneous	0	0	20	8	95	1	70
Crewshare	10,500	150					10,500
30% of Gross Return			600	240	8500	90	9340
20% of Gross Return					8500	90	18,150
Operator's Share (30%) <sup>4/</sup>	10,500	150	900	360	6750	155	18,150
Total Variable Costs	50,660	438	3220	1288	15,300	266	67,180

**Fixed Costs**

Interest on Investment (9%) <sup>5/</sup>							5040
Insurance							3160
Depreciation							2800
Interest on Operating Capital (4% of 10%) <sup>6/</sup>							2332
Licenses							245
Property Tax <sup>7/</sup>							140
Moorage							100
Miscellaneous <sup>8/</sup>							400
Total Fixed Costs	5740	82	3365	1246	5350	111	16,455

Summary	Crab		Salmon		Tuna		Crab, Salmon & Tuna Season Total
	Per Season	Per Ton	Per Season	Per Ton	Per Season	Per Ton	
Variable & Fixed Costs	\$36,400	\$520	\$6585	\$2195	\$16,450	\$377	\$61,735
Gross Returns	35,000	500	3000	1200	22,500	450	60,500
Gross Returns Less Variable Costs	6,340	62	-220	-88	9,200	184	15,320
Return to Operator Management (Gross Returns less all costs)	-1,400	-20	-585	-194	3,650	75	-1,535
Return to Investment (Return to Operator Management less 9% of \$56,000)							5,709 (6.6%)
Return to Operator Labor & Management (Return to Operator Management plus 30% of Gross)							16,815

Price and/or production to break even, all other prices and production as above<sup>9/</sup>

	Crab	Salmon	Tuna
Break Even Price (¢/lb)	27.38	113.00	15.17
Break Even Production (tons)	77.67	6.75	55.95

<sup>1/</sup> Developed by selected Westport fishermen in cooperation with the Oregon State University Marine Advisory Program. This data is representative of an above average vessel, as described, for the year, November, 1969.

<sup>2/</sup> Trawl, echolometer, radar, 5 radio, recorder, and automatic pilot.

<sup>3/</sup> Costs are allocated to crab, salmon, and tuna on the basis of time expended, except where direct allocation is possible.

<sup>4/</sup> Value of Operator's time whether he is or is not paid.

<sup>5/</sup> Interest is uniformly charged against all investment and operating capital, whether or not borrowed.

<sup>6/</sup> 1% of 23% of \$56,000.

<sup>7/</sup> Legal and professional fees, utilities, gearhead, tools, skiff, etc.

<sup>8/</sup> For example, when crab is \$3.25/lb with 70 tons production, salmon is \$4.60/lb with 2.5 tons production and tuna is \$2.25/lb, net return will be zero with 55.95 tons tuna production.

Published and Re-calculated by OSU Cooperative Extension Service, Corvallis

FIGURE 2 Marine Economics Data Sheet (MEDS), 52 Foot Westport Troll and Crab Vessel

## 1 VESSEL DESCRIPTION

The vessel described does not represent any particular vessel existing within the port. It does represent the vessel that would be typical under slightly more favorable economic conditions. Generally, this implies a little more and a little better electronic gear.

## 2 EXPECTED PRODUCTION AND PRICES

Production as described is what would be expected next year, assuming next year were "normal" and the typical vessel were used. The cooperating fishermen consider "normal" to be more of a trend than an extended average of past year's production. "Normal" takes into consideration weather, regulations, and breakdowns as well as availability of fish and shellfish.

Prices reflect the recent year's experience and are partially derived from secondary data.

## 3 ALLOCATION TO DIFFERENT PRODUCTS OR USES

Since most vessels in the Pacific Northwest are multipurpose, it becomes important from the management standpoint to know the costs and net returns for each product or use. The gross returns and some costs can be directly allocated to each product, but costs such as vessel repairs, depreciation, and insurance must be allocated by some indirect method. These costs are allocated on the basis of time expended for that product or use because this has proved the most realistic method.

Costs and returns are shown on a per season and per ton basis for each product or vessel use. The per ton basis is used in preference to per fishing day, man hour, or some other unit, since all gross returns are received on a per unit of production basis.

#### ④ VARIABLE COSTS

These are the costs which are incurred only if the vessel is fishing. Gear repairs and vessel repairs include the value of the operator's labor in making these repairs plus the value of any unpaid family labor, hired labor, and materials. Transportation is primarily the cost of getting to and from the vessel, whether in the home port or some other port.

The crewshare and operator share is a percentage of the gross returns and may vary with the product or vessel use. The operator share is charged even though the operator may not actually pay himself. It is a fair rate for his labor while aboard the vessel. This, as well as several of the other costs, is seldom calculated in the traditional accounting procedures.

#### ⑤ FIXED COSTS

These are costs which will be incurred even if the vessel were left at the dock for the entire season (year).

First, the average total investment in vessel, gear, and fishing related equipment is determined. Interest is charged on the entire investment whether owned or not and the rate is that which could be earned if invested elsewhere. The operating capital is found by calculating the total requirement for the year and multiplying by 0.5 to obtain the average for the year. An interest rate that could be earned elsewhere is charged to this average operating capital, whether borrowed or not. Thus, the operator who owns all his assets and provides his own operating capital is placed on the same comparative basis as the operator who must borrow to go fishing.

A straight-line depreciation for the reasonable life span of the vessel with no salvage value is taken. This depreciable life is generally about double that which would appear in tax records, but this does not imply that either is incorrect. Both serve a different purpose, financial management versus tax management.

Utilities refers to the heat, electricity, and water used in the operator's home, office, and shop for business purposes.

#### ⑥ SUMMARY

If the gross returns less variable costs are negative for any product or vessel use, the operator would have been better off financially to have left the vessel at the dock during that period and worked for someone else. If this were the case for the season total, the operator would have been better off financially to have worked for someone else the entire season. This does not necessarily imply that the vessel should be sold, but it does suggest that some management changes should be made.

The return to the operator's management is gross returns less all costs. The operator's labor, his investment, and all other costs have been paid, leaving the amount earned by the management effort. This will equal the cash left at season's end only if the operator pays all interest charges and his own labor as shown on the MEDS. Since this is unlikely, most operators would have more dollars left at season's end than indicated by the MEDS.

The return to investment shows what is actually earned on the average investment and is found by adding to the return to operator management the earlier charge made on the investment.

The return to the operator's labor and management is the return to operator management plus the operator's share calculated on the front side of the MEDS.

In general, the return to operator management indicates the value of the operator's management, the return to investment indicates the productivity of the capital invested and the return to operator labor and management measures the productivity of that labor and management. Negative returns indicate that the operator *would have been* financially better off to employ his management, investment, and his labor elsewhere.

#### ⑦ BREAK EVEN PRICES AND PRODUCTION

This table indicates the price and production necessary to break even (return to management equals zero) for each product, with all other prices and production as described on the first side of the MEDS. An example of the use of this table is provided in a footnote on each MEDS.



Cooperative Extension work in agriculture and home economics, Joseph R. Cox, acting director, Oregon State University and the U.S. Department of Agriculture, cooperating. Printed and distributed in furtherance of the Acts of Congress of May 8 and June 30, 1914.

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